

1. Agenda

Documents: [AGENDA 11.20.13.PDF](#)

2. Action Items

Documents: [2. A1. FORE STREET MAP.JPG.PDF](#), [2. A1. FORE STREET MEMO.PDF](#), [2. A2. LELAND MAP.PDF](#), [2. A2. LELAND STREET MEMORANDUM.PDF](#), [2. A2. LINCOLN SCHOOL LETTER.PDF](#), [2. B. DRAFT MS4 PLAN_1.PDF](#), [2. B. PORTLAND DRAINAGE SYSTEM AND CLEAN WATER.PDF](#), [2. C. LIBBYTOWN CIRCULATION MEMO.PDF](#), [2. C. LIBBYTOWN FINAL REPORT.PDF](#), [2. C. LIBBYTOWN.PDF](#), [2. C. MAINEDOT RESPONSE LETTER.PDF](#)

3. Committee Updates/Input Sought

Documents: [3. A. SOLID WASTE SCORECARD.PDF](#), [3. A. SOLID WASTE TASK FORCE SCORE CARD MEMO.PDF](#), [3. B. MEMO WINTER PARKING BAN.PDF](#), [3. C. PESTICIDE USAGE.PDF](#), [3. D. ENVIRONMENTAL PERFORMANCE REPORT - 2013.PDF](#)

CITY OF PORTLAND, MAINE
Transportation, Sustainability and Energy Committee

Transportation, Sustainability and Energy Committee

DATE: 11/20/2013
TIME: 5:30 PM
LOCATION: City Council Chambers
City Hall

AGENDA

1. Approval of October 16, 2013 Meeting Minutes
2. Action Items (Public Comment will be taken on these items)
 - A Traffic Schedule Amendment- Endorse/forward to City Council
 - A1. Fore Street (Adding Parking Spaces)
 - A2. Leland, Richardson Parking - School Day Restriction
 - B MS4 5-year Stormwater Management Plan- Endorse and forward to City Council for action before MaineDEP submittal deadline on December 20, 2013
 - C Libbytown Study- Endorse and forward to City Council as Master Plan
3. Committee Updates/Input Sought
 - A Solid Waste Task Force- Annual Report
 - B Winter Parking Ban Evaluation
 - C Use of Pesticides
 - D Environmental Performance Report
4. Adjourn

Councilor David A. Marshall, Chair
Councilor Kevin J. Donoghue, Vice Chair
Councilors John Anton & Cheryl Leeman

Proposed Parking Changes on Fore Street

Waterville St.

Fore St.

Proposed
Unrestricted Parking
currently "No
Parking." Adds 11
spaces.

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Google earth

Imagery Date: 9/18/2013 43°39'46.97" N 70°14'41.35" W elev 43 ft eye alt 648 ft

MEMORANDUM

TO: District 2 Councilor David Marshall, Chair, TS&E Committee
District 1 Councilor Kevin Donoghue, Vice-Chair, TS&E Committee
District 4 Councilor Cheryl Leeman, TS&E Committee
At-Large Councilor John Anton, TS&E Committee

FROM: Jeremiah Bartlett, Transportation Systems Engineer, Dept. of Public Services

CC: Mike Bobinsky, Kathi Earley, DPS; John Peverada, Parking Division

DATE: November 15, 2013, 2013

RE: **Request for Traffic Schedule Change on the south side of Fore Street near the intersection with Waterville St.**

Background

The Traffic Division received a request from a constituent requesting a review of the “No Parking” on the south side of Fore Street near the intersection of Waterville, which was supported by John Peverada and Councilor Donoghue.

Parking spaces in this neighborhood are becoming scarce as new residents and businesses move into the area, and this additional parking will provide more options for this neighborhood.

Recommendations

We have reviewed the request and after a site visit and measurements believe that the parking schedule should be changed from “NO PARKING anytime” to “Unrestricted parking” on the south side of Fore Street, near the intersection of Waterville St and running between Utility poles 5-111 and 7-113. This will add 11 parking spaces.

A notice was sent to the neighborhood on November 14, 2013.

Proposed Parking Changes on Leland & Richardson Streets

Richardson Street

Proposed "No Parking between the hours of 7 am to 4 PM weekdays" from the intersection of Richardson & Leland 88 feet to the first Handicapped sign. This will result in the loss of 3 unrestricted parking spaces during school hours.

Leland St.

Lincoln School

West side Leland St. from Brentwood to Richardson Sts. Proposed "No Parking between the hours of 7 am to 4 PM weekdays." This will result in the loss of 7 unrestricted parking spaces during school hours.

Brentwood

Brentwood St.
Leland St.

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Google earth

1997

Imagery Date: 9/18/2013 43°40'33.73" N - 70°17'47.80" W elev 116 ft eye alt 782 ft

MEMORANDUM

TO: District 2 Councilor David Marshall, Chair, TS&E Committee
District 1 Councilor Kevin Donoghue, Vice-Chair, TS&E Committee
District 4 Councilor Cheryl Leeman, TS&E Committee
At-Large Councilor John Anton, TS&E Committee

FROM: Jeremiah Bartlett, Transportation Systems Engineer, Dept. of Public Services

CC: Mike Bobinsky, Kathi Earley, DPS; John Peverada, Parking Division

DATE: November 15, 2013, 2013

RE: **Request for Traffic Schedule Change on the West side of Leland Street and the North side of Richardson Street**

Background

The Traffic Division received a request from Steve Nolan, the principal of Lincoln School to eliminate on-street parking on section of Leland and Richardson Streets on weekdays during school hours.

With the current parking on the west side of Leland and the north side of Richardson, access to the rear of the school for deliveries or emergency vehicles is extremely difficult, and is greatly exacerbated during the winter months. Please see the attached letter from Principal Nolan for more background on the situation.

Recommendations

We have reviewed the request and after a site visit and measurements believe that the parking schedule should be changed from unrestricted parking to “NO PARKING between the hours of 4 and 7 pm on weekdays” This will result in a loss of 7 unrestricted spaces on Leland and 3 unrestricted spaces on Richardson during school hours only.

A notice was sent to the neighborhood on November 14, 2013.

Hi Jeremiah,

I'm requesting posting no parking during school days on the north side of Richardson Street at the corner of Leland Street the equivalent of one parking space to allow room for buses and service vehicles to safely make the turn onto Richardson Street from Leland Street.

I'm also requesting expanding no parking during school days on the west side of Leland Street to the corner of Brentwood Street to address a few issues. With vehicles parked on the west side of Leland Street, there is no room for emergency or other vehicles to drive on Leland Street when buses are stopped on Leland Street. This is most challenging at the end of the school day when several buses line up and wait for students to be dismissed, but is also a challenge with morning drop-offs, field trips and sports teams. Also, it is difficult for service vehicles to access our rear parking lot for deliveries, including food deliveries made daily. And, it's difficult for buses to make the turn onto Leland Street from Brentwood Street with cars parked on the west side of Leland Street. These challenges are exacerbated when snow accumulates.

Please let me know if you have questions or need my help at the meeting next Wednesday.

Thanks, Steve

Steve Nolan, Principal
Lincoln Middle School
522 Stevens Avenue
Portland, Maine 04103
phone: 207.874.8145
fax: 207.874.8288

**STORMWATER PROGRAM
MANAGEMENT PLAN**

FOR

CITY OF PORTLAND, MAINE



Date: December 20, 2013

TABLE OF CONTENTS

1. INTRODUCTION

I. Overview of Regulatory Program	1
A. Stormwater Program Management Plan	1
B. Minimum Control Measures	1
C. Evaluation and Assessment	2
D. Annual Reporting and Record Keeping	2
II. Basis of Plan Development	3

2. REGULATED MS4 INFORMATION

I. Location Map	4
II. Urbanized Area Map	4
III. Priority Watersheds	4

3. MINIMUM CONTROL MEASURES

I. Public Education and Outreach	5
II. Public Involvement and Participation	9
III. Illicit Discharge Detection and Elimination	9
IV. Construction Site Stormwater Runoff Control	12
V. Post-Construction Stormwater Management in New Development and Redevelopment	13
VI. Pollution Prevention/Good Housekeeping for Municipal Operations	15

4. GENERAL REQUIREMENTS

I. Required Signature	19
II. Plan Availability	19

FIGURES

A. Location Map.....	21
B. Urbanized Area Map.....	22

APPENDICES

A. Notice of Intent	24
B. Urban Impaired Stream Watersheds	26

SECTION 1 INTRODUCTION

I. Overview of Regulatory Program

This Municipal Separate Storm Sewer System General Permit, hereinafter described as the General Permit, authorizes the direct discharge of stormwater from a regulated small municipal separate storm sewer system (“MS4”) to a MS4 or waters of the State other than groundwater, provided that the MS4 is located in an Urbanized Area as determined by the inclusive sum of the 2000 and 2010 Decennial Census by the Bureau of Census. Small MS4s are those entities which meet the definition in 40 CFR Part 122.26(b)(16). Regulated small MS4s are those entities required pursuant to 40 CFR 122.26(a)(9)(i)(A) to obtain stormwater permit coverage to operate their small MS4. Discharges from regulated small MS4s must meet the requirements of this General Permit and applicable provisions of Maine's waste discharge and water classification statutes and rules. Compliance with this General Permit authorizes a person to discharge stormwater, pursuant to Water Pollution Control Law, 38 M.R.S.A. § 413, as described below. Discharges listed in Part I(D)(2-6) of the General Permit are excluded from coverage under this General Permit. Unless otherwise explicitly noted, this permit only covers operations or activities associated with stormwater runoff from the regulated small MS4 within an identified Urbanized Area.

A. Stormwater Program Management Plan

The regulated MS4 owner or operator, hereinafter the “permittee” or “City of Portland”, shall develop, implement, and enforce a Stormwater Program Management Plan (“Plan”) implementing six minimum control measures, set forth in Section H of the General Permit, which are designed to reduce the discharge of pollutants from its regulated small MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. For the purposes of this permit, narrative effluent limitations requiring implementation of BMPs are generally the most appropriate form of effluent limitations when designed to satisfy technology requirements (including reductions of pollutants to the MEP) and to protect water quality. The Plan and all Minimum Control Measures must be substantially implemented by June 30, 2018. The permittee shall describe in its Stormwater Program Management Plan how it will reduce or eliminate polluted stormwater runoff to the maximum extent practicable, from its regulated MS4.

B. Minimum Control Measures (MCM's)

The General Permit requires that for each MCM, the permittee shall: define appropriate best management practices (BMPs); designate a person(s) or position(s) responsible for each BMP; define a time line for implementation of each BMP; and define measurable goals for each BMP. The Minimum Control Measures to be included in the Plan are as follows:

- Public education and outreach on stormwater impacts
- Public involvement and participation
- Illicit discharge detection and elimination

- Construction site stormwater runoff control
- Post-construction stormwater management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations

C. Evaluation and Assessment

As specified in Part IV(J)(1) of the General Permit, the permittee shall evaluate program compliance, the appropriateness of identified best management practices, and progress towards achieving identified measurable goals.

D. Annual Reporting and Record Keeping

The permittee shall keep records required by the permit for at least three (3) years following its expiration, or longer, if requested by the DEP Commissioner. The permittee shall make records, including its Stormwater Program Management Plan, available to the public at reasonable times during regular business hours.

By September 1, 2014, and annually thereafter by September 15, the permittee shall submit a report for the Department's review and approval to:

**Municipal/Industrial Stormwater Coordinator
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017**

The report must include the following:

1. The status of compliance with permit conditions based on the permittee's Plan, an assessment of the appropriateness of identified best management practices, progress towards achieving identified measurable goals for each of the Minimum Control Measures, and progress toward achieving to goal of reducing the discharge of pollutants to the MEP.
2. Results of information collected and analyzed, including monitoring data, if any, during the reporting period.
3. A summary of the stormwater activities the permittee intends to undertake pursuant to its Plan during the next reporting cycle.
4. A change in any identified BMPs or measurable goals that apply to the Plan.
5. A summary describing the activities, progress, and accomplishments for each of the minimum control measures #1 through #6 (including such items as the status of education and outreach efforts, public involvement activities, stormwater mapping efforts, dry weather inspections, detected illicit discharges, detected illicit connections, illicit discharges that were eliminated, construction site inspections, number and nature of enforcement actions, post construction BMP status and inspections, and the status of the permittee's good housekeeping/pollution prevention program.

Changes to the report based on the Department's review comment(s) must be submitted to the Department within 60 days of the receipt of the comment(s). If possible, the permittee will provide an estimate of annual expenditures for permit compliance for the reporting period and projected budget for the following year.

II. Basis of Plan Development

This Stormwater Program Management Plan was developed in accordance with the requirements of the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, which was issued by the Maine Department of Environmental Protection (DEP) on July 1, 2013. Per the General Permit, implementation of the six MCMs is required only within the urbanized area, as determined by the inclusive sum of the 2000 and 2010 Decennial Census by the Bureau of Census.

Integrated Municipal Stormwater and Wastewater Planning Approach

On June 5, 2012, EPA released the final Integrated Municipal Stormwater and Wastewater Planning Approach Framework. The framework was developed in conjunction with the October 27, 2011 memorandum entitled Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans. The "framework" was developed to provide further guidance for EPA, States and local governments in developing and implementing effective integrated plans under the Clean Water Act.

The City of Portland remains committed to complying with Clean Water Act mandates including the MS4 permit as evidenced in our Notice of Intent to Comply. The City understands that the "integrated plan framework" is an option provided to help municipalities meet their CWA obligations by optimizing the benefits of their infrastructure improvement investments through the appropriate sequencing of work and is not about lowering existing regulatory or permitting standards or delaying necessary improvements.

The City of Portland reserves the right to petition MaineDEP under Reopener provisions of the General Permit Part I.D.7 if and when the City engages in the development of an integrated municipal stormwater and wastewater plan and if and when the City identifies a sequencing of work that deviates from the conditions of this MS4 general permit.

SECTION 2 REGULATED MS4 INFORMATION

I. Location Map

The location map for the City of Portland is included as Figure 2.1.

II. Urbanized Area Map

The urbanized area map was developed by the EPA from the U.S. Census Bureau 2000 and 2010 Decennial Census Urbanized Area and Urban Cluster Data, and is included as Figure 2.2.

III. Priority Watershed

The City's highest priority watershed is: Capisic Brook Watershed. Several factors lead Portland to focus on this watershed, including, but not limited to the following:

- Over 1500 acre size of Capisic Brook Watershed (within Portland)
- Single family home density and commercial land use mix
- Complexity of the watershed's hydrography and underground sewer & storm systems
- Watershed boundary overlap into City of Westbrook
- The City has completed a majority of its CSO abatement work within this watershed.
- The City has a DEP-approved Watershed Management Plan for this watershed.

SECTION 3 MINIMUM CONTROL MEASURES

I. PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

The City of Portland will fulfill the requirements for Public Education and Outreach through participation in the Interlocal Stormwater Working Group (ISWG) and the permittee's provision of funding to the ISWG for Public Education and Outreach services, as described in this section of the plan.

Responsible Party: Portland Public Services in cooperation with ISWG Education Coordinator.

A. Goals

1. To raise awareness that polluted stormwater runoff is a significant source of water quality problems for Maine's waters;
2. To motivate people to use Best Management Practices (BMPs) which reduce polluted stormwater runoff ; and
3. To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.

B. Required Best Management Practices

1. Raise Awareness.

Each permittee or stormwater group of which the permittee is a member shall have a new Awareness Plan or revise an existing Plan to raise awareness of stormwater issues for a target audience outside of municipal government. The permittee shall submit draft Stormwater Awareness Plan to the Department for review and approval by December 1, 2013. The Stormwater Awareness Plan is considered approved as of February 1, 2014, unless the permittee receives written communication from the Department indicating non-approval.

- i. In Permit Year 1, the City and ISWG will continue select awareness activities from previous permit cycle which will include; maintaining a link to www.thinkbluemaine.org on municipal website; participation in a statewide media campaign to include 12 months of television advertisements and 12 months of online advertisements that direct to www.thinkbluemaine.org; and promote their approved public event.
- ii. In Permit Year 1, the City and ISWG will refine and revise the Awareness Plan.
- iii. In Permit Year 1-5, the City will implement Awareness Plan elements internally or through ISWG partnerships consistent with the Awareness Plan.
- iv. In Permit Year 5, the City with its ISWG partners will evaluate Awareness Plan and prepare to modify for next permit cycle.

Reporting: The permittee shall include a review of the Stormwater Awareness Plan outreach efforts in each of its Annual Reports.

2. Raise Municipal Permit Awareness.

Permittee shall develop and implement an education program aimed at municipal staff, employees or volunteers. The permittee shall begin implementation of the Permit Awareness Plan within one week of its approval. The permittee shall submit the draft Permit Awareness Plan to the Department for review and approval. The Permit Awareness Plan is considered approved as of March 1, 2014, unless the permittee receives written communication from the Department indicating non-approval.

- i. In Permit Year 1 and by January 6, 2014 the City will submit a plan to DEP through ISWG to raise permit awareness. Unless DEP responds in writing or verbally otherwise, as of March 1, 2014 the Awareness Plan is considered approved and implementation of the Permit Awareness Plan will begin.
- ii. In Permit Year 1, the City and ISWG will assess or utilize existing assessments of the target audience to document baseline level of action by which the implementation of the Permit Awareness Plan can be measured.
- iii. In Permit Year 2-4, the City will implement Permit Awareness Plan elements internally or through ISWG partnerships.
- iv. In Permit Year 5, the City with its ISWG partners will evaluate Permit Awareness Plan and prepare to modify for next permit cycle.

Reporting: The permittee shall include a review of the Permit Awareness Plan outreach efforts in each of its Annual Reports.

3. Target BMP Adoption

Each permittee or stormwater group of which the permittee is a member shall have a new or revised Adoption Plan with the goal of promoting behavior change through the implementation of BMPs. The permittee shall submit the draft BMP Adoption Plan to the Department for review and approval by November 1, 2014. The BMP Adoption Plan is considered approved as of, January 15, 2014 unless the permittee receives written communication from the Department indicating non-approval.

- i. In Permit Year 1, the City and ISWG will assess or utilize existing assessments of the target audience to document baseline level of action by which the implementation of the BMP Adoption Plan can be measured.
- ii. In Permit Year 1, the ISWG will continue BMP adoption activities carried out in Permit Year 5 (2008-2013) of the previous BMP Adoption Plan. Activities include: Providing a minimum of six adult education classes throughout the ISWG region per year; Work with a minimum of 21 retail locations to provide healthy lawn care education to consumers; Maintain the YardScaping website hosted on CCSWCD's website; and Provide

information to targeted neighborhoods via direct mail, neighborhood canvassing, socials or other means.

- iii. In Permit Year 1 and by November 1, 2014 the City will submit a plan to DEP through ISWG to encourage the targeted audience to adopt or practice specific BMPs that will reduce stormwater pollution.
- iv. In Permit Year 2-4, the City will implement BMP Adoption Plan elements internally or through ISWG partnerships.
- v. In Permit Year 5, the City with its ISWG partners will evaluate BMP Adoption Plan and prepare to modify for next permit cycle.

Reporting: The permittee shall include a review of the BMP Adoption Plan in each of its Annual Reports.

4. Enhanced Education and Outreach

Permittees will enhance their education and outreach effort in their impaired or priority watershed or work to address a stormwater pollutant issue of regional or statewide significance. Permittees with an impaired waterbody may either target a specific activity that if successfully addressed will improve and/or protect water quality in the priority or impaired watershed(s) or the permittee may choose instead to work singly or collaboratively on a common regional or statewide stormwater pollutant issue. The goal of the effort should be to reduce or eliminate the pollutant(s) of concern.

- i. In Permit Year 1 and by July 1, 2014, the City shall develop a draft plan on how it plans to meet either permit requirement as stated above.
- ii. In Permit Year 2-4, in conjunction with the ISWG the City will implement the Priority Watershed Plan.
- iii. In Permit Year 5, the City with its Salt Manager partners will evaluate program and prepare to modify for next permit cycle.

Reporting: Review of Targeted Outreach in Priority Watershed Plan will be included in Annual Reports starting in permit year two. The review will include process and impact indicators as outlined in the Targeted Outreach in Priority Watershed Plan. In permit year five an analysis of the process and impact indicators of the Targeted Outreach in Priority Watershed Plan will be provided.

C. *Additional Best Management Practices*

1. School Outreach

- i. In Permit Year 1, continue the incorporation and implementation of “It’s all connected” school curriculum in elementary and/or middle schools.
- ii. In Permit Years 2 - 5, as funding permits, continue the incorporation and implementation of “It’s all connected” school curriculum in elementary and/or middle schools.

Reporting: Annual reports will include the total number of students reached, which schools were involved and the lesson topics that were covered.

II. PUBLIC INVOLVEMENT AND PARTICIPATION

The City will fulfill the requirements for Public Involvement and Participation through participation in and partial funding of the Interlocal Stormwater Working Group (ISWG) for Public Involvement and Participation services, or through directly fulfilling the requirements, as described in this section of the plan. The City will involve the public in both the planning and implementation process of improving water quality and reducing quantity via the stormwater program.

Responsible Party: Portland Public Services in cooperation with ISWG Education Coordinator.

A. Goal

Involve the public in both the planning and implementation process of improving water quality via the stormwater program.

B. Required Best Management Practices

1. Public Notice Requirement

The permittee shall comply with applicable state and local Public Notice requirements using effective mechanisms for reaching the public, and comply with the public notice requirements of the Maine Freedom of Access Act, 1 M.R.S.A. §§ 401 et seq. ("FOAA") when the permittee involves stakeholders in the implementation of this General Permit. The permittee shall document the meetings and attendance through the annual report as a way of measuring this goal.

- i. The City and ISWG will follow state and local Public Notice requirements for both ISWG and individual Stormwater Program Management Plan elements.
- ii. The City and ISWG will follow state and local Public Notice requirements when involving stakeholders in the implementation of the Small MS4 General Permit.

Reporting: The annual report will describe compliance with public notice requirements including documentation of meetings and attendance, where applicable.

2. Host Public Event

The permittee or regional stormwater group of which the permittee is a member shall annually host/conduct or participate in a public event. The event must include a pollution prevention and/or water quality theme. The target audience does not need to be

the entire urbanized area but should be aimed at a segment of the population that the permittee wishes to reach. The permittee shall include a report of the public event in each of its Annual Reports.

- i. The City and/or City with ISWG will support/host/conduct an annual public event.

Reporting: The annual report will include description of the event. The report will include process indicators which assess the permittee's planning and execution, as well as impact indicators which assess the effectiveness of the event. The permittee shall also include a comprehensive review of the public events in its fifth year Annual Report that must include an analysis of the process indicators and impact indicators. The Permit Year 5 report will include a comprehensive review of the public event, including an analysis of the process and impact indicators.

C. *Additional Best Management Practices*

1. Household Hazardous Waste Collection

The City will continue to offer weekly collection of Household Hazardous Waste between April and November via drop-off at the Riverside Recycling facility. This service is also made available to other communities. Additionally, we accept Universal Waste six days a week year round. This includes fluorescent tubes, compact fluorescents, CRTS & TVs, mercury added items, batteries, and electronics.

III. ILLICIT DISCHARGE DETECTION AND ELIMINATION

The City of Portland shall develop, implement and enforce a program to detect and eliminate illicit discharges and non-stormwater discharges within the non-combined sewer MS4 area.

Responsible Party: Portland Department of Public Services.

A. *Goal*

Develop, implement and enforce a program to detect and eliminate illicit discharges and non-stormwater discharges.

B. *Required Best Management Practices*

1. Revise and Refine a Storm Sewer System Infrastructure Map.

Permittees subject to the 2008 MS4 General Permit shall continue to keep their map(s) current and ensure that maps are reviewed for any updates at least annually.

- i. By the end of Permit Year 1, the City will review its respective storm

sewer infrastructure maps in order to identify key storm sewer attributes and identify targeted geographic or data attributes for revision. Attributing will likely focus on identifying and clarifying MS4 outfalls and state, City or private ownership.

- ii. In Permit Years 2-5, the City will continue to update both geographic and data attributes of its MS4 storm sewer system GIS geodatabase (as necessary).

Reporting: Annual update of mapping efforts undertaken in the Permit Year.

2. Maintain non-stormwater discharge ordinance.

Permittees subject to the 2008 MS4 General Permit shall to the extent allowable under State or local law, continue to implement, and provide annual reporting of the permittee's non-stormwater discharge ordinance that effectively prohibits, unauthorized non-stormwater discharges into the permittee's storm sewer system. This BMP will also include coordination with the Portland Water District regarding water line and hydrant flushing to determine if either is a significant contributor of pollutants to the MS4

- i. In Permit Year 1, coordinate with the Portland Water via mail or in person to evaluate whether or not water line or hydrant flushing from potable water sources is a significant contributor of pollutants to the MS4. Evaluation will include the following action:
 - o Provide the Portland Water District with a location map showing the extent of the municipal urbanized area, and the highest priority watershed(s).
 - o Gather information from the Portland Water District, specific to the urbanized area and priority watershed(s), including the number and location of hydrants and details on water line or hydrant flushing that outlines procedures, including how often flushing occurs, typical flow rates and duration, where the water is conveyed, what the target or actual chlorine concentrations are, and what best practices are employed to prevent erosion and address potential pollutants.
- ii. By no later than December 30, 2014, unless otherwise approved by the Department, using available GIS or other municipal mapping information, the location of hydrants will be added to the storm sewer system infrastructure map to aid in the evaluation; the City will work with the Portland Water District to prioritize the hydrants or water lines that have the potential to cause exceedances of the ambient water quality criterion for chlorine when discharged through the MS4. The City will request a water quality progress report that documents what best management practices are being implemented for flushing activity at the prioritized

hydrants as well as the Portland Water District's testing results of the total residual chlorine for any such discharges.

- iii. Permit Years 3 – 5, the City will request an annual water quality progress report that documents what best management practices are being implemented for flushing activity at the prioritized hydrants as well as the Portland Water District's testing results of the total residual chlorine for any such discharges.
- iv. If it is determined by the end of Permit Year 3, that water line or hydrant flushing is a significant contributor of pollutants to the MS4, and the Portland Water District has demonstrated that it will not voluntarily implement BMPs in order to reach ambient water quality criteria for chlorine, the City will, as soon as practicable or by no later than the end of Permit Year 4, update their IDDE ordinance to allow enforcement of discharges that cause exceedances of water quality criteria.
- v. Permit Year 1-5, continue to maintain and enforce non-stormwater discharge ordinance.

Reporting: The annual report will include a status update on the evaluation of water line and hydrant flushing as a significant contributor of pollutants to the MS4 and an update on subsequent actions.

3. Continue IDDE program for MS4.

Permittees subject to the 2008 MS4 General Permit shall continue to implement its prioritized dry weather outfall inspection plan based on drainage areas such as an urban impaired stream watershed, or based on a watershed or sub-watershed that the permittee has identified as having the greatest potential threat to the receiving water. Permittees subject to the 2008 MS4 General Permit shall revise their outfall inspection plan and continue conducting dry weather inspections in different watersheds or sub-watersheds as approved by the Department and evaluate discharges for illicit connections.

The municipality must have a defined procedure/policy or protocol in place that details the steps that must be taken when an illicit discharge is identified during these inspections to locate the source of the illicit discharge and eliminate it.

- i. By end of Permit Year 1, refine and revise outfall inspection plan, inspection areas and timeline.
- ii. By end of Permit Year 1, refine and revise (as needed) SOP(s) for dry weather outfall inspection program and opportunistic catch basin investigations.
- iii. By end of Permit Year 1, refine and revise (as needed) forms and data collection system in place for dry weather outfall inspections.
- iv. By end of Permit Year 1, refine and revise (as needed) policy/procedure or protocol that identifies the steps that must be taken when an illicit discharge is encountered in order to locate the source of the illicit discharge and eliminate it.
- v. In Permit Years 2 - 5, conduct annual dry weather outfall inspections and

opportunistic catch basin inspections within the areas identified in the inspection plan.

Reporting: Inspection results will be documented in a database management system or other recordkeeping system and a summary will be reported in annual reports submitted to the DEP.

4. Open Ditch Illicit Discharge and Septic System Assessment

Permittees subject to the 2008 MS4 General Permit shall continue to implement an illicit discharge/illicit connection detection program based upon a schedule approved by the Department. Each permittee shall develop a list of septic systems in its highest priority watershed that are 20 years old or greater and which may discharge to the MS4 if the system fails. By June 30, 2017, each permittee shall implement a drive-by evaluation and documentation program of septic systems in its highest priority watershed that are 20 years old or greater and which have the potential to discharge into the MS4. This septic system inspection and documentation program must include a mechanism for addressing any discharges to the MS4 from malfunctioning septic systems.

- i. During Permit Years 1, the City will incorporate a strategy in its overall IDDE plan, for detecting illicit discharges in their open ditch system.
- ii. During Permit Year 1-3, the City will document known septic system areas and include in overall watershed map.
- iii. During Permit Year 4, the City will conduct drive by evaluation of septic areas within it highest priority watershed.

Reporting: Annual reports to DEP will include a status report on the development and implementation of the Open Ditch Illicit Discharge and Septic System Assessment.

IV. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Each permittee shall develop, implement, and enforce a program, or modify an existing program, to reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

Responsible party: Portland Planning and Urban Development with support from Public Services

A. Goals

Reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.

Per General Permit Part IV(H)(4a.), the City will rely on either the Maine Construction General Permit or Chapter 500, Stormwater Management.

B. *Required Best Management Practices*

1. Notification to Developers.

The City of Portland will maintain procedures for notifying construction site developers and operators of the requirements for registration under the Maine Construction General Permit or Chapter 500, Stormwater Management for the discharge of stormwater associated with construction activities.

- i. During Permit Year 1 - 5, continue notification procedures currently in place using check-off box notices on building permit applications that notify applicants of the registration requirements.

Reporting: Any system modifications will be summarized in our annual reports.

2. Document every construction activity that disturbs one or more acres in the City.

- i. In Permit Year 1, refine and revise tracking system (as needed) to record every activity that disturbs one or more acres

Reporting: The system will be used to summarize construction activity to be included in annual reports submitted to the DEP.

3. Implement a construction site inspection program.

Implement site inspections procedures to ensure projects are in compliance with the MCGP and Chapter 500, Stormwater Management. In watersheds of Urban Impaired Streams, and in the permittee's highest priority watershed, inspect the construction activity at least three times with one inspection at project completion to ensure that all post construction BMPs were properly installed, and that final stabilization of the site has been completed. All construction inspections must be properly documented. For other watersheds, inspect the construction activity a minimum of twice, with one inspection at project completion to ensure that all post construction BMPs were properly installed, and that final stabilization of the site has been completed.

- i. By the end of Permit Year 1, refine and revise procedures for construction site inspections.

- ii. By the end of Permit Year 1, refine and revise (as needed) a standardized inspection form to ensure documentation of all required inspections.
- iii. By the end of Permit Year 1, refine and revise (as needed) a process for tracking.

Reporting: Inspections will be documented in a database management system or other recordkeeping system and a summary will be reported in annual reports submitted to the DEP.

V. POST-CONSTRUCTION STORMWATER MANAGEMENT

Each permittee shall develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4. This program shall ensure that controls are in place that will prevent or minimize water quality impacts.

Responsible Party: Portland Public Services with support from Planning and Urban Development

A. Goal

Implement and enforce a program to address stormwater runoff from new development and redevelopment projects that discharge into the City's MS4.

B. Required Best Management Practices

1. Maintain stormwater management ordinance

To ensure adequate long-term operation and maintenance of post construction BMPs, each permittee subject to the 2008 MS4 General Permit shall continue to implement a post construction discharge ordinance, or similar measure approved by the Department.

- i. Permit Year 1-5, continue to maintain and enforce Stormwater Management ordinance.

Reporting: Annual reporting of the City's stormwater management discharge ordinance and any achievements associated with the ordinance, as applicable.

2. Manage inspection program for post construction

Each permittee shall annually inspect a percentage of post construction BMPs located in the direct watershed of a lake most at risk from new development or in watersheds of an urban impaired stream. If the owner or operator of a post construction BMP hires a qualified third party inspector, the permittee will have no inspection requirements. If the owner or operator of a post construction BMP does a "self" inspection, the permittee is required to conduct the inspection schedule as shown on schedule in H.5.a.iii.

- i. Permit Year 1-5, the City will continue to rely on third-party inspections consistent with its ordinance and will conduct annual inspections of a percentage of post construction BMPs owned by the City and within its Urban Impaired Stream watersheds, in accordance with schedule outlined in the General Permit.
- ii. In Permit Year 2, refine and revise notification program for third-party inspections of private post-construction BMPs.
- iii. In Permit Year 2, refine and revise tracking system (as needed).

Reporting: Documentation of all inspections will be maintained by the City. Information to be collected includes:

- The cumulative number of sites that have post construction BMPs discharging into the City's MS4;
- A summary of the number of sites that have post construction BMPs discharging into the City's MS4 that were reported to the municipality;
- The number of sites with documented functioning post construction BMPs; and
- The number of sites that required routine maintenance or remedial action to ensure that the post construction BMP is functioning as intended.

3. Develop and Implement LID notification procedure.

Each permittee shall develop and implement a procedure for notifying site developers to consider incorporating low impact development techniques.

- i. Permit Year 1, the City will outline a procedure to notify developers on about LID.
- ii. In Permit Year 2-5, the City will implement relevant changes to notify developers of LID.

Reporting: The City will provide updates on implementation and any changes to procedure in its Annual Report.

Additional Best Management Practices

1. Stormwater Control Ordinance

The City currently utilizes a more stringent version of Chapter 500 that applies post-construction stormwater management BMPs to a broader category of projects (i.e., not limited to activities that result in a land disturbance of greater than or equal to one acre) and applies them city-wide.

VI. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

Responsible Parties: Portland Department of Public Services

A. *Goal*

Prevent or reduce pollutant runoff from municipal operations and facilities.

B. *Required Best Management Practices*

1. Operations at municipally owned grounds and facilities.

Permittees subject to the 2008 MS4 General Permit shall continue to maintain their inventory of properties, facilities and activities, and continue implementation of their operation and maintenance plans.

- i. By the end of Permit Year 1, the City will refine and revise its list of and SOPs for municipal facilities, buildings, golf courses, cemeteries, parks and open space owned or operated by the City that have the potential to cause or contribute to stormwater or surface water pollution.
- ii. Permit Years 1-5. Update list of facilities and SOPs as needed.

Reporting: Annual reports to DEP each year of the permit will include a status report on the facilities and operations and maintenance procedures.

2. Municipal employee training.

The permittee shall report annually on the types of stormwater-related trainings presented, the number of municipal and contract staff that received training, the length of the training, and training effectiveness.

- i. By end of Permit Year 1, revise and refine training needs and materials (as needed).
- ii. In Permit Years 1-5 implement municipal employee training program to reduce stormwater pollution potential from municipal operations.

Reporting: Annual reports to DEP each year of the permit will include a status report on training programs, the types of trainings presented, number of employees and contract staff that received training, the length of the training and training effectiveness.

3. Street sweeping.

The permittee shall develop and implement a program to sweep all publicly accepted paved streets and publicly owned paved parking lots maintained by the permittee at least once a year as soon as possible after snowmelt.

- i. Each permit year the City of Portland will continue a program to sweep all publicly accepted paved streets and publicly owned paved parking lots maintained by the City at least once a year as soon as possible after snowmelt.

Reporting: Annual reports to DEP each year of the permit will include a status report on street and parking lot sweeping.

4. Cleaning of stormwater structures including catch basins.

The permittee shall develop and implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once every other year and dispose of the removed sediments in accordance with current state law. The permittee shall clean catch basins more frequently if inspections indicate excessive accumulation of sediment. Excessive accumulation is greater than or equal to 50 percent filled.

- i. Each permit year the City will continue a program to evaluate and, if necessary, clean catch basins and other stormwater structures within MS4 that accumulate sediment at least once every other year and dispose of the removed sediments in accordance with current state law. The City will clean catch basins more frequently if inspections indicate excessive accumulation of sediment. Excessive accumulation is greater than or equal to 50 percent filled.

Reporting: Annual reports to DEP each year of the permit will include a status report on cleaning of catch basins and other stormwater structures.

5. Maintenance and upgrading of stormwater conveyances and outfalls.

The permittee shall evaluate and implement a prioritized schedule, as necessary, for repairing or upgrading the conveyances, structures and outfalls of the regulated small MS4.

- i. Permit Years 1-5, the City will continue to develop and manage its storm sewer system through a Capital Improvement Planning process.

Reporting: Annual reports to DEP each year of the permit will include a status report on the City's Storm Sewer CIP effort for the previous year (as applicable).

6. Stormwater Pollution Prevention Plans (SWPPP's)

Permittees subject to the 2008 MS4 General Permit shall continue to implement and update their SWPPP(s) to ensure it meets Maine's April 26, 2011 MSGP requirements including visual monitoring.

- i. Permit Year 1-5, the City will continue to implement and revise SWPPPs for each applicable facility (as needed).

Reporting: Annual reports to DEP each year of the permit will include a status report on the implementation of the SWPPP's.

SECTION 4 GENERAL REQUIREMENTS

I. Required Signature

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____ Date: _____

Title: City Manager

II. Plan Availability

This Plan will be retained by the City's principal executive officer for the duration of the permit period and copies will be available and retained by municipal officials or employees responsible for implementation of the Plan. The City will make a copy of the Plan available to the following immediately upon request:

- A. The Commissioner of the Department;
- B. In the case of a regulated small MS4 adjacent to or interconnected with the City's storm sewer system, to the operator of that regulated small MS4; and
- C. In the case of a regulated small MS4 stormwater discharge to a water supply watershed, to the public water supply company.

FIGURES

Figure 2.1	Location Map
Figure 2.2	Urbanized Area Map

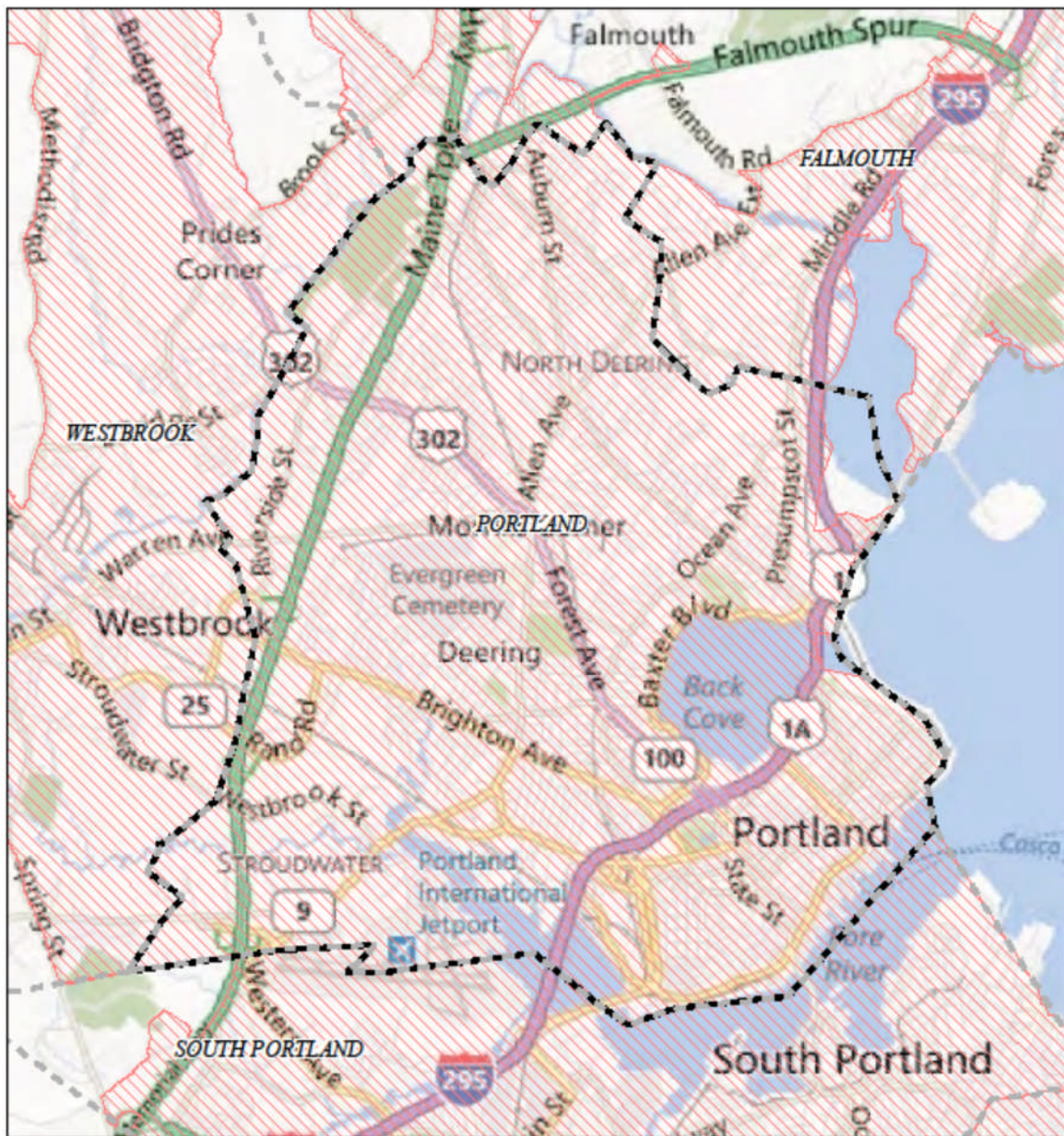


**Figure 2.1 Location Map
City of Portland, Maine**

0 1 2 3 4 5
Miles



City of Portland, Maine
Department of Public Services
December 19, 2008



**NPDES Phase II Stormwater Program
Automatically Designated MS4 Areas**

Portland ME

Regulated Area (2000 + 2010 Urbanized Area)



Town Population: **65606**
Regulated Population: **64581**
(Populations estimated from 2010 Census)



Urbanized Areas, Town Boundaries:
US Census (2000, 2010)
Base map © 2010 Microsoft Corporation
and its data suppliers

US EPA Region 1 GIS Center Map #8524, 11/19/2012

APPENDICES

- A. Notice of Intent
- B. Urban Impaired Stream Watersheds

APPENDIX A
NOTICE OF INTENT

NOTICE OF INTENT TO COMPLY WITH MAINE GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS

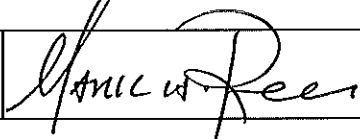
PLEASE TYPE OR PRINT IN BLACK INK ONLY

Municipality:	City of Portland, Maine	Mailing Address:	389 Congress Street		
Town/City:	Portland	State:	Maine	Zip Code:	04101
Name and title of chief elected official or principal executive officer:	Mark Rees, City Manager	Mailing Address:	389 Congress Street		
Town/City:	Portland	State:	Maine	Zip Code:	04101
Name of primary contact person responsible for MS4 stormwater management program:	Michael Bobinsky, Director of Public Services	Mailing Address:	55 Portland Street		
Town/City:	Portland	State:	Maine	Zip Code:	04101
Daytime phone: (with area code)	207-874-8800	Email if available:	mbobinsky@portlandmaine.gov		
Estimate of the area in square miles of the Urbanized Area:	Approx. 26 sq. miles	Permit Number (if applicable):	MER041024		
Name of stream(s), wetland(s) or waterbody(ies) to which the regulated Small MS4 discharges and a list of impaired waterbody(s) which receive stormwater from the Regulated Small MS4 (attach additional sheets as necessary):	Casco Bay, Back Cove, Fore River, Presumpscot River, Stroudwater River, Capisic Brook, Capisic Pond, Dole Brook, Fall Brook & Nason's Brook/wetlands				
Impaired per 2010 Integrated Water Quality Report (303d listed): Presumpscot River, Stroudwater River, Capisic Brook, Capisic Pond, Dole Brook, Fall Brook & Nason's Brook (including wetlands off Pinetree Industrial Parkway)					

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement knowingly made in the submitted information may be punishable as a criminal offense, in accordance with Maine General Statutes.

I certify that this permit registration is on complete and accurate forms as prescribed by the Department without alteration of the text.

I also certify under penalty of law that I have read and understand all requirements of the General Permit. I certify that all requirements for authorization under the general permit are met and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit for the municipality. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowingly making false statements.

Signature of chief elected official or principal executive officer:		Date:	7/23/13
---	---	-------	---------

This NOI registration form must be filed with the Department at the following address:
 Stormwater Coordinator
 Maine Department of Environmental Protection
 Bureau of Land & Water Quality
 17 State House Station
 Augusta ME 04333-0017

OFFICE USE ONLY	Ck.#	Date	Staff	Staff	After Photos
NOI #	FP		Acc. Date	Def. Date	

APPENDIX B

URBAN IMPAIRED STREAM WATERSHEDS

Portland has four identified Urban Impaired Stream watersheds as defined by Appendix B of the General Permit for Small Municipal Separate Storm Sewer Systems issued in July 2013. During this permit cycle, the City of Portland will continue to focus on the Capisic Brook watershed as its priority watershed. The City has developed a Compensation Fee Utilization Plan for each of its urban impaired watersheds which will allow it to implement structural stormwater retrofits as fees are collected. Currently, the City obligates all new development (beyond single family residential) to meet state stormwater general standards and urban impaired stream standards. These requirements provide additional stormwater controls in all Portland Urban Impaired Stream watersheds.



Portland's Drainage System and Clean Water

The City of Portland contains over 140 miles of stormwater drainage pipe, over 300 culverts, and over 8,000 manholes and catchbasins connecting the drainage system. This infrastructure provides drainage that protects properties from flooding and protects the functionality of our roads and parking areas. Adequately sized drainage systems are an important utility for new development and urban expansion. Just like any other infrastructure, drainage systems require periodic rehabilitation, repair, and maintenance to continue to function effectively.

Unfortunately, drainage systems also carry pollution during rain events and snow melt – this can include pet waste, oil, trash, and any other materials found on lawns, streets, and parking lots. This runoff is transported through the system, which in Portland discharges into Back Cove, Casco Bay, Capisic Brook, Fallbrook, and the Presumpscot River as examples.

These discharges are regulated under the Clean Water Act, and Portland is one of 30 communities in Maine that must comply with these regulations. The drainage system permit is called the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems and is known as the "MS4" permit. In general, the Maine MS4 permit obligates communities to maintain their drainage systems and reduce the potential for pollution to enter the drainage system and ultimately nearby water bodies. The City has been permitted in this fashion for the past 10 years, via 5-year Stormwater Management Plans.

The State's General Permit requires communities to do the following to reduce their impact on Maine's water:

1. Implement public education programs to help the community understand its role in keeping water clean.
2. Engage the public in decision-making throughout the program.
3. Map drainage system and find and fix leaky sanitary sewer lines, illegal connections or other sources of pollution that discharge into the drainage system.
4. Ensure that construction projects do not pollute runoff with sediments and debris.
5. Ensure that new development and redevelopment control and treat runoff before it leaves private property.
6. Engage in municipal roadway best practices such as cleaning drainage systems, sweeping streets, and ensuring municipal activities like vehicle washing and lawn maintenance do not contribute to pollution.

Portland is now entering into a new five year permit (2013-2018) and the engineering, public services, and planning staff are developing a new five year plan that will outline activities to meet this permit. The goal of this plan is to meet requirements without creating extensive new programs or undue budget burdens. In addition to previous requirements, the 2013 permit has created several new obligations, including a requirement to directly outreach to municipal staff and/or policy makers, new mapping requirements for septic systems and additional coordination with water utilities during hydrant flushing activities. The staff will be working with regional organizations such as the Cumberland County Soil and Water Conservation District, Portland Water District, and the Maine Municipal Association to leverage existing programs for maximum benefit whenever possible. But the permit requires a certain level of municipal expenditure that cannot be avoided, particularly in relation to staffing and equipment needed to maintain the drainage system and keep streets clean (e.g. street sweeping, catchbasin cleaning, and pipe lining).



Portland has consistently budgeted between \$1.4 - \$2M annually for operations, maintenance, administration, and contractor support for implementation and management of its stormwater drainage system and to maintain compliance with the MS4 permit. Public Services submits additional capital improvement requests for watershed restoration and renewal of drainage infrastructure, both of which are necessary for continued compliance and maintenance of drainage services for city residents.

The Public Services staff looks forward to continuing to work with you on implementation of this program in order to help rate payers and tax payers understand how we are working to keep our waters clean and ensure a well maintained drainage system.

Key Permit Planning Dates

November 20, 2013: Portland Transportation, Sustainability & Energy Action to endorse the 5-Year Plan

December 2, 2013 (or 16th): City Council Action to adopt the 5-Year Plan

December 20, 2013: Submit 5-Year Plan to Maine DEP

Key Permit Dates

July 1, 2013: Effective Date of General Permit

July 23, 2013: Portland Submitted Notice of Intent to Comply with General Permit

June 30, 2018: Expiration Date of General Permit

Every September 15: Submit Annual Report to Maine DEP



PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

MEMORANDUM

TO: Members of the Transportation, Sustainability and Energy Committee
David Marshall, Chair
Kevin Donoghue, Vice Chair
John Anton
Cheryl Leeman

FROM: Jeremiah Bartlett, Transportation Systems Engineer, DPS

CC: Mike Bobinsky, Kathi Earley, DPS; Alex Jaegerman, Bill Needelman, Planning
Mark Rees, City Manager, Sheila Hill-Christian, Deputy City Manager

DATE: November 15, 2013

RE: **Request to Endorse Libbytown Traffic Circulation and Streetscape Study
Transportation Master Plan**

Background

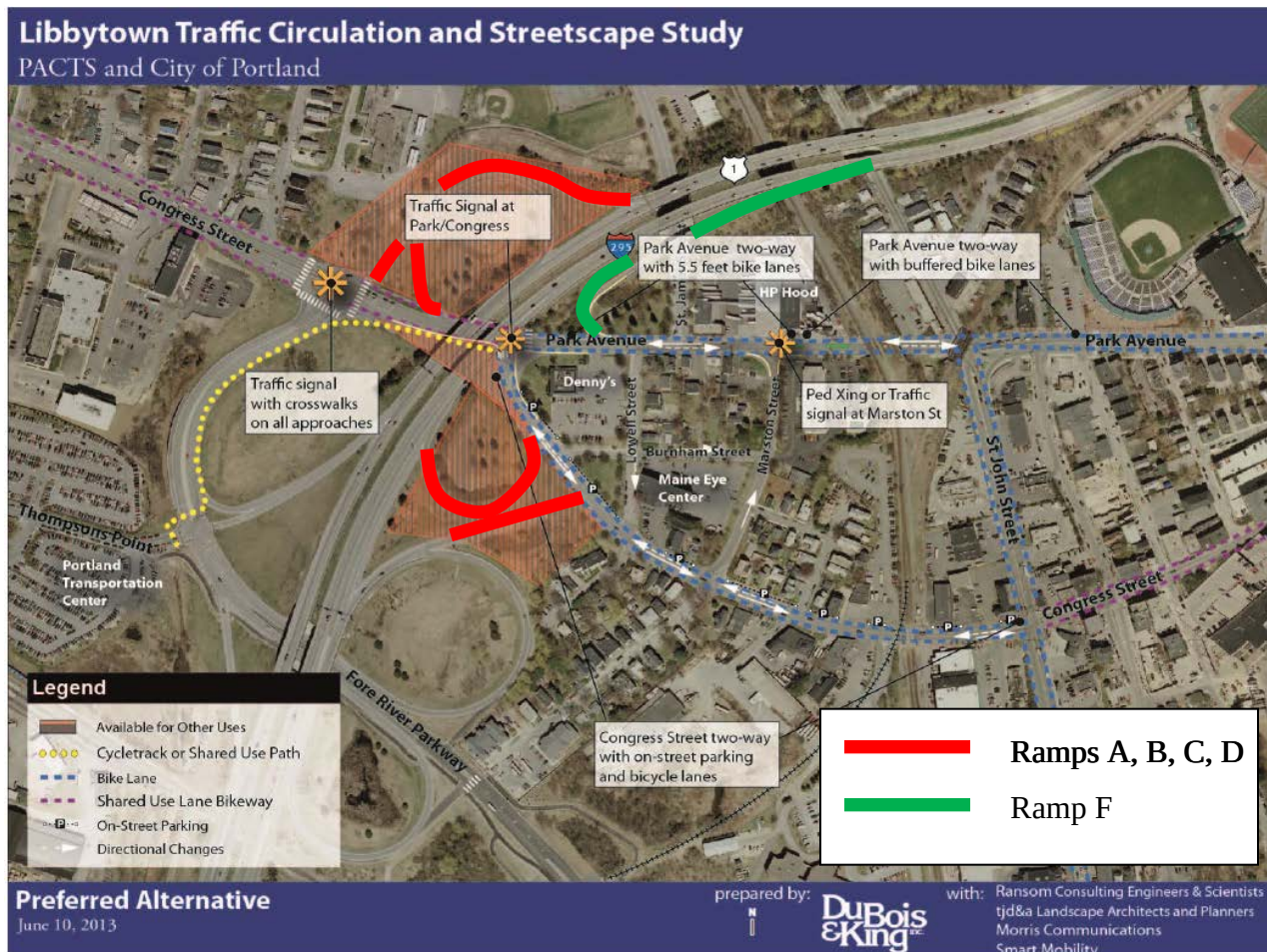
The City of Portland has been working closely with a consultant team and Public Advisory Committee (PAC) lead by Lucy Gibson of Dubois & King to examine the current circulation patterns for all modes of travel in the Libbytown area, primarily from Fore River Parkway along Park Avenue and Congress Street to St. John and Valley Streets. The study has been informed and is informing other ongoing efforts, including the EDA and TCSP-funded transportation improvements associated with the Thompson's Point project. The primary goals of the study were to improve safety and accessibility for all modes of travel, and in a manner that provides future opportunities for redevelopment in the long-term by reconnecting a neighborhood severed by I-295. These decisions were all based upon forecasts that assumed the full development of the Forefront at Thompson's Point.

The TS&E Committee was presented with an update on this project at the May 15th, 2013 meeting, which included discussion on four preliminary alternatives, which were developed in association with the PAC. These alternatives were also presented to the project's Public Advisory Committee, PACTS, Emergency Services, and MaineDOT, as well as public meetings. A final recommended alternative was brought back to the Committee for the June 19th meeting, which was endorsed by the Committee, although with questions as to impacts to local streets.

Recommended Alternative

- Make Park Avenue a two-way roadway from St. John Street to the I-295 overpass of Congress Street; this will include bicycle lanes and limited on-street parking adjacent to Hood. (Short term)

- Make Congress Street a two-way roadway from St. John Street to its intersection with Park Avenue; this will include bicycle lanes. On-street parking will be provided along the north side of the street. (Mid term)
- A new intersection of Congress Street and Park Avenue immediately east of the I-295 overpass. (Mid term)
- Improved pedestrian facilities at both ends of Marston Street crossing Congress Street and Park Avenue. (Mid term)
- Exploration of converting Marston Street to two-way operation. (Mid/long term)
- Improvements to Hood's street frontage to facilitate truck turning movements with a two-way Park Avenue. (Short/mid-term)
- Elimination of I-295 ramps A, B, C and D to and from Congress Street. (Longer term)
- Retention of I-295 ramp F from Park Avenue. (Current)
- Longer term possibilities include the potential of roundabouts at a few locations along Congress Street and redevelopment of land currently associated with the ramps.



It should be noted that many streetscape improvements, including lighting underneath the Pan Am overpass on Park Avenue, ADA improvements and sidewalk upgrades, will be accomplished in the next 12 to 18 months as part of the EDA work, and CDBG-funded streetscape work, including a pathway extension along Fore River Parkway from Thompson's Point Road to Congress Street.

Progress Since June 2013

After receiving endorsement of the preferred alternative, DuBois & King prepared a final draft report. A PAC meeting and a total of three meetings with MaineDOT were conducted. MaineDOT reviewed the draft report over the summer of 2013.

Feedback from MaineDOT and Next Steps

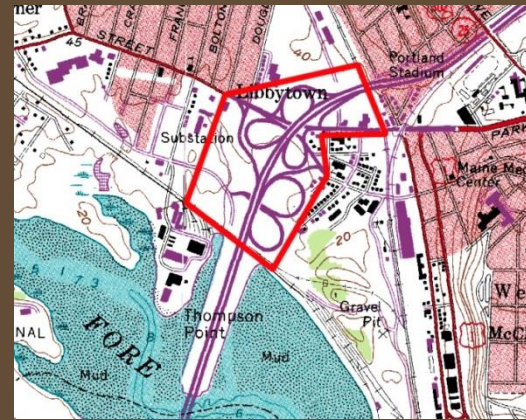
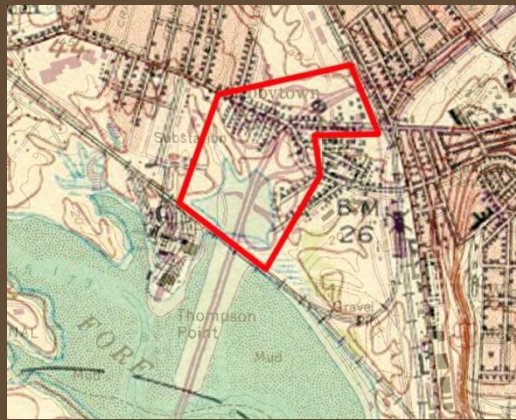
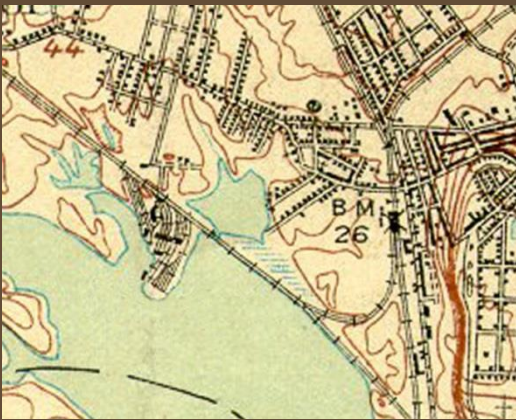
After three productive meetings with MaineDOT, on September 23rd, 2013 a Department review letter of the draft report was issued in which it was stated that the Department could not “envision a realistic scenario in which MaineDOT or FHWA would approval removal of the ramps in the study area, and [MaineDOT does] not support further analysis regarding their removal.” DuBois & King provided a response letter on October 16th, which was attached to the official response letter, signed by the City of Portland and PACTS on October 28th, 2013. This letter details our disagreement with the Department on several items. A copy of this correspondence, along with the final report, is enclosed with your packet.

While recommendations for removal of the ramps continues to be a goal of the City and PACTS, it is recognized that it could be some time before MaineDOT is willing to even consider such a task. As such, local street work is expected to be a top City priority, with ramp changes to take place as time allows. The final report reflects this, and the Department of Public Services will be asking for Capital Improvement Program funding to accomplish, at a minimum, the two-way conversion of Park Avenue and Congress Street.

We ask that the TS&E Committee consider the endorsement of the preferred alternative and the final report prepared by DuBois & King and forward it to the full City Council for adoption as a Transportation Master Plan.

Libbytown Traffic Circulation and Streetscape Study

Final Report



Prepared for:
The City of Portland
PACTS MPO

Prepared by:



with:

Ransom Consulting
Terence J DeWan & Associates
Morris Communications
Smart Mobility

DuBois & King Inc.
28 North Main Street
Randolph VT 05060

November, 2013

Table of Contents

1	Introduction	1
1.1	Goals of the Study	1
1.2	Study Area.....	2
1.3	Study Approach.....	3
2	Process and Participants	4
3	Existing Conditions.....	5
3.1	Ongoing Projects.....	5
3.2	Ramp Geometry	6
3.3	Vehicular Safety.....	7
3.4	Traffic Volumes.....	8
3.5	Bicycle and Pedestrian Conditions	11
3.6	Project Purpose and Need.....	12
4	Goals and Objectives	12
5	Regional Traffic Analysis.....	13
6	Alternatives.....	14
6.1	Rationale for Interchange Ramp Closures.....	17
6.2	Rationale for Two Way Street Conversion.....	18
6.3	Regional Model Results	18
6.4	Multimodal Analysis.....	19
6.5	Vehicular Traffic Design Considerations	20
7	Recommendations: The Preferred Alternative	21
7.1	Park Avenue: Two-Way with Bicycle Lanes.....	24
7.2	Congress Street: Two-Way with Bicycle Lanes and On-Street Parking.....	25
7.3	Saint John Street: Reconfiguration and Bicycle Lanes.....	26
7.4	Outer Congress Street.....	27
7.5	Intersection Improvements.....	28
7.5.1	Park Avenue/St John	28
7.5.2	Park Avenue/Marston.....	29
7.5.3	Congress Street/St. John.....	30
7.5.4	Congress Street-Marston	31
7.5.5	Congress Street/Park Avenue.....	32
7.5.6	Congress Street/Fore River Parkway	33
7.5.7	Fore River Parkway/Thompson's Point.....	34

7.6	Streetscape Improvements.....	34
7.7	Implementation Strategy.....	40
7.8	Cost estimate.....	41
7.8.1	Phase I: Conversion of Park Avenue to Two-Way.....	41
7.8.2	Phase II: Restriping of Outer Congress Street.....	42
7.8.3	Phase III: Ramp Closures.....	43
7.8.4	Phase IV: Conversion of Congress Street to two-way.....	43
7.8.5	Phase IV: Construction of Modern Roundabouts on Fore River Parkway intersections	43
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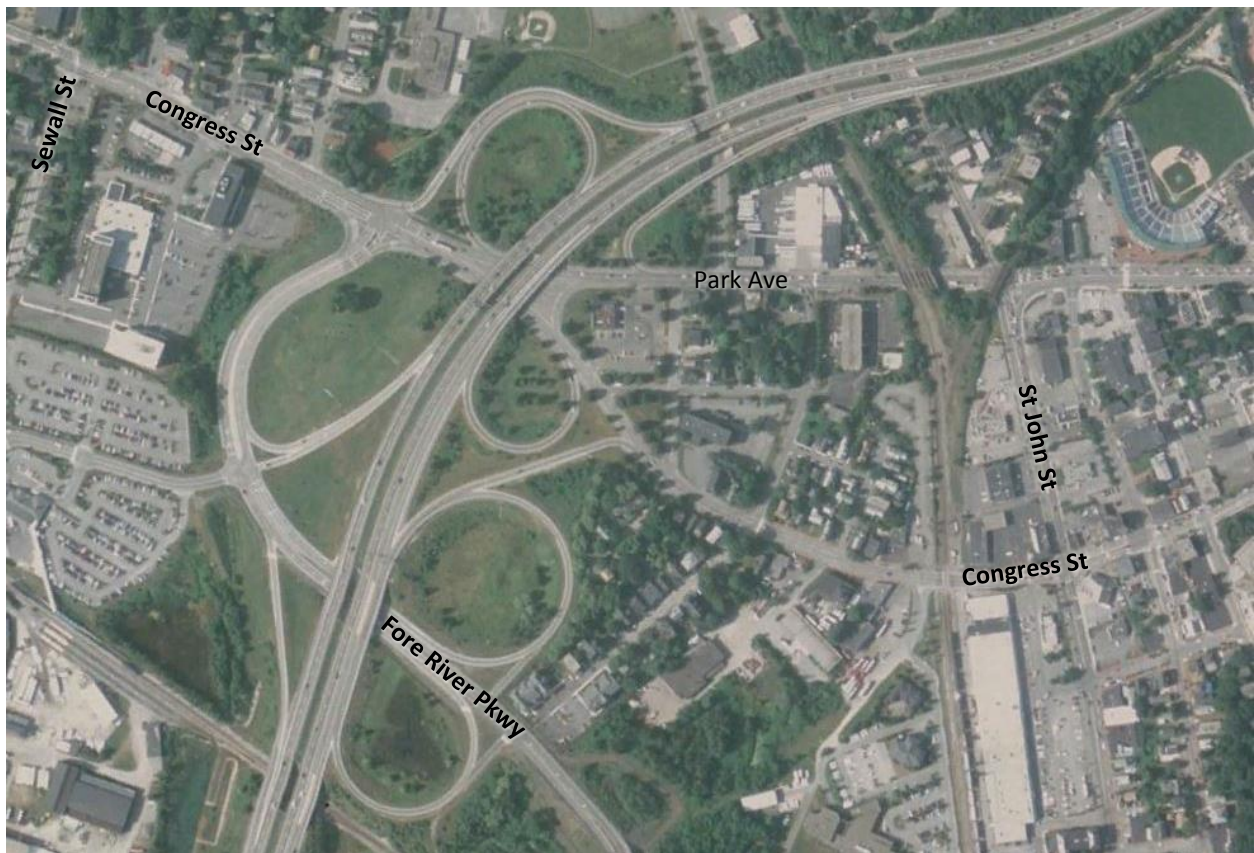
- Attachment 1: Public Participation and Project Advisory Committee Meeting Notes
- Attachment 2: Existing Conditions
- Attachment 3: Multimodal Level of Service
- Attachment 4: Traffic Report
- Attachment 5: Building on Connecting Libbytown
- Attachment 6: Cost Estimate

Tables and Figures

Table 2.1: Libbytown Project Advisory Committee Members	4
Table 5.1: Increased Travel Time from diverting to the Fore River Park Avenue interchange	13
Table 5.2: Regional Traffic Model results for Ramp Closures and Two-way Conversions	14
Table 6.1: Alternatives Summary	15
Table 6.2: Regional Model Results for Alternatives	18
Table 6.3: Pedestrian and Bicycle Level of Service for Libbytown Alternatives	19
Table 6.4: 2015 PM Peak Vehicular Level of Service for Libbytown Alternatives	20
Table 7.1: Cost Summary	41
Figure 1.1: Project Study Area	2
Figure 3.1: Planned Transportation Projects in the Libbytown Area	5
Figure 3.2: Aerial Views of Libbytown Study Area Ramps- 1997 (left) and 2008 (right)	6
Figure 3.3: Crash Frequency in the Libbytown Study Area (MaineDOT)	7
Figure 3.4: MaineDOT High Crash Locations in the Libbytown Area (as of August, 2013)	8
Figure 3.5: 2012 A.M. Peak hour turning movement volumes	9
Figure 3.6: 2012 P.M. Peak hour turning movement volumes	10
Figure 3.7: Traffic Volume History at Congress Street/St John and Park Avenue/St John	11
Figure 6.1: Alternative 1a	15
Figure 6.2: Alternative 1b	16
Figure 6.3: Alternative 2a	16
Figure 6.4: Alternative 2b	17
Figure 6.5: Bicycle Facility Types	19
Figure 7.1: Recommended Alternative	22
Figure 7.2: Regional Model Results for the Preferred Alternative (Percent Change from Base Volume) ...	23
Figure 7.3: Park Avenue Cross Section – Existing and Proposed	24
Figure 7.4: Inner Congress Street between Marston and Lowell Streets	25
Figure 7.5: Proposed Reconfiguration of St. John Street	26
Figure 7.6: Outer Congress Street Cross Section	27
Figure 7.7: Improvements to HP Hood Entrance	42

Executive Summary

The Portland Area Comprehensive Transportation System (PACTS) and the City of Portland recognize the need to address the numerous safety, transportation and community challenges and opportunities related to the poorly functioning I-295 Congress Street interchange (exit 5), and the surrounding street network in the eastern Libbytown neighborhood. The *Libbytown Traffic Circulation and Streetscape Study* was initiated to address these concerns in a comprehensive and holistic manner, considering all modes of transportation and the economic vitality of this important part of the City. The primary area of focus for this study is shown below.



Among the specific issues that have been identified:

- Numerous motor vehicle high crash locations, as reported by Maine Department of Transportation (MaineDOT).

- A challenging environment for pedestrians, including inadequate pedestrian crossings, infrastructure gaps in the pedestrian network, and high speeds in the vicinity of the I-295 ramps.
- A challenging environment for bicyclists, including lack of bicycle lanes or paths, high speeds, and one-way streets requiring inefficient travel routes.
- A challenging environment for transit users due to the one-way street network that prevent important transit stops and transfer locations to be located on opposite sides of the street.
- A history of disinvestment and underutilization of land in the study area, despite its highly accessible and important location in the City.

An important consideration is the history of the interchange 5 development. The aerial photographs below show the interchange with Congress Street as originally constructed on the left, and after the new Fore River Parkway interchange was completed on the right. It is typically very undesirable to allow essentially two interchanges in such close proximity, as it introduces additional conflict point on a high speed highway. It is also evident that the older interchange loop ramps are much smaller than those on the Fore River Parkway, which meet modern engineering standards. These smaller ramps on the old Congress Street interchange do not provide for adequate acceleration for traffic entering the freeway lanes, nor a good interface with the local street network on Park Avenue and Congress Street.



Study Process

The City of Portland appointed a project advisory committee of neighborhood residents, businesses and other stakeholders, and hired a team of consultants to explore alternatives and make recommendations for addressing these needs. From the outset, the intent was to develop a plan for improvements that would benefit all modes of transportation, and result in a street network that would be more conducive to investment and attractive for appropriate development. The following summarizes the study process, conducted from July 2012 through July 2013.

- 1) Review existing conditions in the study area.
- 2) Define goals for the area.
- 3) Explore alternatives, including reconfiguration and removal of the redundant I-295 exit 5 ramps and converting Park Avenue and Congress Street to two-way operation. The alternatives were developed and tested as follows:
 - a. Potential traffic to be generated by full build-out of the development proposal at the time for Thompson's Point was included in all analysis.
 - b. The regional travel demand model was used to determine potential changes or increases in travel time.
 - c. Multimodal level of service analysis was conducted for each alternative to allow understanding of the trade-offs between vehicular traffic conditions and those of other modes.
- 4) Develop recommendations on design and implementation strategy for a preferred alternative.

The project advisory committee met four times, to review each of the above milestones. At several points during the study process, meetings were held with key stakeholders, including MaineDOT, FHWA, and H.P. Hood, which operates a bottling plant in the study area. All businesses in and near the study area were invited to a meeting to review the alternatives and get input.

Goals

The following are among the primary goals that were developed with input from the Project Advisory Committee and other stakeholders:

- Provide safe, comfortable, and convenient transportation for all modes between the Portland Transportation Center and the St. John/Congress Street/Park Avenue area.
- Address the delays resulting from more frequent trains at the Congress Street crossing, particularly for emergency response vehicles.
- Reduce the impact of high speed interstate traffic entering the Libbytown and St John-Valley neighborhoods by reinforcing transitions to neighborhood streets.
- Support local businesses and the economic vitality of the study area through street design changes that provide greater visibility and accessibility for all modes of transportation.

Findings

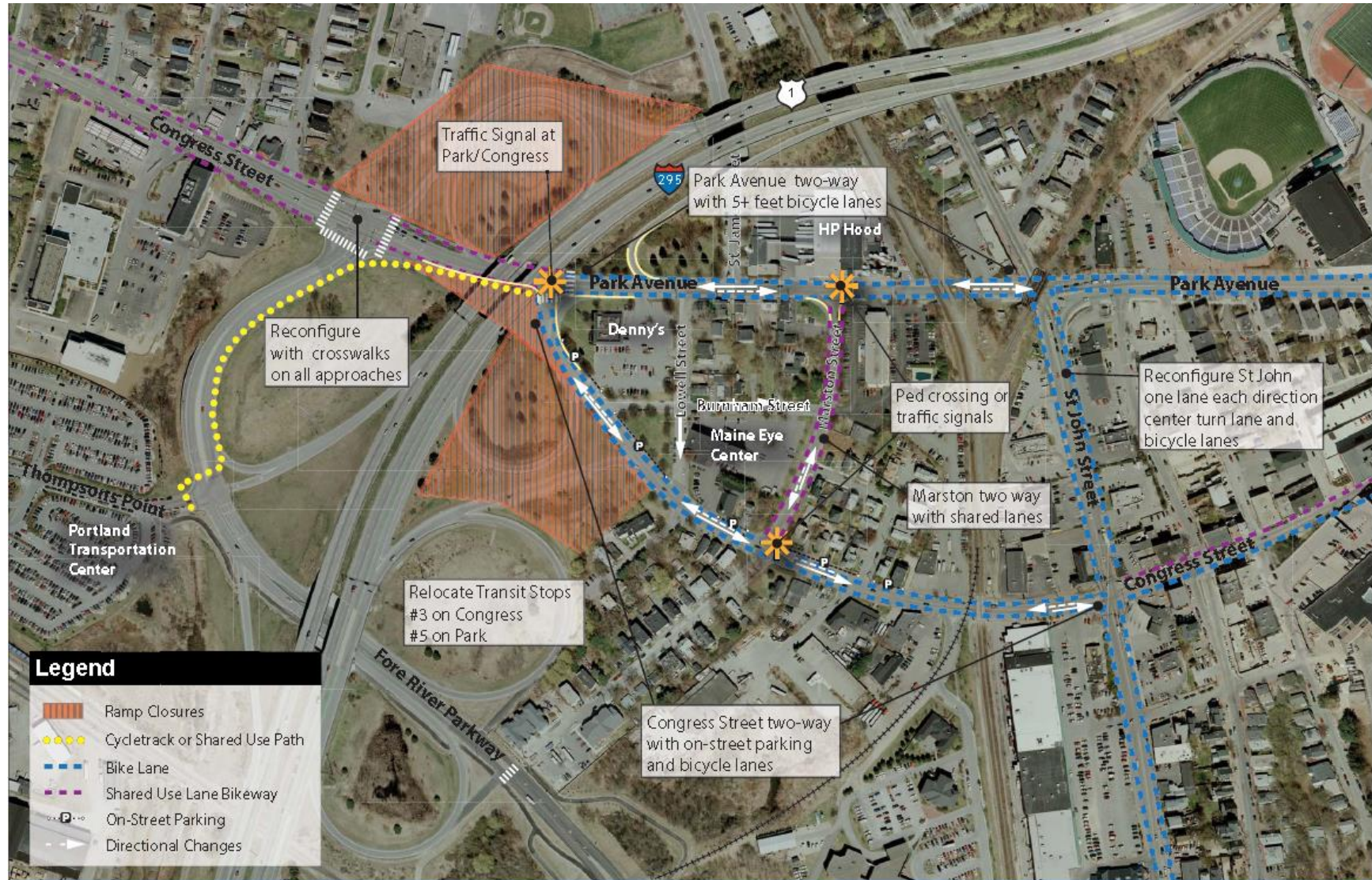
The Project Advisory Committee and team considered a wide range of alternatives, including ramp closures and two-way conversions, to achieve the goals of the project. Modeling using the PACTS regional travel demand model was used to assess the traffic redistribution. The key findings of the analysis are:

- Closing four of the redundant exit 5 ramps will have great benefit to safety in the study area for all modes of transportation with very limited effect on the regional transportation network.
- Converting Congress Street and Park Avenue to two-way operation will significantly benefit accessibility to the area and bicycle travel and reduce trip lengths.
- The area's road network will be able to absorb the redistribution of traffic that would result from the closure of the redundant interstate ramps and still maintain acceptable conditions for traffic with some improvements of modest cost.
- Detailed traffic operations analyses were conducted to determine changes to intersection design and operations to accommodate the redistribution of traffic with the ramp closures for both near term (2015) and long term (2035) scenarios.
- There will be substantial improvements to the safety, appearance, and functionality of the study area street network and will be of great benefit to pedestrians, bicyclists and local businesses.
- Most high crash locations in the study area will have conflicts eliminated, reduced volumes or lower speeds (see below). High crash segments on Park Avenue east of St. John, and on St. John south of Congress Street are currently the subjects of construction projects that should reduce crash frequencies.
- Some of the ramp closures will result in a modest increase in traffic volumes at the Forest Avenue interchange, which has high crash rates and several high crash locations. There are ongoing efforts to address safety at the Forest Avenue interchange, and it is recommended that improvements be implemented before or concurrently with the permanent exit 5 ramp closures.

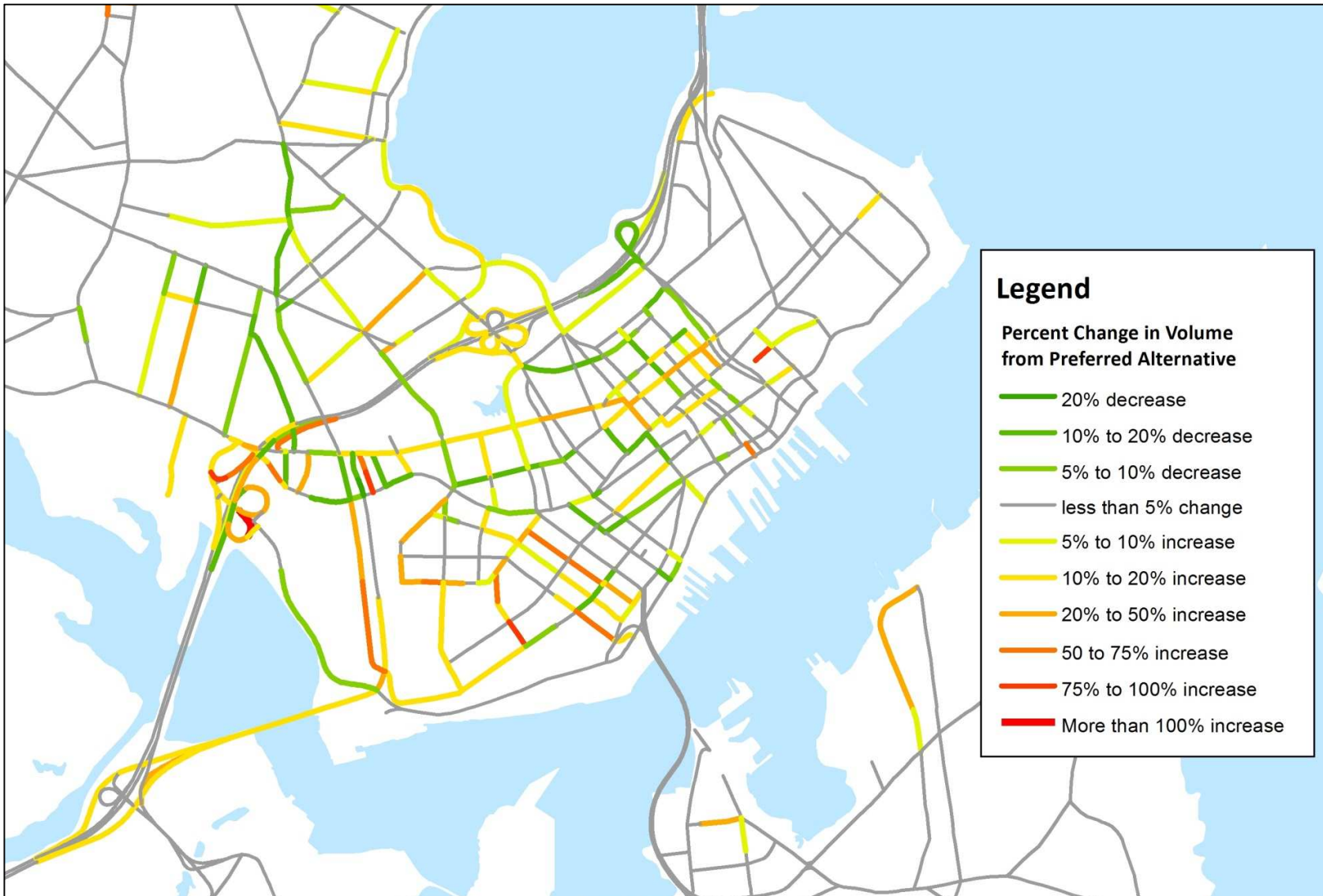
Recommendations

This study's recommendations, shown in the figure on the next page, were developed after a careful process of evaluation, testing and analysis for safety and quality for all modes of transportation. The closure of the interstate ramps was tested with the regional travel demand model, and found to have minimal effects in regional travel times. Tradeoffs of lower, but still acceptable, automobile levels of service are offset by dramatic improvements in the safety and quality of the bicycle and pedestrian network.

Recommendations



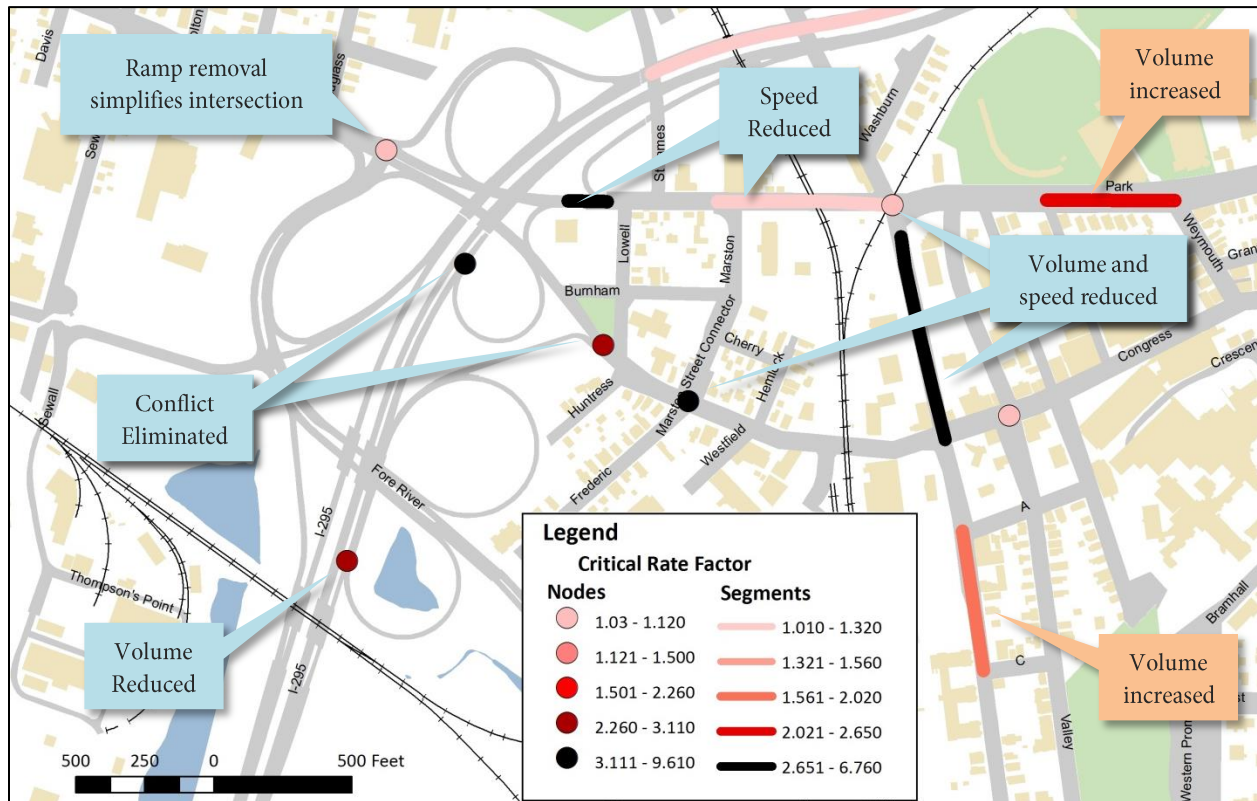
Modeled Traffic Changes from Recommended Plan



Safety

The recommendations in this report have been particularly focused on improving safety in the study area. The current street network has numerous motor vehicle high crash locations, which have a significantly higher crash rate than average. The figure below shows the high crash locations in the study area, and also indicates the crash rate by percentile. The Preferred Alternative will address the great majority of these locations by reducing the volumes, reducing speeds, removing conflicts, or simplifying intersections.

Effect of Recommendations on Motor Vehicle High Crash Locations in the Study Area



There are several safety-related issues that require further consideration:

- The preferred alternative will increase traffic volumes on some legs of the Forest Avenue/I-295 interchange. This interchange has well-documented safety issues, and each ramp terminal is a high crash location. The City of Portland has been coordinating with the MaineDOT to address these issues, and several reconfiguration options are under discussion. Implementation of improvements at Forest Avenue should be underway before the Libbytown area ramp closures are implemented.
- Park Avenue has a high crash location east of St. John that will see increased traffic. The City of Portland is currently in the process of reconfiguration of this segment to have three lanes and a center left turn lane, which should significantly reduce speeds and the crash rate in this location.

- St. John Street has a high crash location south of Congress Street that will also see an increase in traffic volume. The City of Portland is undertaking streetscape improvements in this area which should reduce crash rates.

Implementation Plan

The improvements described in this report can be implemented incrementally over many years, as funding and local priorities indicate. The following is suggested as an initial phasing order:

- Conversion of Park Avenue to 2-way operation (has great benefits for emergency response to Maine Medical Center) and accompanying streetscape enhancements.
- Convert Congress Street to 2-way operation with streetscape enhancements and temporary changes to northbound off-ramp terminal to reduce speeds and clarify yield condition.
- Coordination with MaineDOT to conduct temporary ramp closures and traffic monitoring to determine any additional impacts or concerns with ramp closures.
- Closure of the I-295 northbound off- and on- ramps at Congress Street (ramps A and C).
- Closure of the I-295 southbound off- and on-ramp to Congress Street (ramps B and D).

The information generated with the PACTS regional travel demand model on the effects of the ramp closures can be verified by experimental, temporary closures with traffic volume monitoring before closures are made permanent.

Construction costs for these improvements have been estimated as follows at a conceptual level, and are summarized in the table below. Details for each phase of implementation are provided later in this report.

Item	Phase	Component	Cost
1	Phase I: Conversion of Park Avenue to Two-way		\$414,000
2	Phase II: Restripe Outer Congress Street		\$111,000
3	Phase III: Conversion of Congress Street to Two-Way		\$1,132,000
4	Phase IV: Ramp Closures	Ramp A	\$57,000
5		Ramps B & D	\$230,000
6		Ramp C	\$35,000
7	Ongoing: Streetscape Improvements	Park Avenue	\$399,000
8		Congress Street	\$1,832,000
		Total:	\$4,210,000

Additional improvements may be required to accommodate possible future traffic growth, including roundabouts at the intersections of Fore River Parkway/Congress Street and Fore River Parkway/ Thompson's Point/I-295 SB Ramp. Costs for these are estimated to be on the order of \$6,000,000.

1 Introduction

Libbytown is at a crossroads of several important corridors: I-295, the PanAm railroad, Congress Street, Park Avenue and the Fore River Parkway. The Libbytown neighborhood has been fragmented by these facilities, which make travel through the area on foot or bicycle challenging. The one-way operations of Congress Street and Park Avenue between St. John Street and Park Avenue further contribute to difficult travel by bicyclists and transit services.

“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.

1.1 Goals of the Study

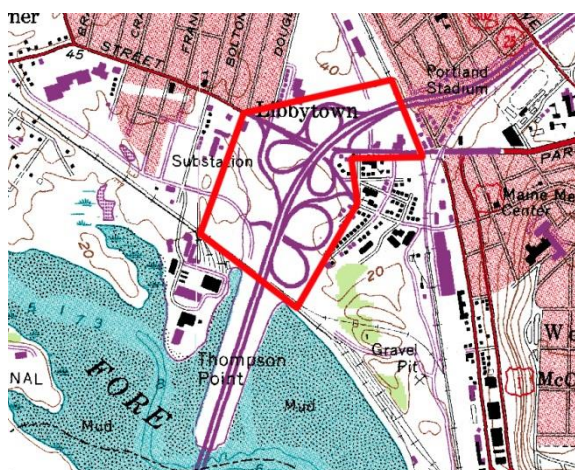
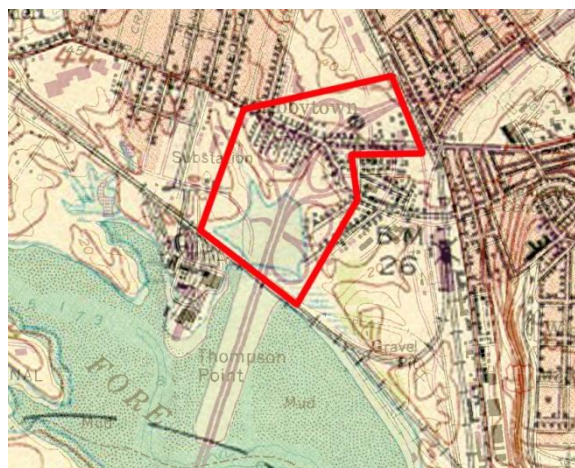
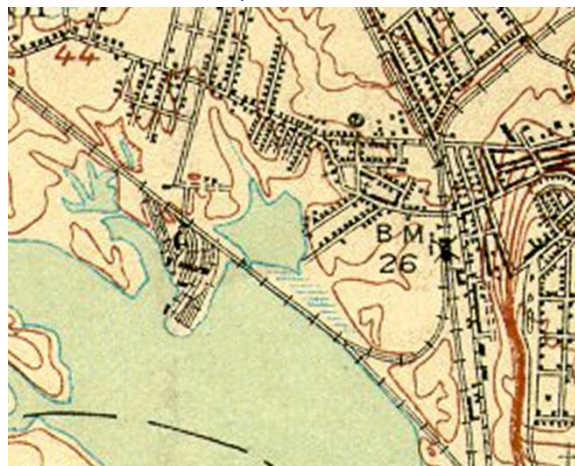
“The goal of the study is to comprehensively assess and make recommendations regarding the multi-modal transportation network, circulation pattern and supporting streetscape within the eastern portion of the Libbytown Neighborhood.”

Libbytown Streetscape and Traffic Circulation Study RFP-2012

The following are additional considerations for this study.

- Build on the work in *Connecting Libbytown*,

Libbytown in Transition



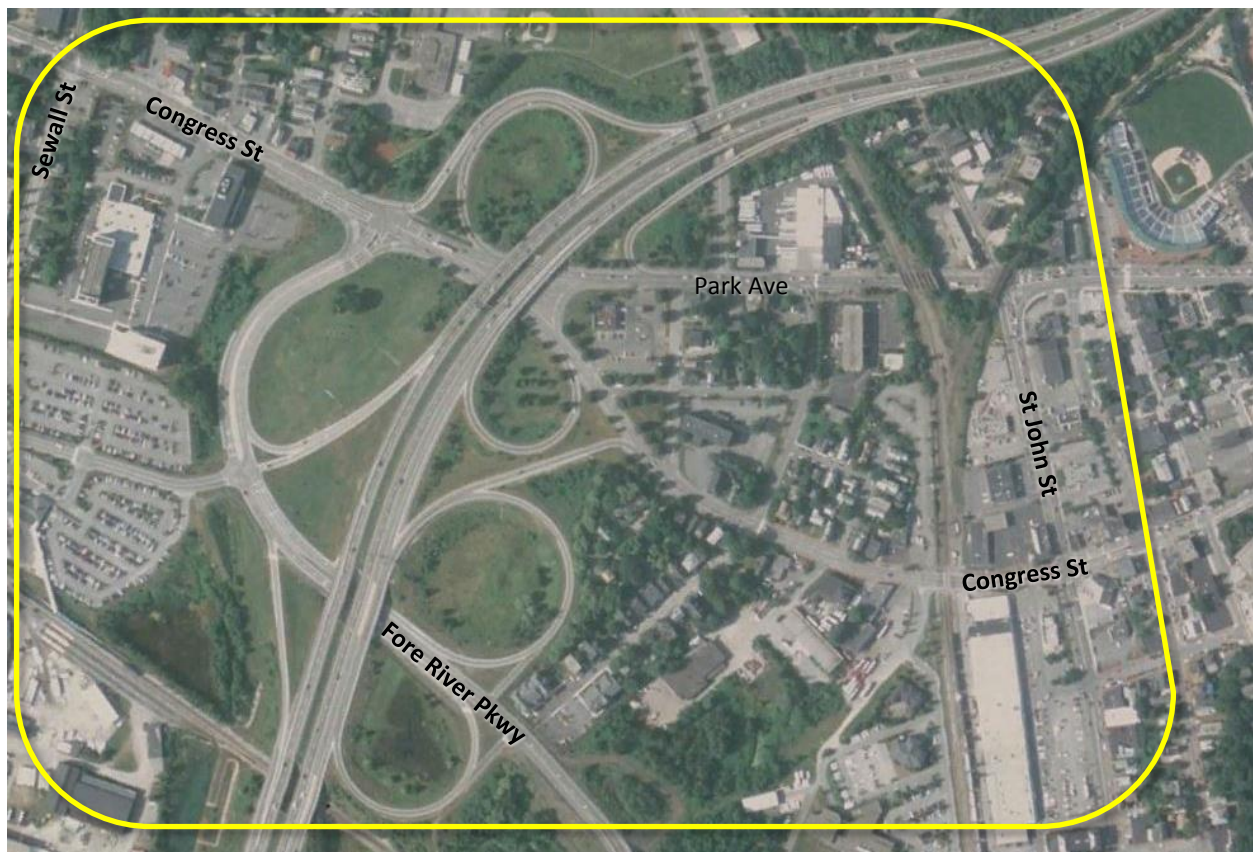
to improve neighborhood connectivity, safety and function for all modes and users.

- 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 support economic development and growth that is compatible with the community's vision and viable

1.2 Study Area

The primary study area for the traffic circulation component is shown in Figure 1.1, which is the area of focus for the traffic design recommendations. However, the entire Portland region is considered in the transportation modeling. The community and stakeholder involvement also included numerous residents, businesses and institutions from both inside and outside the study area below who may be affected by the proposed changes.

Figure 1.1: Project Study Area



1.3 Study Approach

This study utilizes current transportation planning practices that encourage more choices and options to meet the demand for travel, and takes into account recent trends in travel behavior. The following approaches have guided this effort.

- **Plan for success, not failure.** The City has goals of increasing use of non-auto transportation and reducing the rates of driving per capita. Transportation projects should not presume failure to achieve these goals, but rather should seek to advance them.
- **Plan for all modes and all users of the street.** A *Complete Streets* approach considers all modes of travel and all users of the street network. Multimodal level-of-service analysis is used to evaluate conditions across all applicable modes to compare alternative design scenarios.
- **Context Sensitive Solutions.** Neighborhoods are profoundly affected by their surrounding street network and its roadway and intersection design. The recommendations in this report should seek to create the environment envisioned by the City of Portland and neighborhood residents through appropriate investments in the public right-of-way.
- **Consider the risks and benefits of changes.** There are risks of maintaining status quo, which include high frequency of crashes, a poor economic climate resulting from limited accessibility, and challenging conditions for many modes of transportation. There are also risks inherent in any changes in the transportation system, but appropriate use of transportation modeling techniques can inform us about these risks and identify possible solutions. The risks and rewards of change should be weighed against those of doing nothing.
- **Public and stakeholder involvement** is essential for effective transportation planning and design. Public involvement can help inform the planners and designers about local conditions, and contribute valid ideas for design solutions. Stakeholder involvement also provides valuable information, and their support will be necessary for implementation. Those who will be highly affected by the project outcomes should have a prominent role in the planning process.
- **Consider observed trends in travel behavior.** Traffic volumes and auto ownership in Portland have been declining, even as population and economic activity increases. As we plan for the future, high rates of vehicular traffic growth are both unlikely and undesirable. Further, the City of Portland has aspirations to increase the share of non-auto modes and to reduce the need for vehicular travel by implementing more compact, mixed use types of development.

2 Process and Participants

The project was guided by a project management team including staff from the City of Portland Departments of Public Services and Planning, the PACTS MPO, and the consultant team led by DuBois & King with Ransom Consulting Engineers, Terence DeWan & Associates, Morris Communications, and Smart Mobility.

A Project Advisory Committee (PAC) was established by the Portland City Council, and included the following members and organizations. Minutes of the PAC meetings can be found in Attachment 1.

Table 2.1: Libbytown Project Advisory Committee Members

Name	Constituency
Maria Macdougall	Libbytown Resident
Harlan Baker	Libbytown Resident
Jackie Thompson	Libbytown Resident
Ed Suslovic	Libbytown Resident/City Councilor
Zachary Barowitz	Libbytown Resident/Business owner
Fred Dillon	Libbytown Resident/Former LNA
Skip Woods	HP Hood
Ruth Mlotek	IRIS Network
Richard Buchanan	Logan Place
Mary Didonato	Maine Eye Center
Dan Dougherty	Maine Medical Center
Karen Perry	Norway Savings Bank
Christian MilNeil	Portland Bicycle-Pedestrian Committee
Jaime Parker	Portland Trails
Channing Capuchino	SJVNA Representative

There were two public meetings held for the project: an alternatives presentation and workshop on May 8, 2013, and a final presentation on June 10, 2013. Meeting notes and handouts are also included in Attachment 1. In addition, all local businesses and institutions were invited to a separate meeting on March 22, 2013 to allow for an opportunity to learn about the project, and provide the team with input and concerns.

Additional meetings were held with officials from the Maine Department of Transportation (MaineDOT), Federal Highway Administration (FHWA), the Portland Public Safety Departments and H.P Hood to obtain further input and guidance.

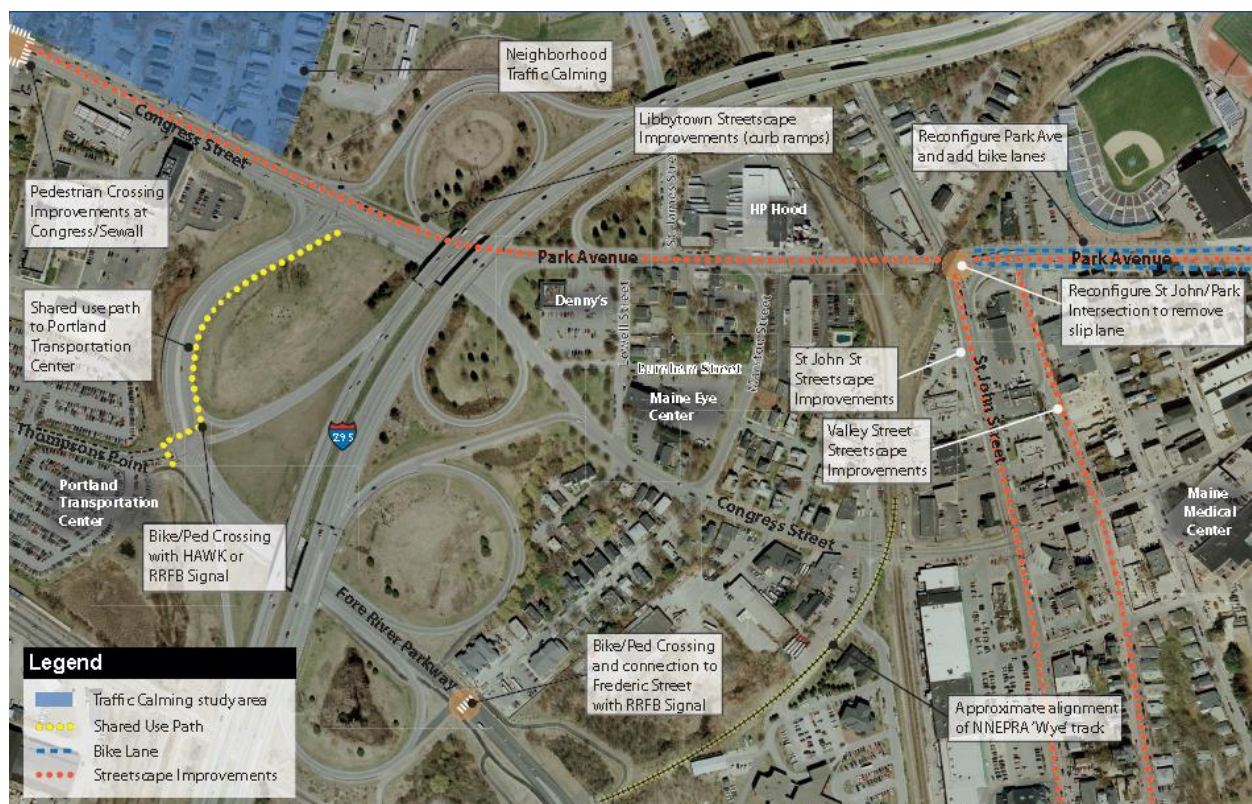
3 Existing Conditions

An inventory and analysis of existing conditions for all modes of transportation was conducted at the outset of this study, and can be found in Attachment 2.

3.1 Ongoing Projects

As transportation and streetscape needs are considered for Libbytown, it is important to recognize a large number of ongoing initiatives and projects that are currently underway by the City of Portland and MaineDOT, which are shown on Figure 3.1.

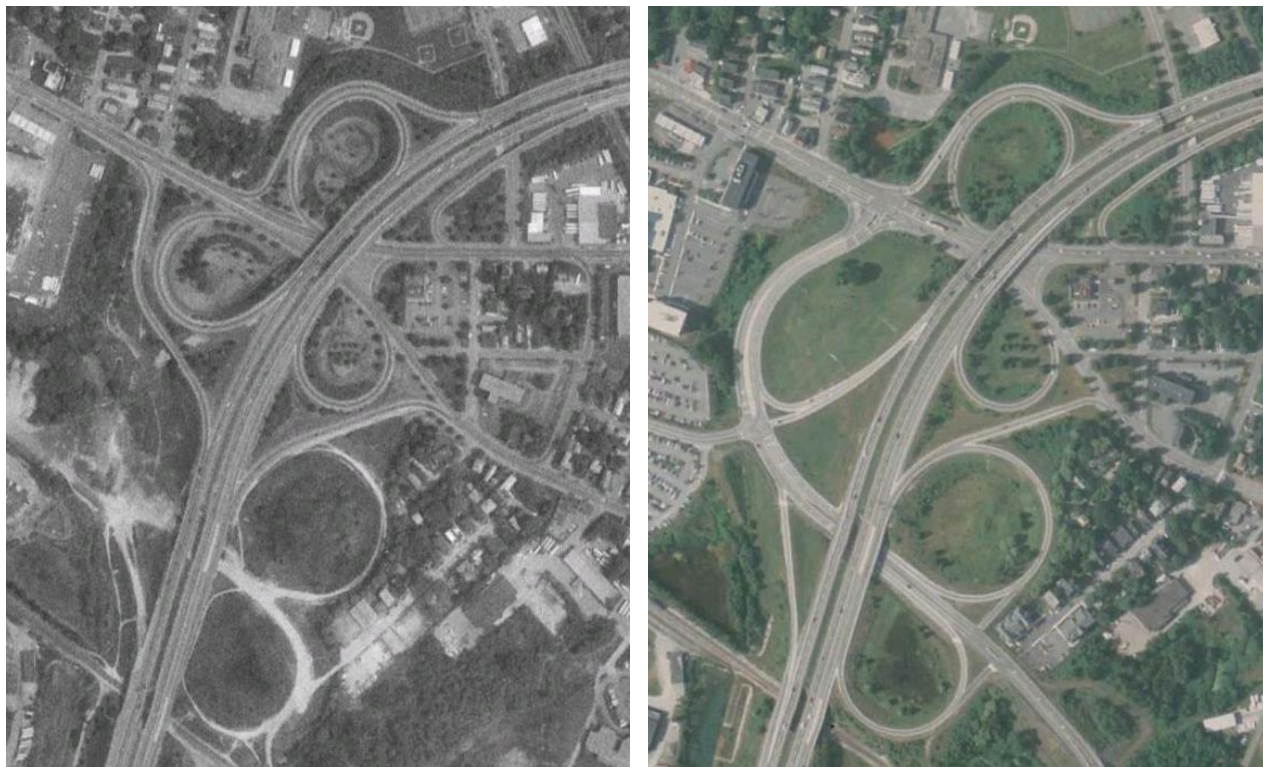
Figure 3.1: Planned Transportation Projects in the Libbytown Area



3.2 Ramp Geometry

The I-295 Exit 5 interchange is very complex, reflecting a history of changes and adaptations. When the interstate was first constructed, there was a three-quarters cloverleaf interchange with Congress Street and Park Avenue that provided uncontrolled, high speed access to the city street network, shown below on the left. By around 2000, a new interchange was constructed to serve the Thompson's Point area and the future Fore River Parkway. These newer ramps have much larger radii and provide adequate length for acceleration and deceleration. The original Congress Street interchange ramps, despite their antiquated geometry, were retained even after the Thompson's Point/Fore River Parkway interchange was completed. Typically such close spacing of interstate ramps is not desirable and does not meet modern design guidelines. The current safety record in the area is evidence of poor interchange design.

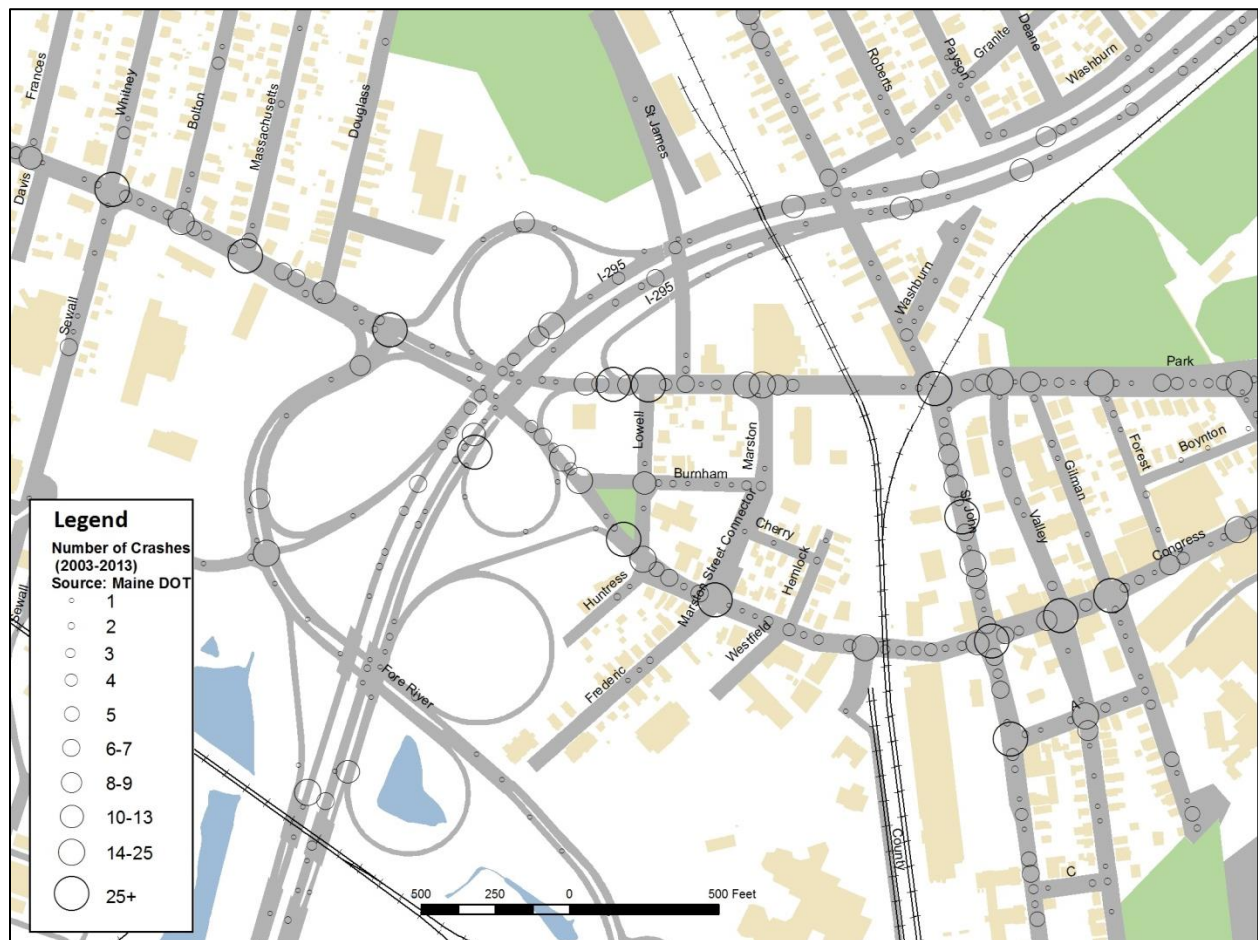
Figure 3.2: Aerial Views of Libbytown Study Area Ramps- 1997 (left) and 2008 (right)



3.3 Vehicular Safety

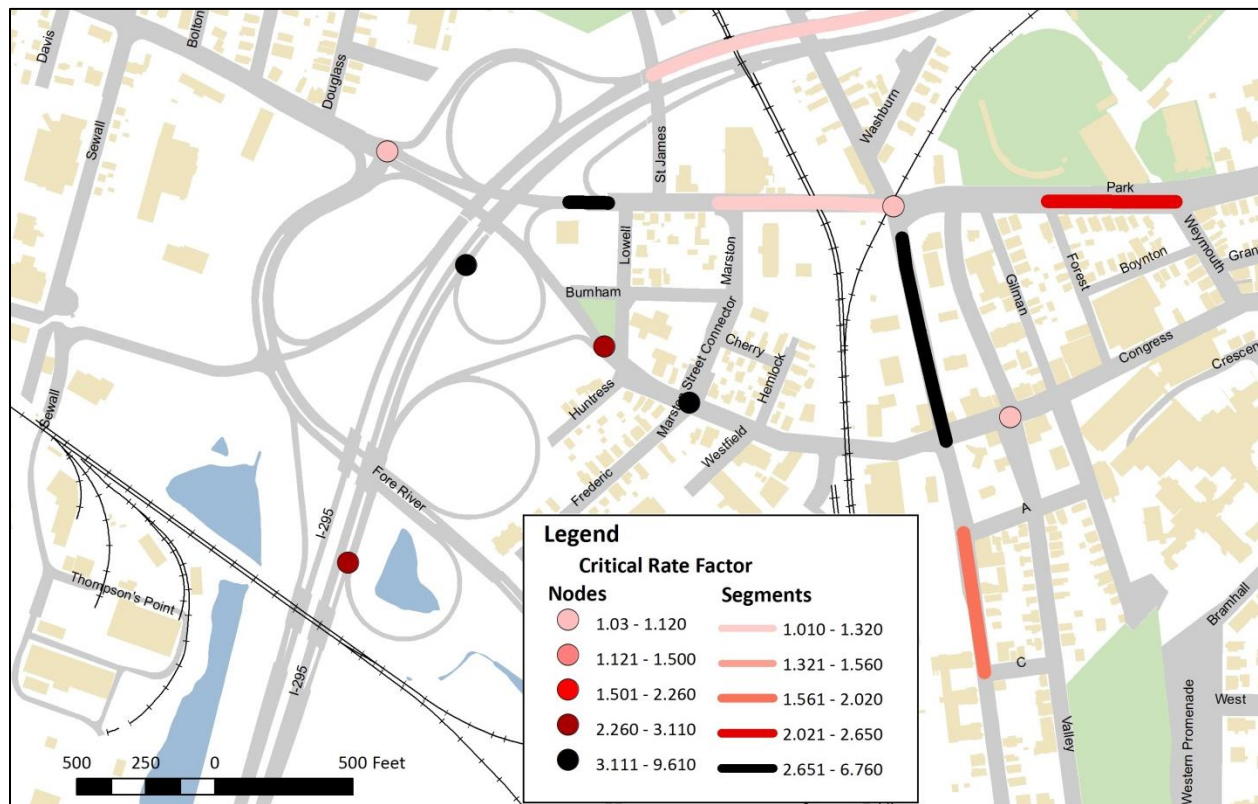
The study area has many safety deficiencies as indicated by a review of vehicular crash data. Figure 3.3 shows the crash frequency in the study area, which provides insights on the safety of the study area street network. More information on safety of the project area is provided in Attachment 2.

Figure 3.3: Crash Frequency in the Libbys Town Study Area (MaineDOT)



The Maine Department of Transportation (MaineDOT) indicates that there are numerous “high crash locations” in the study area, shown in Figure 3.4. The Crash Rate Factor provides the rate of crashes relative to the traffic volumes using that intersection or segment. Ramps A, C and D all have high crash locations at their termini. Currently, the City of Portland and MaineDOT are undertaking several improvement projects that will address several of the locations with high crash frequencies.

Figure 3.4: MaineDOT High Crash Locations in the Libbys Town Area (as of August, 2013)



3.4 Traffic Volumes

Recent traffic counts in the study area were adjusted to the year 2012. The resulting a.m. and p.m. peak hour volumes are shown in Figure 3.5 and Figure 3.6.

More information on traffic volumes for the study area included in Attachment 2.

Figure 3.5: 2012 A.M. Peak hour turning movement volumes

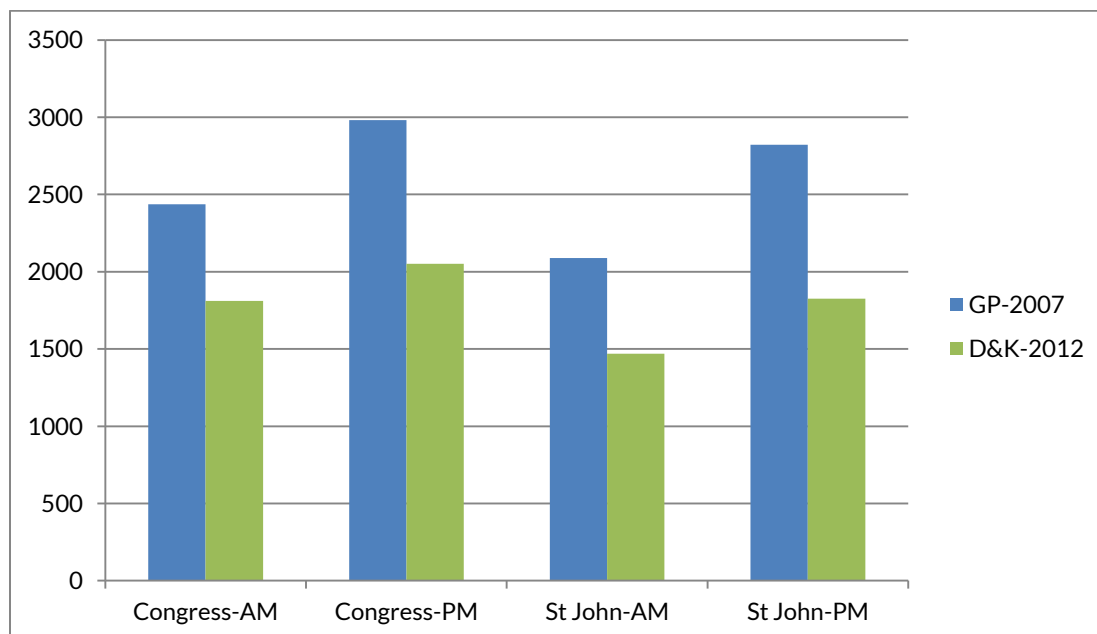


Figure 3.6: 2012 P.M. Peak hour turning movement volumes



Traffic circulation patterns in the study area have changed considerably since 2008, when the Fore River Parkway (FRP) was completed. This is particularly notable on St. John Street, which has lower volumes on each of its legs of the intersection now than it did in 2007. Figure 3.7 shows the p.m. peak hour volumes at Park Avenue/St. John and Congress Street/St. John intersections before and after the completion of FRP in 2008. Other recent counts by MaineDOT were reviewed and verify this change, which provides an opportunity to reconsider the intersections' design and layout to be more responsive to current users.

Figure 3.7: Traffic Volume History at Congress Street/St John and Park Avenue/St John



3.5 Bicycle and Pedestrian Conditions

Travel through Libbytown on foot or bicycle can be challenging and intimidating. High vehicular traffic speeds are prevalent, as there are no stops or yields at the termini of several of the I-295 ramps to reinforce a transition to a lower speed environment. There are few crosswalks on Park Avenue or Congress Street, and often vehicles do not yield to pedestrians for fear of being rear-ended by approaching high speed traffic. The one-way, two-lane configuration puts pedestrians at risk once there is a car yielding to them, as the stopped vehicle blocks visibility from oncoming traffic in the next lane. There are also numerous deficiencies in lighting, sidewalk condition and curb ramps in the study area, many of which are being addressed in current City projects.

Bicycle travel is particularly challenging with the one-way street network, which requires very circuitous routes to ride safely through the area. The high speeds near the interchange make bicyclists feel highly exposed and at risk while riding across Libbytown.

Attachment 2 provides a detailed assessment of the infrastructure and conditions for bicyclists and pedestrians.

3.6 Project Purpose and Need

The following statement of Purpose and Need has been developed in consideration of the existing conditions and community and stakeholder input:

This purpose is the transformation of Libbytown into a cohesive and livable neighborhood by:

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

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 provide a high level of accessibility for local businesses.

The primary issue facing the study area is modernizing the safety and function of the streets and the circulation pattern to meet important regional traffic needs while simultaneously designing the transportation infrastructure and streetscapes of the area to serve the neighborhood.

Libbytown Traffic Circulation and Streetscape Study RFP

4 Goals and Objectives

Goals and objectives were established after a review of the existing conditions and through discussion with the PAC, City staff and other stakeholders. The goals for this study are:

- Provide safe, comfortable, and convenient transportation for all modes between the Portland Transportation Center and the St. John/Congress Street/Park Avenue area.
- Address the increasingly frequent railroad crossings of Congress Street, particularly for emergency response vehicles.
- Reduce the impact of high speed interstate traffic entering the Libbytown and St John-Valley neighborhoods by reinforcing transitions to neighborhood streets.
- Support local businesses and the economic vitality of the study area through street design changes that provide greater visibility and accessibility for all modes of transportation.

The following design objectives were considered in the development of alternatives:

- Avoid exacerbating operational problems on I-295 (i.e. weaving and merging).
- Reinforce the transition from freeway to urban street environment by providing positive traffic control (traffic signal, stop sign, or yield) at every ramp terminal on Park Avenue and Congress Street.
- Provide increased opportunities for pedestrians to safely cross Park Avenue and Congress Street.
- Provide a bicycle route between the Peninsula and the Portland Transportation Center along Park Avenue that is accessible to the average bicyclist.
- Improve the street environment for public transit services, including more attractive waiting areas and a more coherent and “legible” network.

5 Regional Traffic Analysis

From the outset, this study was charged with evaluating the possibility of closing of redundant ramps and converting Park Avenue and/or Congress Street to 2-way operation as a means to meet the above goals and objectives. The closure of the ramps will, for some users, increase their travel time for trips using I-295. Table 5.1 summarizes the increase of travel time and distance that would be incurred by diverting to the Fore River Parkway interchange. The travel time change at 25 mph represents an estimate of off-peak conditions, and at 15 mph represents peak hour conditions. Because most interstate travelers are making long distance trips, these increases are small relative to the total travel time of an interstate trip.

Table 5.1: Increased Travel Time from diverting to the Fore River Park Avenue interchange

Ramp		Change in distance (Miles)	Change in travel time (Min:Sec) at 25 mph	Change in travel time (Min:Sec) at 15 mph
A	NB Exit to EB Congress St	0.62	1:29	2:28
B	SB Entry from WB Park Ave	-0.14	-0:20	-0:34
C	NB Entry from EB Congress	0.49	1:11	1:57
D	SB Exit to WB Congress St	0.27	0:39	1:05
F	NB Entry from Park Ave	0.97	2:20	3:53

The PACTS Travel Demand Model can simulate how changes in road capacity or configuration would likely affect regional traffic patterns, and was used to test the ramp closures and one-way to two-way conversions. The model provides p.m. peak hour volumes for all of the region’s roads and major streets. It also provides regional measures such as Vehicle-Miles Traveled (VMT) and Vehicle Hours Traveled (VHT), which are useful to provide measures of overall network performance for different

scenarios. A set of model runs was conducted where each ramp was removed individually so that it could be determined the effects of the traffic circulation changes under consideration. Conversion of Park Avenue and Congress Street to two-way operation was also evaluated. The results of these runs are provided in Table 5.2, and show that these changes in traffic circulation have very small changes in regional VMT or VHT, within the accuracy level of the model.

Table 5.2: Regional Traffic Model results for Ramp Closures and Two-way Conversions

Reconfiguration	% Change in Vehicle-Miles Traveled (VMT)	% Change in Vehicle-Hours Traveled (VHT)
Close Ramp A NB Exit to EB Congress St	0.0279%	0.0006%
Close Ramp B SB Entry from WB Park Ave	0.0003%	-0.0146%
Close Ramp C NB Entry from EB Congress St	0.0211%	-0.0030%
Close Ramp D SB Exit to WB Congress St	0.0053%	-0.0162%
Close Ramp F NB Entry from Park Ave	0.0175%	0.0270%
Convert Park Ave to 2-Way	0.0074%	0.0003%
Convert Park Ave and Congress St to 2-Way	-0.0076%	-0.0033%

The results above show that none of the proposed changes would lead to noticeable increases in congestion and travel time, as the changes are not significant and within the model error range. Therefore, these possible changes in traffic circulation were considered among the alternatives, as described in the following section.

6 Alternatives

The following steps were followed in the process of developing, evaluating and refining alternatives.

- Brainstorm alternatives with input from PAC.
- Screen through preliminary modeling, review with FHWA/MaineDOT.
- Refine into four alternatives, analyze with PACTS model and Synchro
- Select preferred alternative, refine design through SimTraffic modeling

Table 6.1 summarizes the four refined/screened alternatives, which are illustrated in the attached maps.

Table 6.1: Alternatives Summary

	Interchange Configuration	a) Park Avenue-2 way Congress Street 1-way	b) Park Avenue-2 way Congress Street 2-way
Alternative 1	- Close 5 ramps: A,B,C,D,F - Directs all interstate traffic to Fore River Parkway Interchange	- Park Avenue is major route into downtown - Congress Street is major bicycle route	- Both routes serve traffic - Park Avenue is major bicycle route - Congress Street provides on-street parking
Alternative 2	- Close 4 ramps: A,B,C,D - Eastbound access to Ramp F is provided - Less traffic on Fore River Parkway Interchange than Alternative 1.	- Congress Street 2-way between Marston and St. John, and provides on-street parking - Park Avenue is traffic and bicycle route	- Equal emphasis for traffic, bicycles and parking on Congress Street and Park Avenue - Larger signal at Congress Street/Park Avenue/I-295 NB

Figure 6.1 through Figure 6.4 show the alternative concepts. Additional illustrations, including proposed street cross sections, are available in **Attachment 3**.

Figure 6.1: Alternative 1a



Figure 6.2: Alternative 1b



Figure 6.3: Alternative 2a

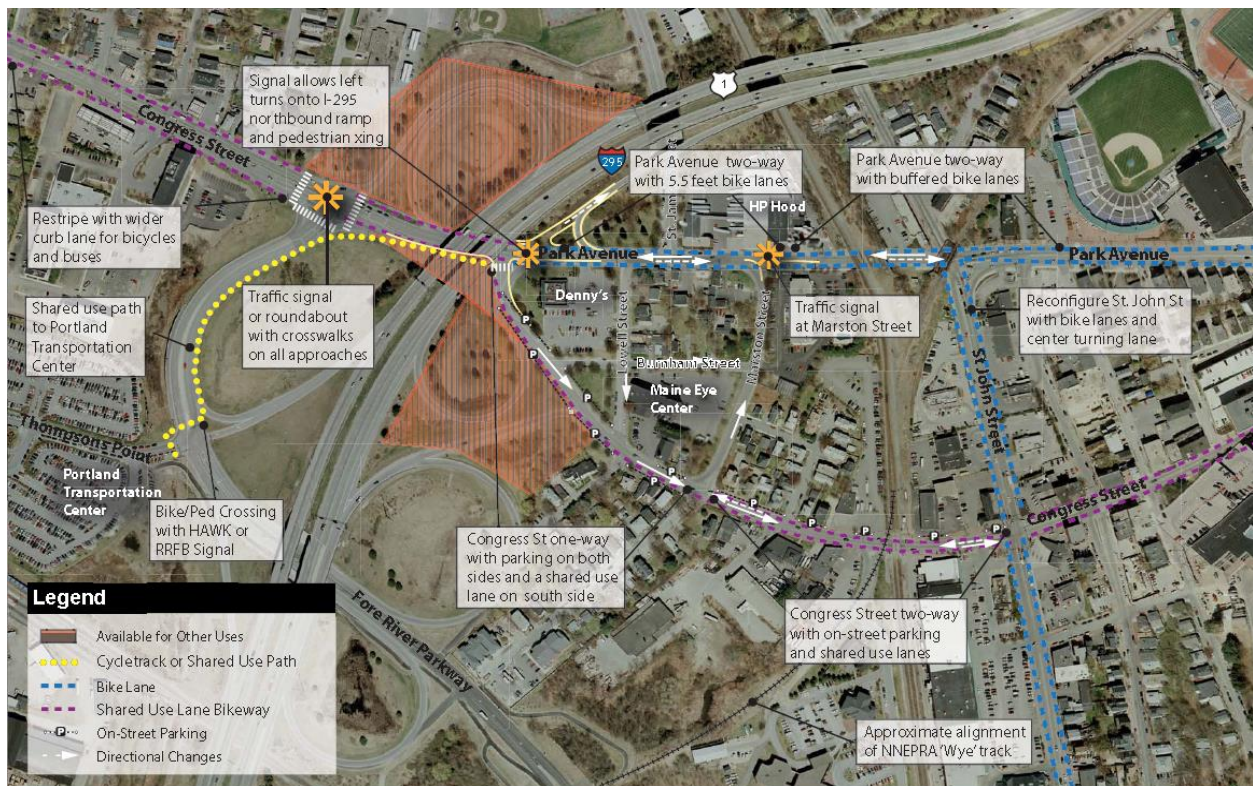
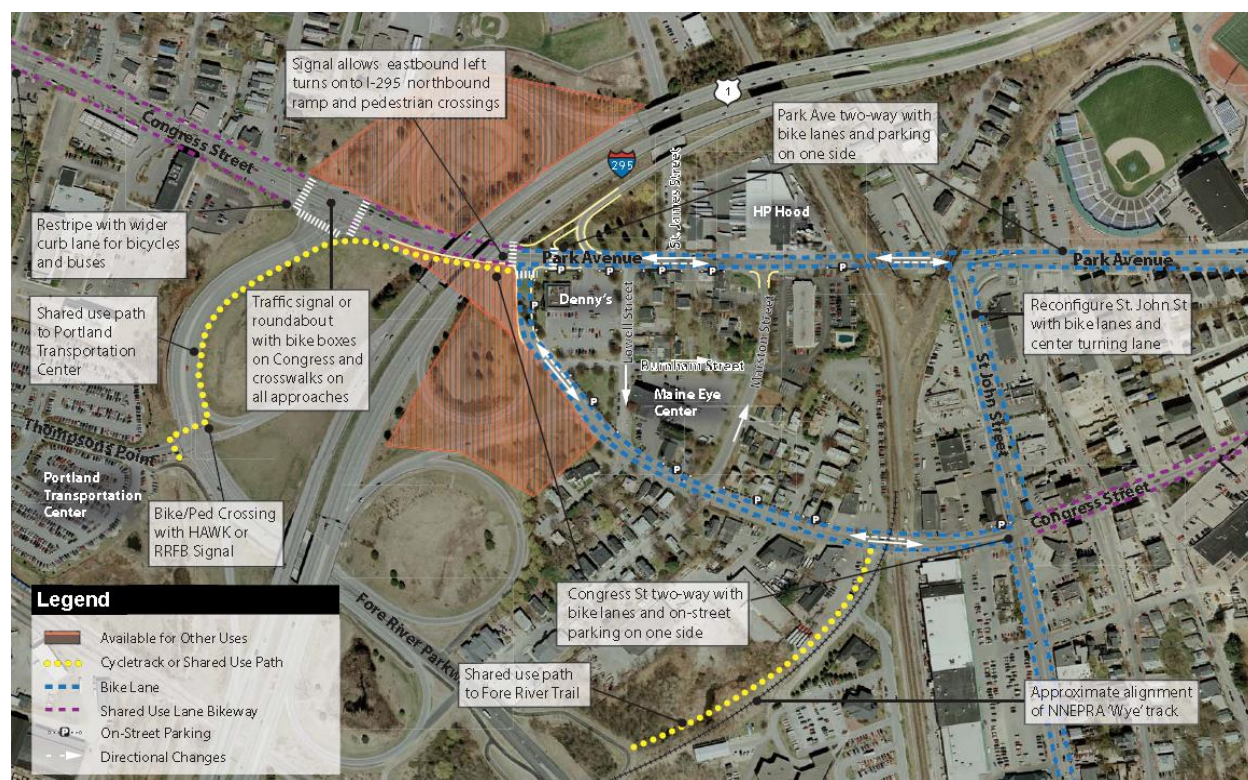


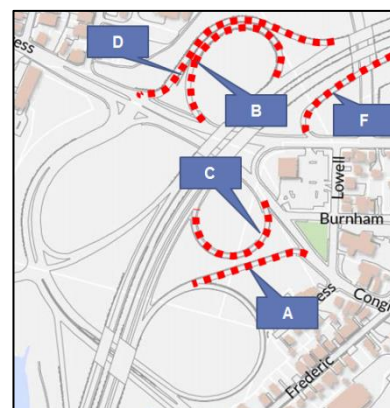
Figure 6.4: Alternative 2b



6.1 Rationale for Interchange Ramp Closures

Ramps A through D each have either vehicular safety deficiencies and/or create problems for other users of the street network. The following summarize the key considerations for each ramp:

- High crash location at junction with Congress Street; and design encourages high speeds for traffic entering Congress Street.
- High crash frequency at the junction with I-295 SB, and problematic weaves on I-295 due to inadequate radius for acceleration.
- High crash location at junction with I-295 NB and inadequate radius for acceleration.
- High crash location at the junction with Congress Street; and results in frequent U-turns along outer Congress Street for drivers seeking to get towards downtown Portland.
- High incidence of crashes at ramp's junction with northbound lanes of I-295. Relatively low volume of use indicates that closure would inconvenience relatively few travelers.



The closure of ramps A, B, C and D was included in all alternatives. Ramps A and C have the greatest negative impact to the safety and character of the Congress Street neighborhood, although their closure will result in some delay and potentially slower emergency vehicle response times. The closure of

ramps B and D have only a minor effect on travel times and distance. Ramp D's closure will significantly improve the function of the Congress Street/Fore River Parkway intersection by simplifying the geometry and signal phasing. Ramp B traffic can easily be accommodated at the Fore River Parkway southbound on-ramp.

6.2 Rationale for Two Way Street Conversion

In all scenarios, Park Avenue is proposed to be converted to 2-way operation, due to the following significant benefits:

- Emergency response time reliability by avoiding the at-grade railroad crossing.
- Providing an important link in the City's bicycle network by allowing westbound bicycle lanes on Park Avenue.
- Greater visibility and accessibility for local businesses, such as HP Hood and La Quinta.

Congress Street is proposed to have two-way operation in two of the scenarios. There are significant benefits in local accessibility and in the operations of Park Avenue if Congress Street is two-way.

6.3 Regional Model Results

The regional model was used to test the alternatives for their potential effects on the regional transportation network, with the in Table 6.2. A set of maps showing the regional redistribution of traffic are provided in Attachment 4.

Table 6.2: Regional Model Results for Alternatives

Scenario	Regional VMT	Change in VMT
2009 Base	1,075,928	
Alternative 1a	1,076,292	0.0339%
Alternative 1b	1,076,127	0.0186%
Alternative 2a	1,076,197	0.0251%
Alternative 2b	1,075,921	-0.0006%

All of the alternatives had only very small effects on VMT. The alternatives with both Park Avenue and Congress Street operating as two-way streets had lower VMT than those with just Park Avenue operating as one-way. Alternatives 2a and 2b were each lower than 1a and 1b due to the shorter travel distances afforded by the northbound on-ramp being used by eastbound traffic. Overall, it can be concluded that the regional transportation network will see only minor effects from the ramp closures, and that the street network can absorb the redistribution of traffic.

6.4 Multimodal Analysis

A multimodal level-of-service evaluation was conducted to determine how well each alternative meets the project goals to improve conditions for all modes and users. The primary factors for each mode are as follows:

- **Vehicles:** Considers peak hour level of service (LOS) and vehicle delay at intersections.
- **Pedestrians:** Considers streetscape comfort (i.e. trees, buildings or on-street parking), distance between protected crosswalk, delays at crosswalks, and exposure to travel lanes when crossing.
- **Bicycles:** Considers traffic volumes, traffic speed and facility types: shared lane, bicycle lane, or separated facility (cycle track or shared use path).

The types of bicycle facilities that were incorporated into the alternatives are shown in Figure 6.5. A shared lane is most suitable on a low volume/low speed street. On higher speed streets, facilities with more protection are needed to accommodate less confident and skilled riders, such as a bicycle lane or cycletrack.

Figure 6.5: Bicycle Facility Types



Multimodal level of service (LOS) is reported on a scale of A through F, with A representing ideal conditions, and F representing challenging, unsafe, inconvenient or uncomfortable environment. Table 6.3 summarizes the results of the pedestrian and bicycle analysis for key street segments within the study area, which follow current methodology published in *Sustainable Transportation Planning*, by Jeffrey Tumlin in 2012. The Fore River Parkway is not included, as no significant changes are proposed among the alternatives. It should be noted that a multiuse path is planned to connect Congress Street with the Portland Transportation Center. More detail on the analysis is provided in Attachment 4.

Table 6.3: Pedestrian and Bicycle Level of Service for Libbytown Alternatives

	Pedestrian LOS					Bicycle LOS				
Segment	Existing	1A	1B	2A	2B	Existing	1A	1B	2A	2B
Outer Congress Street	E	C	C	C	C	F	E	E	E	E
Congress Street	E	B	C	B	C	F	B	C	D	C
Park Avenue	D	C	B	C	B	E	C	B	C	C

Transit level of service was not analyzed as no significant changes to transit services are proposed. However, alternatives 1b and 2b would best support transit due to both Park Avenue and Congress Street being two-way streets, which allow bi-directional routes and for stops to be located across the street from each other.

Vehicular LOS was conducted for key study area intersections that would see significant changes in traffic volume. Vehicular LOS is a measure of peak hour intersection delay on a scale of A through F. Typically D is considered a target for the peak traffic hour, but lower levels are typically acceptable in urban areas, upon consideration of the cost, socio-economic and environmental impacts, conditions desired for other modes, and willingness of the community to tolerate congestion. Vehicular LOS analysis was conducted for the study area's major intersections for the 2015 PM peak hour, with results shown in Table 6.4. The analysis assumed the full build-out of the Thompson's Point development as currently permitted by the City of Portland and MaineDOT.

Table 6.4: 2015 PM Peak Vehicular Level of Service for Libbytown Alternatives

	Vehicular LOS				
Intersection	Existing	1A	1B	2A	2B
Fore River Parkway/ Thompsons Point	D	D	D	D	D
Congress Street/ Fore River Parkway	C	D	D	D	D
Congress Street/St John	C	C	D	C	D
Park Avenue/St John	C	D	D	D	D

The LOS at Fore River Parkway/ Congress Street is reduced from C to D due to significantly higher volumes turning onto Fore River Parkway with the ramp closures. The intersections of St. John/Park Avenue and St John/Congress Street would have lower volumes, and accordingly have fewer travel lanes, resulting in little change in level of service. These results indicate that all of the alternatives meet the target of LOS D or better during the PM peak hour.

The multimodal analysis of alternatives allows the following conclusions:

- Bicycle and Pedestrian level of service improves significantly for all alternatives.
- Intersection (vehicular) level of service is lower at some locations due to higher traffic volumes with the ramp closures, but remains at acceptable levels.
- Transit operations will improve most under Alternatives 1B and 2B.

6.5 Vehicular Traffic Design Considerations

The alternatives were reviewed with MaineDOT, and several issues emerged with the proposed design of alternatives 2a and 2b. There were concerns about increasing northbound traffic increasing the incidence of crashes at the ramp's junction with the mainline of I-295. For Alternative 2B, the design of the Congress Street/Park Avenue/Northbound Ramp intersection was awkward, and could require

substantial right-of-way impacts to properly align Congress Street with the northbound on-ramp. These concerns resulted in alternatives 2a and 2b being eliminated from further consideration.

7 Recommendations: The Preferred Alternative

After consideration of the public input and a review the modeling and analysis results against the goals and objectives, a refined alternative is recommended, as shown in Figure 7.1. This preferred alternative is based on Alternative 1b, but keeps Ramp F open due to public and stakeholder support. It is recommended that the need for Ramp F be re-evaluated in the future, as it may not prove to be essential for traffic, and it could be converted to a useful trail connection as described in Alternative 1b.

This preferred alternative scenario was also tested in the PACTS regional travel demand model. Figure 7.2 shows the projected changes in volume on City streets and highways in terms of percent increase or decrease. There are projected traffic increases on the Fore River Parkway interchange, on St John Street south of Congress Street, Veteran's Bridge, and Park Avenue east of St. John. Volumes on Park Avenue, Congress Street and St. John within study area have lower traffic volumes.

The following sections describe the proposed changes to each major street segment in the study area, and then provide more details on proposed intersection design.

Figure 7.1: Recommended Alternative

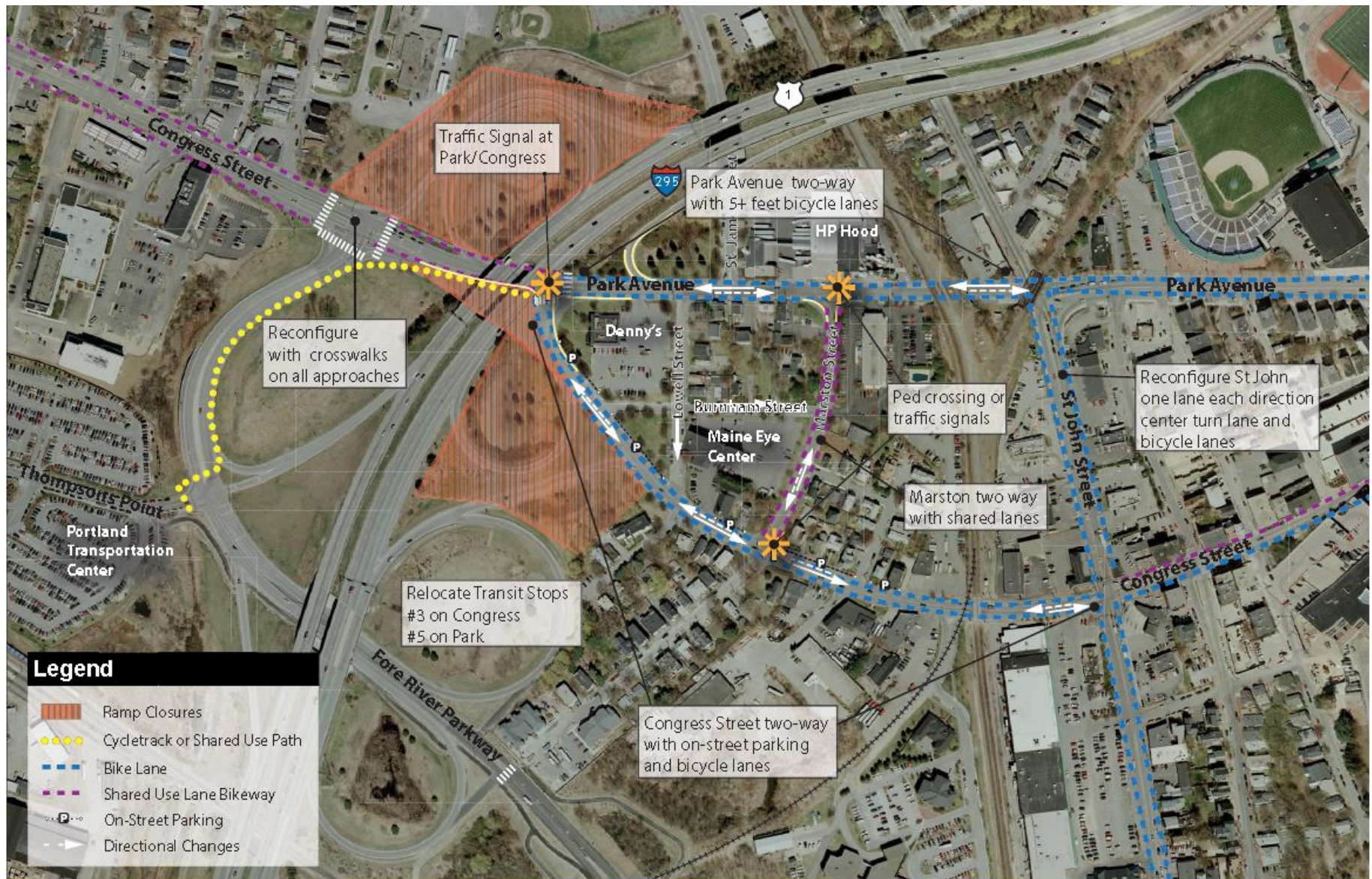
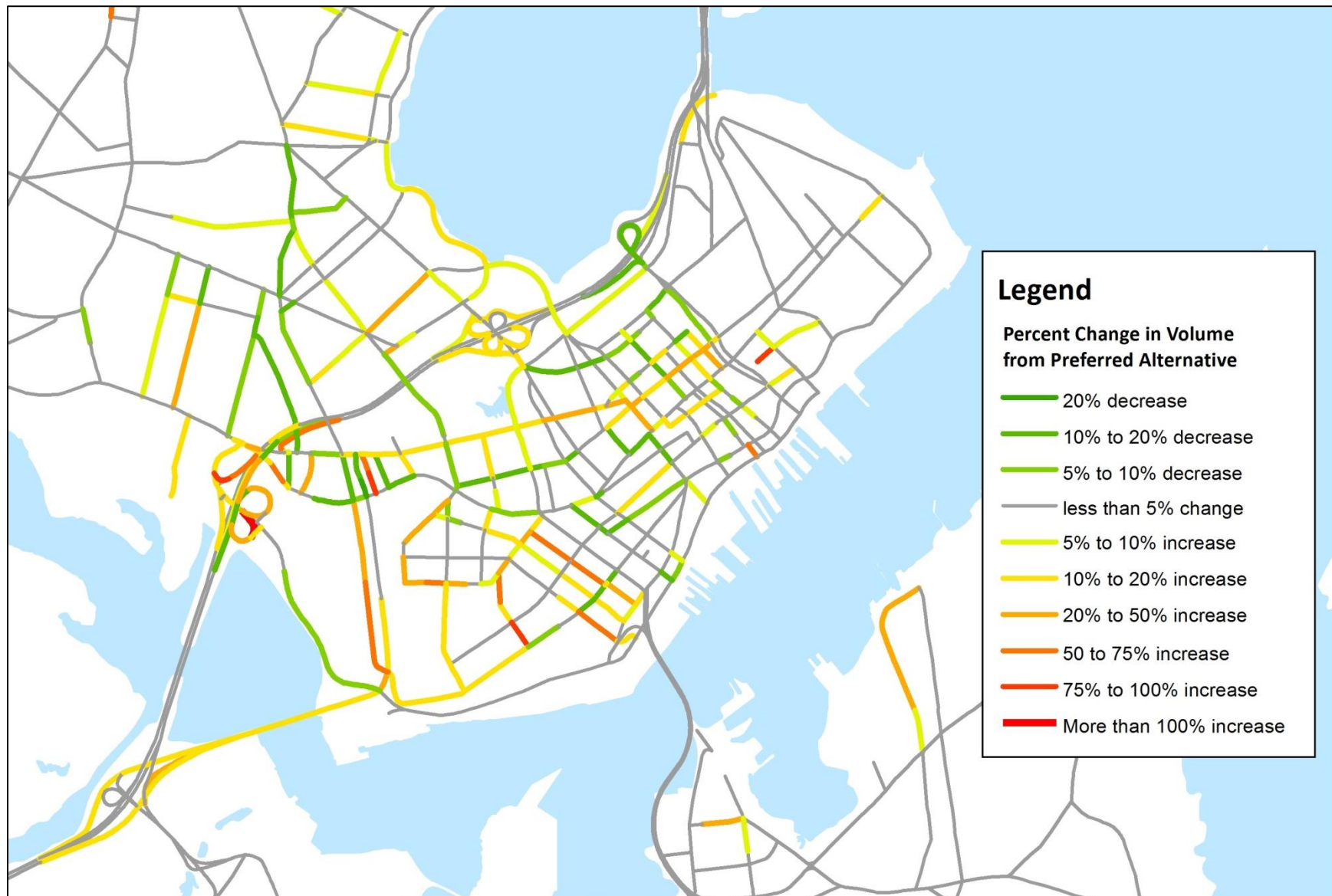


Figure 7.2: Regional Model Results for the Preferred Alternative (2015 PM Peak Hour)



7.1 Park Avenue: Two-Way with Bicycle Lanes

Among the most significant reasons for converting Park Avenue to 2-way operation is to provide a major route onto the Peninsula that does not have an at-grade railroad crossing. Freight and passenger trains crossing Congress Street creates significant congestion, and this will become more frequent. The railroad crossing congestion is particularly a problem for emergency responders accessing the Maine Medical Center emergency room.

The proposed cross section for Park Avenue has bicycle lanes in both directions, although the configuration and dimensions will vary between I-295 and St John Street. As Park Avenue approaches Congress Street and I-295, there will be two eastbound lanes and one westbound. Figure 7.3 shows the existing and proposed conditions in front of HP Hood on Park Avenue, at Marston Street. A curb extension and improved pedestrian crossing will be provided.

Figure 7.3: Park Avenue Cross Section – Existing and Proposed



7.2 Congress Street: Two-Way with Bicycle Lanes and On-Street Parking

There are a number of benefits for Congress Street to have 2-way operation. The traffic evaluation with Park Avenue 2-way and Congress Street 1-way indicated the potential for long queues and delays on St. John Street, which currently receives most of the westbound traffic on Congress Street, in addition to increased traffic from the ramp closures. This situation is alleviated with Congress Street operating as a 2-way street, which also creates a more favorable environment for local businesses due to the greater accessibility and visibility. Traffic speeds are generally lower on 2-way streets, which make them safer for pedestrians. Transit service will be improved, as stops on Congress Street can serve transit routes in both directions.

Figure 7.4 shows the changes that are proposed for Congress Street at Marston. Congress Street will have bicycle lanes in both directions and parallel parking on the north side. Curb extensions are provided for shorter pedestrian crossing distances, and to narrow the appearance of the road. This proposed configuration fits within the existing right-of-way. Street trees and a green buffer will create a more attractive speed and shelter pedestrians. Traffic speeds should be significantly reduced from current levels due to the two-way operation.

Figure 7.4: Inner Congress Street between Marston and Lowell Streets: Existing and Proposed Conditions



7.3 Saint John Street: Reconfiguration and Bicycle Lanes

Reconfiguration of St. John St. is recommended after Park Avenue and Congress Street are converted to two-way operation, as traffic volumes on St. John St. between Congress Street and Park Avenue, will be significantly lower. Because of the very high incidence of crashes on St. John St., it is recommended that it be reconfigured as shown in Figure 7.5, with one travel lane in each direction, a center left turn lane, and bicycle lanes. This will provide ample vehicular capacity after the two-way conversions of Park Avenue and Congress Street, and will function much more safely for all users, particularly bicyclists. If desired, mid-block crosswalks can be established where needed with a raised median to protect pedestrians. These changes can be implemented through re-striping of the pavement at the time of the next resurfacing of the street.

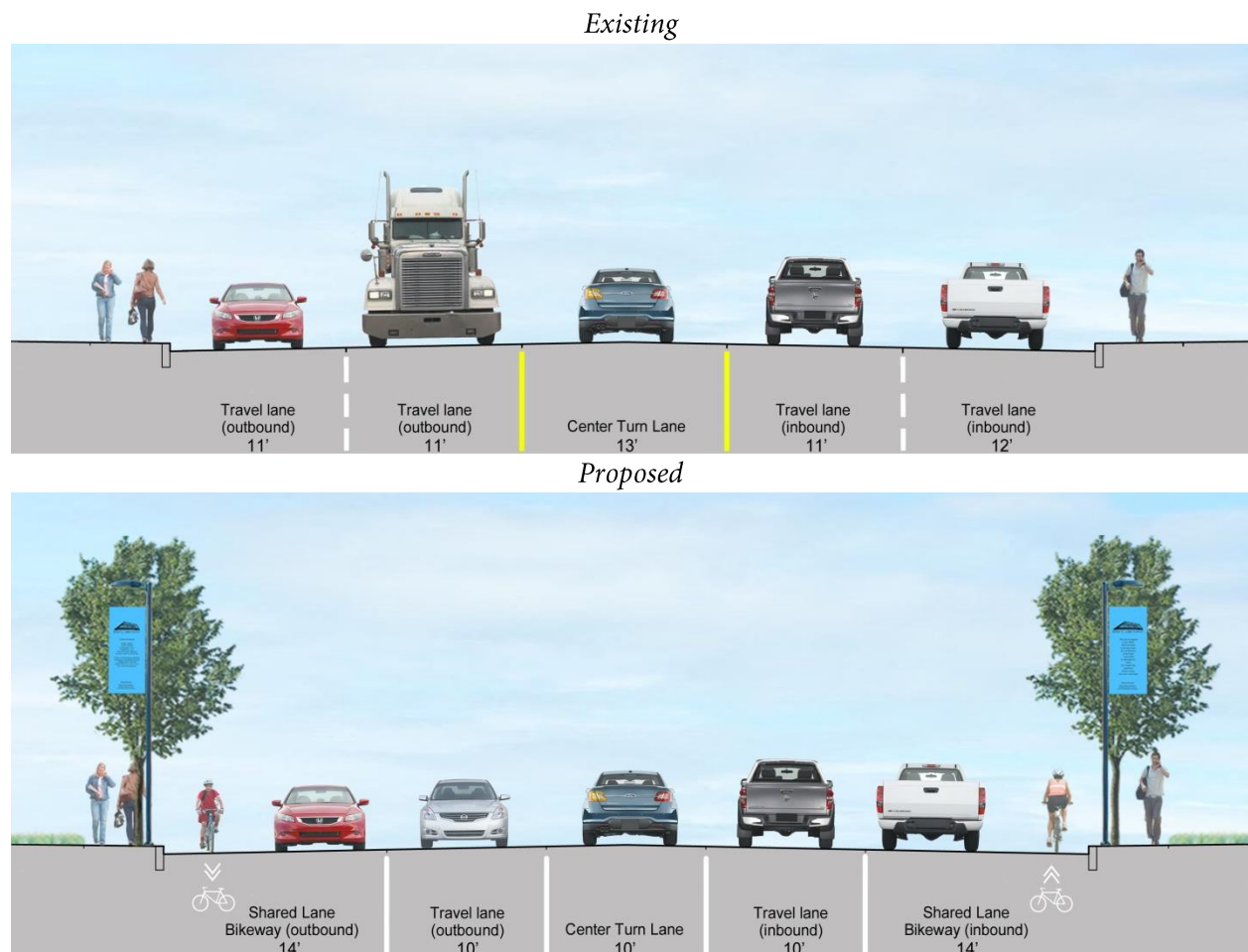
Figure 7.5: Proposed Reconfiguration of St. John Street



7.4 Outer Congress Street

Because of high traffic volumes and limited right-of-way, there are few options for significant improvements to Outer Congress Street. It is proposed to be re-stripped with narrower inside travel lanes that will allow for a wider curb lane for shared use with bicycles. The curb lane width will also be beneficial for buses. Proposed cross sections are shown in Figure 7.6.

Figure 7.6: Outer Congress Street Cross Section



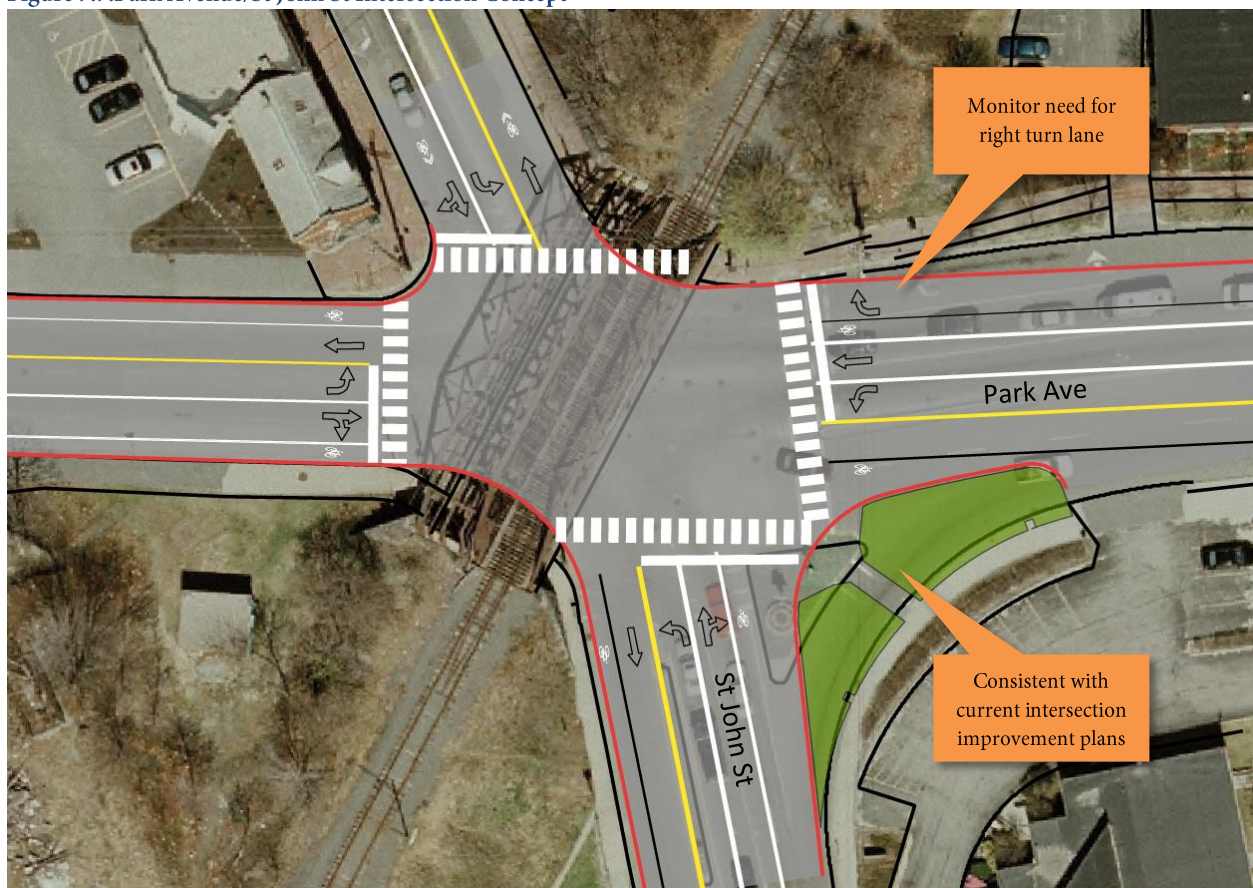
7.5 Intersection Improvements

The alternative requires changes at many of the study area intersection, which were considered in the vehicular LOS analysis. The following sections show the proposed concepts for the main study area intersections, and identify some of the features and opportunities created.

7.5.1 Park Avenue/St John

This intersection will be substantially reconfigured with two way operation of Park Avenue. There are planned improvements that will result in changes to the southeast quadrant of the intersection, which are shown below and compatible with these changes.

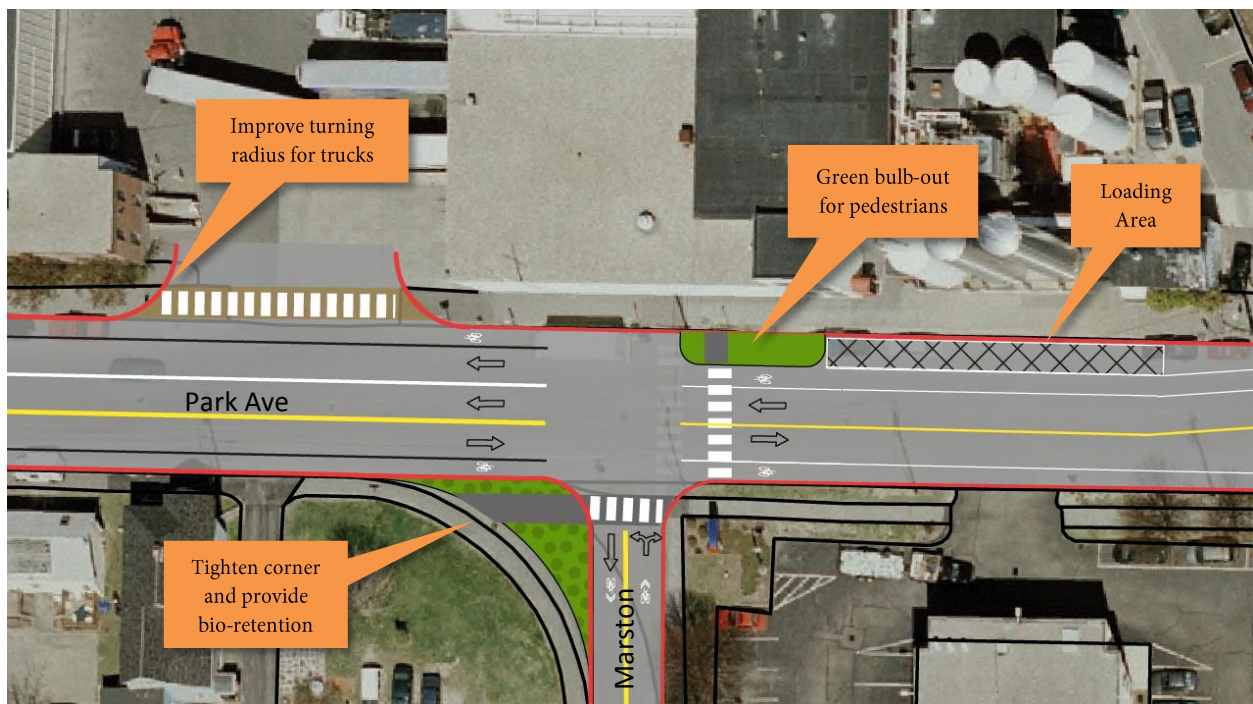
Figure 7.7: Park Avenue/St John St Intersection Concept



7.5.2 Park Avenue/Marston

This intersection is at a transition point along Park Avenue. East of this point, Park Avenue will have one lane in each direction. West of this point, Park Avenue will transition to have two westbound lanes approaching the Congress Street intersection. Marston Street may become a two-way street, and the wide corner will be tightened to reduce the pedestrian crossing distance. The corner may require a mountable surface as HP Hood trucks may need to use the corner as they access their site.

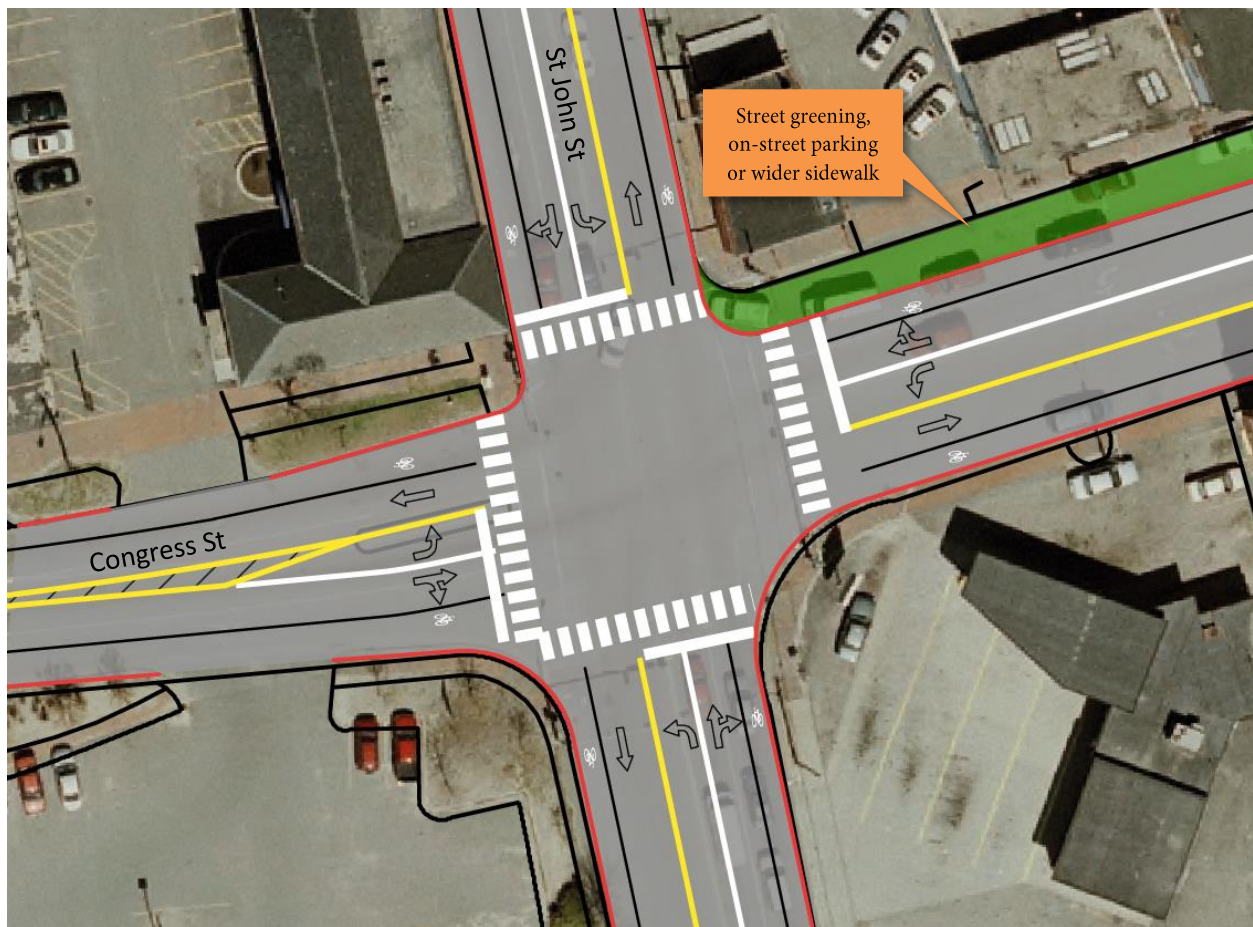
Figure 7.8: Park Avenue/Marston St Intersection Concept



7.5.3 Congress Street/St. John

This intersection will be substantially reconfigured with Congress Street having two-way operations. Each leg of the intersection will have no more than one through lane. There is room for a wider sidewalk, parallel parking or street greening along Congress Street between Valley and St. John.

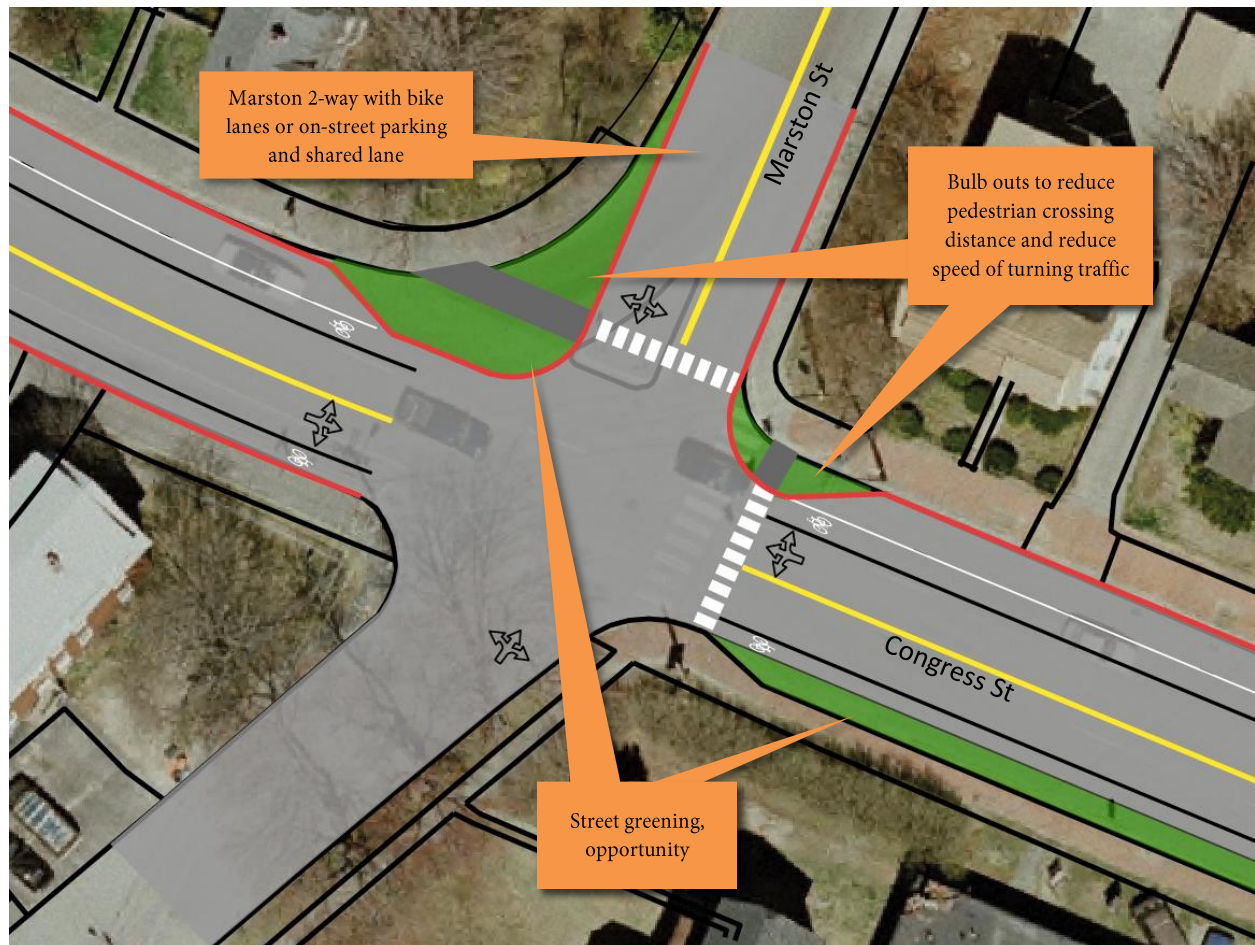
Figure 7.9: Congress Street/St John St Intersection Concept



7.5.4 Congress Street-Marston Street-Frederic Street

Congress Street will have one lane in each direction plus bicycle lanes, and parallel parking on the north side. Marston is proposed to be two-way, with a tighter radius for reduced pedestrian exposure while crossing. There is also room to establish a planting strip on the south side of Congress Street, east of this intersection.

Figure 7.10: Congress Street/Marston Street/Frederic Street Intersection Concept

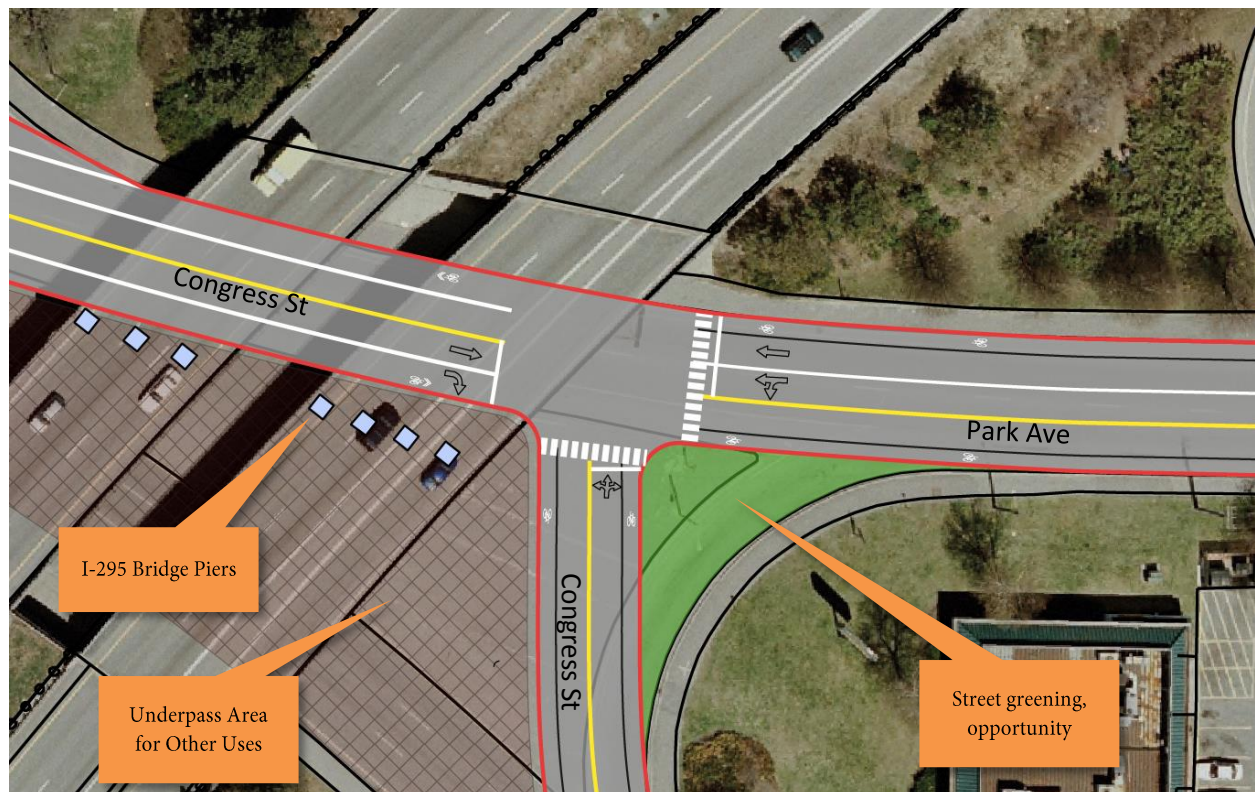


7.5.5 Congress Street/Park Avenue

This intersection has substantial changes in this plan:

- The intersection is proposed to be signalized.
- Park Avenue is designed as the primary travel corridor, and has the straight through movements at the signal.
- Outer Congress Street is realigned to be north of the interstate bridge piers, which creates a better designed intersection that emphasizes Park Avenue.
- There are numerous opportunities to consider other uses of the area under I-295, including a multi-use path connection to Fore River Parkway, and public space designs.

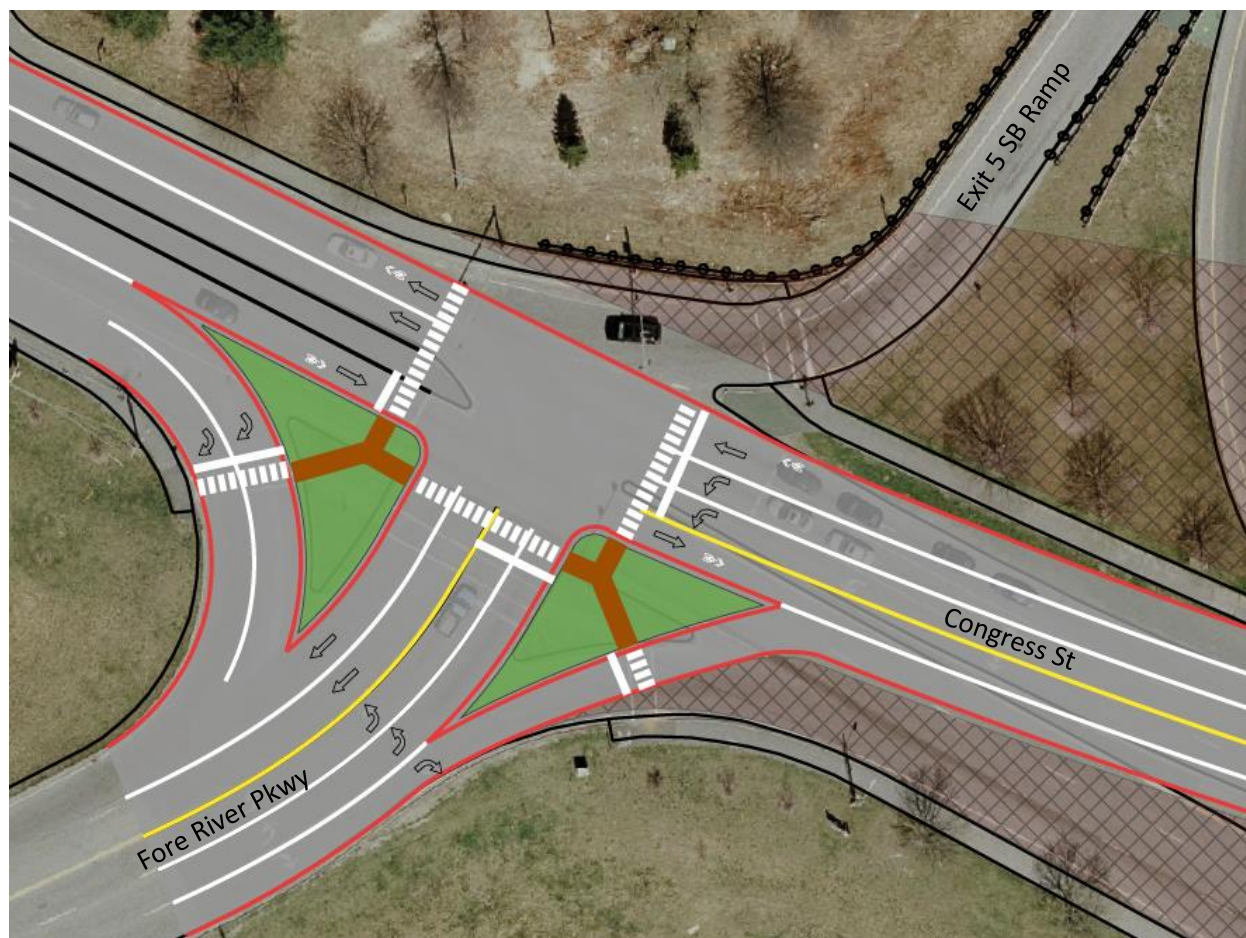
Figure 7.11: Congress Street/Park Avenue Intersection Concept



7.5.6 Congress Street/Fore River Parkway

This intersection would be reconfigured generally within its current footprint as shown below. There would be two westbound left turn lanes and two eastbound right turn lanes to address the growth in these turning movements resulting from the ramp closures. The eastbound approach is realigned to allow Congress Street to be north of the bridge piers. There would be ample spaces for other uses both north and south of Congress Street.

Figure 7.12: Congress Street/Fore River Parkway Intersection Concept



The above configuration provides adequate levels of service through the year 2015. The analysis of 2035 traffic volumes suggests that additional improvements to the Congress Street-Fore River Parkway and Thompsons Point-Fore River Parkway intersections may be needed if traffic volumes grow as indicated in the regional model. However, this is far from certain, as traffic has been declining in this area for years. The traffic volumes and operations at this should be monitored. If congestion increases to levels that are not tolerable, additional improvements can be implemented at that time, which could include a

modern roundabout, or additional through-traffic lanes. More analysis and design discussion is included in Attachment 4.

7.5.7 Fore River Parkway/Thompson's Point Rd

This intersection is currently planned for significant improvements associated with the Thompsons Point development. The vehicular LOS analysis found that the planned improvements will adequately serve the redistributed traffic from the Preferred Alternative through the year 2015, including all the traffic projected from a full build-out of Thompsons Point. The future volumes are highly uncertain with the variety of development proposals under consideration, but if additional capacity is required, a two-lane modern roundabout could be constructed, which would provide ample traffic capacity. More information is provided in Attachment 4.

7.6 Streetscape Improvements

Streetscape improvements are key components for creating a Complete Streets network in Libbytown, and to improving the environmental, economic, and social well-being of the neighborhood. These can be implemented gradually, as overall implementation proceeds through the Libbytown network. Some streetscape recommendations from the *Connecting Libbytown* (2009) have been carried over and used in this report, modified and improved upon where necessary. More discussion on the relationship between these recommendations and *Connecting Libbytown* is available in Attachment 5. Some overarching elements from the *Connecting Libbytown* include:

- Provide pedestrian scale lighting under the highway and Pan Am Railroad overpasses.
- Add signage and other visual clues, such as colored or grooved pavement, narrower roadways, on street parking, curb extensions, street furniture . . . to alert autos that they are in an urban setting and should expect the presence of bicyclists and pedestrians
- Extend some of the thematic elements of Park Avenue east of St. John such as esplanades and wider sidewalks to the length of Park Avenue
- Provide more opportunities for public art along the corridor

The following sections address the various streetscape elements in more detail, as they pertain to the various locations within the study area. Many if not all of the streetscape elements, size, color, type, locations, etc. will need to be coordinated with numerous stakeholders to decide what facilities are most appropriate. There is also a future transit study which will likely address the issues in much greater detail.

Lighting- Currently, the pedestrian scale lighting being used in Libbytown comes from a 2007 committee recommendation.

These are lights that are provided and installed by Central Maine



Power (CMP) under a leased lights agreement with the City, whereas the City pays a monthly fee that covers the costs of the lights, the electricity, and the maintenance. The current specification for the Libbytown pedestrian light is the CMP Radial Wave Fixture on a Hallbrook Pole.

Within the last several years, the City has been trying to reduce street and pedestrian lighting power consumption and associated costs by incorporating LED light fixtures, some of which could be supplied by CMP, some purchased and installed under separate contracts. Solar-powered LED streetlights have seen significant technological advancement in the last few years and are another option the City could consider for the Libbytown Streetscape.

A short term, immediate improvement to the pedestrian lighting environment will be the installation of sidewalk light bollards underneath the Pan Am overpass. This location was noted early on in the Libbytown Study as the most at need location for lighting. *Similar bollard lighting should be considered on Congress Street Avenue and Saint James Street under the highway bridges of I-295.*



Greening the Streets – Street trees can be

effective in providing shade, color, scale, texture, contrast, defining spaces, separating land uses, and giving individual character to special places in the urban environment. Wherever possible, the use of raised planting beds should be used. Raised planter beds serve multiple functions for the streetscape and pedestrian environment. Raised planting beds protect trees and shrubs from compaction, accidental damage, and winter salting; and have proven to significantly increase the

health, longevity, and size of street trees in Portland. Where there is sufficient width, placing the plantings three to five feet inside the curb can help define different zones within the pedestrian realm. The curbside zone outside of the planters allows people to open car doors and access the sidewalk, and provides a clear “pedestrian only” realm. The use of hardy native perennials and grasses should be incorporated in the tree planters to provide color and seasonal interest. The inner sidewalk, separated physically and visually from the street, can function in many ways, including outdoor seating for restaurants and cafés, space for food carts or other vendors, or bikes, if space allows. Spaces between planters can be used for street furniture, i.e., benches, bike racks, recycling/trash receptacles; keeping it in-line with the planters helps maintain clear paths for pedestrians on either side of the streetscape elements.

Replacing trees that die because of insufficient soil is costly. Structural soils have been proven to solve this common problem. Structural Soil is a mix of aggregate and soil, with a small amount of polymer gel to hold the mix together. This mix can be compacted to 95% of dry density to support paving while still allowing for tree root growth. Studies have shown that trees growing in structural soils vastly outperform trees growing in typical urban conditions, live much longer, become larger, and provide many more environmental benefits. Structural soils can facilitate the growth of much larger trees, providing increased shade and visually reducing the scale of large monotonous buildings.

Raingardens and Bioretention cells -A combination of rain gardens or bioretention cells can help to decrease peak stormwater flows during storm events, which can in turn help mitigate combined sewer overflows (CSO's). They also improve water quality and beautify the streetscape. Typically a rain garden or a bioretention cell is a small planted area located at a low point that has been designed with a specific engineered soil mixture and plants that are capable of withstanding the extremes of moisture and concentrations of nutrients, particularly Nitrogen and Phosphorus.



Urban rain gardens and/or bioretention design can come in many shapes, sizes, and forms; typically they may include stormwater planters, stormwater tree pits and stormwater curb extensions. In an urban environment, rain gardens or bioretention cells are designed to fit into containers, and typically located within the median or edges of a street right-of-way, planting beds, tree pits, and plazas. Rain gardens are usually open-bottomed to allow some infiltration of stormwater, but are more often designed with an underdrain that connects to a closed stormwater system.

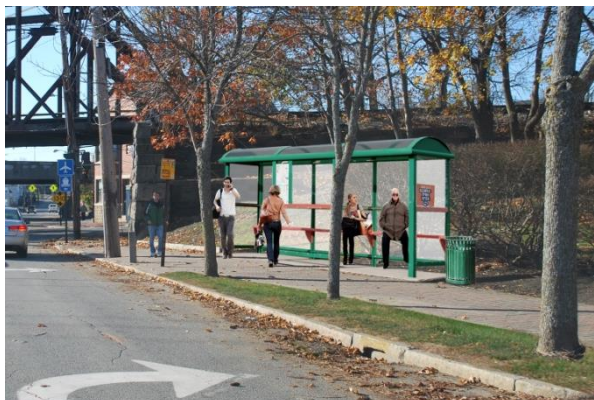


Benches-A well-built bench in the right location can help to encourage pedestrian activity along a sidewalk or in a Park Avenue. In Libbytown, there should be benches at every bus stop and within the public Park Avenues, or where people watch other people, i.e., the future public space under the highway overpass. Benches should be constructed of durable materials that are resistant to weather, vandalism, and rusting. Installation should be inexpensive, time efficient, and as durable as possible.

Installation plans should allow for experimentation with location, and bench arrangement. Sometimes benches are vandalized. One way of preventing vandalism in a downtown area is locating benches where adjacent businesses can see them and assume some responsibility for their use and maintenance.

Bus Shelters-It is important that bus stops are easily identifiable, safe, accessible, and a comfortable place to wait for the bus. Well-designed bus stops encourage ridership, making the transit system more profitable, while also decreasing vehicular traffic on the local roads. The City should seek to make bus stops a positive contribution to the community streetscape and a place where riders can obtain transit related information and are encouraged to use the provided services. Guidelines should identify

and encourage partnerships with transit riders, METRO, the City, local businesses, residents, and property owners. The City may need to work with abutters to improve access to bus stops, including



sidewalks, safe street crossings, accessible curb ramps and bicycle lanes. The quality of the streetscape is critical to the success of the bus stop development program.

While bus shelters should have low maintenance requirements and be vandal-resistant, other perspectives are also important. From the rider's point of view, an ideal shelter is one that allows visibility and easy access to the bus, is comfortable and convenient, provides clear information, and is safe.

Both viewpoints are equally important to consider, because an unused shelter is a waste of money and an unnecessary maintenance problem. A well-designed, comfortable shelter can make waiting for a bus a pleasant — and even interesting — experience. Based on the existing conditions evaluation, the recommended shelter locations within the Libbytown Study area include: Park Avenue & St. John by the old Fire House (easements may be required for proper siting), at St. John & A Street in front of D'Angelo sandwich shop, and at Congress Street & Massachusetts Avenue in front of the Mobil Gas Station.

Lowell Street Park Avenue—The existing City park at Lowell Street is very underutilized, mostly due to lack of safe access. Several members of the Public Advisory Committee expressed a strong desire to make the Park Avenue more accessible and install elements that will attract neighbors, i.e., benches and a small playground. The Park Avenue is small but is large enough for small children to run, jump, swing, and play, and has a location that can act as a neighborhood social hub/meeting spot. Its location also provides some safety challenges with traffic circulation on all sides. A short perimeter fence should be considered to keep children contained and engaged within the Park Avenue. The more complex the playground, the greater the choice and the more enriched the learning experience. Mounds, peaks, climbing poles, a network of tunnels, ladders, slides, climbing surfaces, and multiple ways of ascending, descending, and getting from here to there can be part of the playground. Increased use at the Park Avenue, as well as a highly visible play structure, can act as another visual cue or a “gateway” into the Congress Street residential neighborhood.



Public Art is integral to a community's fabric by recognizing the potential of art to create livable cities, enhance neighborhood identity, strengthen economic development and tourism, educate children and adults and enrich the spirit and pride of its citizens. Streets represent an exciting opportunity to incorporate art throughout their length. Artworks can take many forms: whimsical re-use of cast-off industrial pieces; benches, drinking fountains, and railings that capture and express a design aesthetic while also serving a defined function; landforms that ripple and excite the eye; sculptural pieces that are animated by the wind; paving patterns that reflect the patterns of the city; water features that help cleanse runoff. The list is only limited by the imagination of the arts community.



Bicycle parking on the sidewalks will be challenging in the Libbytown Study area due to their narrow width. Bike parking on sidewalks should be parallel to the street, with the sidewalk width of at least 8 feet to allow 5 feet for the pedestrian route. The City should work with business owners to augment bike parking required by ordinance, and avoid redundancy.

Recycling and Trash Receptacles- The Department of Public Services is working to deploy “Big Belly Solar Powered Trash and Recycling Compactors” where appropriate throughout the City. These units have advantages over traditional trash cans, including:

- Larger capacity.
- They send a text when they are full, so City crews only empty when needed, reducing unnecessary visits.
- Mounted to sidewalk for security.
- Built to withstand vandalism.
- Restrict the use of graphic panels for fund raising or advertising.
- Specify blue to match “Libbytown” streetscape amenities.



In addition to the general streetscape guidelines, several specific opportunity areas are described below.

- **I-295 Underpass Future**-The eventual removal of the ramps and the conversion of Park Avenue and Congress Street to two-way traffic will open up a significant amount of land around and under the 295 overpass. Several members of the Public Advisory Committee expressed a strong desire to convert the area under 295 to a public space, i.e., a public market, weekend craft fairs, small playgrounds, or athletic courts.



- **Bolton Street at Congress Street:** Sidewalks are in poor condition, utilities create obstacles and there is no clear delineation between pedestrian and vehicular space. This is the location of Tony's Donut Shop, a social hub for the Libbytown neighborhood. Improved sidewalks and a better delineation of pedestrian space could create more of a neighborhood experience for residents and visitors alike and potentially spur economic development.
- **Saint James Street, East Side:** Traveling from Park Avenue, this sidewalk becomes progressively narrower and then just ends under the I-295 overpass. This sidewalk could be continued north to a crosswalk, which would be installed to create a connection to the Dougherty Field Trail.
- **Granite Street.** Although Granite Street has the potential to connect the Oakdale and USM Neighborhoods to Libbytown by way of Saint John Street, there are no sidewalks on Granite Street between Roberts and Saint John. The absence of this sidewalk would encourage those traveling towards Libbytown, Hadlock Field, downtown or other locations to drive rather than walk.

- **Saint John Street:** While there are streetscape improvements planned for the area, the plans do not include the sidewalk on the east and west side of St John, in front of the Greyhound bus station and Union Station Plaza. These should be improved.

7.7 Implementation Strategy

This study sets out a long range strategy to achieve the goals set forth earlier. Elements of this plan can be implemented incrementally in stages, and the design proposals can be adapted as needed to fit any changes in design constraints, traffic volumes, multimodal use patterns and new or emerging goals. The plan does not require every element to be complete. The following implementation priority is recommended:

- 1) Convert Park Avenue to 2-way, which will require signal changes at Park Avenue/St. John, and modifications at the intersection of Congress Street and Park Avenue (see attached sketch). This will have immediate benefits of accessibility to the City and address the increasingly frequent railroad crossings. The cost for this is estimated to be \$414,000.
- 2) Restripe Outer Congress Street to have narrower inside travel lanes and wider outside lanes for shared use and transit. The cost for this is estimated to be \$111,000.
- 3) Convert Congress Street to 2-way. This will be easier after Ramps A and C are closed, but could be done earlier with adjustments to the terminus of Ramp C (I-295 NB off-ramp). The cost for this is estimated to be \$1,132,000. St. John St. should be reconfigured with the implementation of this phase.
- 4) Coordinate with MaineDOT and FHWA on testing and monitoring of ramp closures. While MaineDOT does not currently support ramp closures, the City and PACTS may continue to advance this concept due to their substantial benefits. Permanent closures will likely require interchange modification studies, and should also be subsequent to improvements at the Forest Avenue interchange. A possible ramp elimination order is proposed below, based on which closures would provide the greatest benefit and have the least impact on traffic operations:

1. Close Ramp A - I-295 northbound to Congress Street eastbound off- ramp
2. Close Ramp D - I-295 southbound to Congress Street westbound off- ramp
3. Close Ramp C - Congress Street eastbound to I-295 northbound on- ramp
4. Close Ramp B - Congress Street westbound to I-295 southbound on- ramp

Costs for ramp closures are estimated to be \$322,000.

- 5) When ramp closures have been tested and implemented, consider long term redevelopment of interchange area lands. Revenue from the redevelopment could fund any additional improvements that are needed, including the following.
- 6) Monitor traffic volumes and operations at the Fore River Parkway/Congress Street intersection, and consider improvements as indicated. Improvement alternatives include a roundabout or additional through lanes on Congress Street.

7.8 Cost estimate

A conceptual cost estimate based on suggested construction phasing has been prepared, and can be found in Attachment 6. Table 7.1 shows a summary of the costs, based on proposed project phasing.

Table 7.1: Cost Summary

Item	Phase	Component	Cost
1	Phase I: Conversion of Park Avenue to Two-way		\$414,000
2	Phase II: Restripe Outer Congress Street		\$111,000
3	Phase III: Conversion of Congress Street to Two-Way		\$1,132,000
4	Phase IV: Ramp Closures	Ramp A	\$57,000
5		Ramps B & D	\$230,000
6		Ramp C	\$35,000
7	Ongoing: Streetscape Improvements	Park Avenue	\$399,000
8		Congress Street	\$1,832,000
		Total:	\$4,210,000

* Note: Costs above do not include changes to the Congress Street. railroad crossing associated with the City's quiet zone work.

Below is an overview of how the cost estimate has been organized and the assumptions on construction phasing. It is assumed that streetscape improvements would be incorporated into each project phase as appropriate.

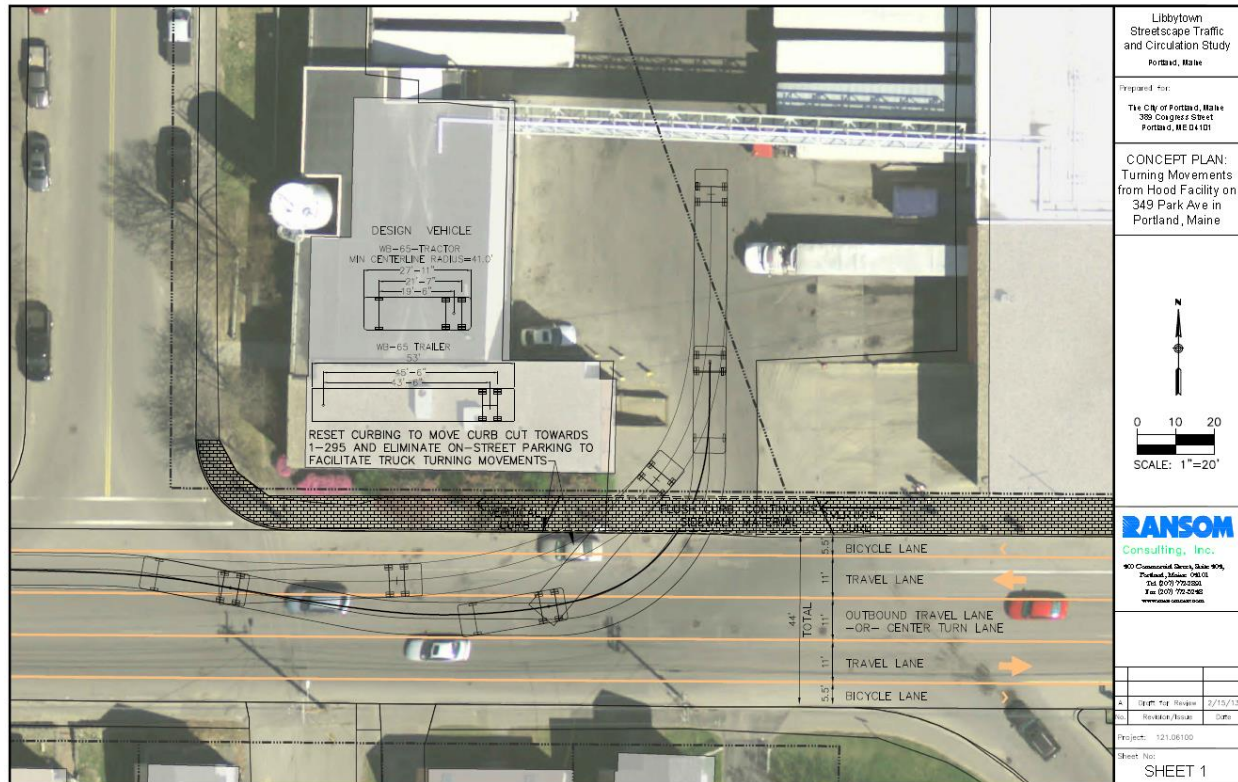
7.8.1 Phase I: Conversion of Park Avenue to Two-Way

Based on our analysis, it appears that Park Avenue could be converted to two-way traffic in the near term with minimal adjustments to existing infrastructure based on the following assumptions.

- Two outbound Park Avenue lanes would be retained from Saint John Street to Congress Street.
- From Marston to Saint John Street, the Park Avenue section would consist of 3 travel lanes. The two outer lanes would be wider and striped with shared roadway stencils. This is a temporary solution which would be replaced with the configuration described on page 21 when Congress Street is converted to two-way and traffic demands on Park Avenue decrease. On-street parking would not be provided in this section.
- From Marston Street to Congress Street, the Park Avenue section would consist of 3 travel lanes and two bike lanes. On-street parking would not be provided in this section, resulting in a loss of approximately 10 parking spaces.
- Signal adjustments at Park Avenue/St John would be required.
- Reconfiguration of the intersection of Marston and Park Avenue would be included.

- Adjustments to Hood's access from Park Avenue, including improving the drainage and reconstructing sidewalk in this area. (See Figure 7.13)
- Reconfiguration of the Park Avenue/Congress Street intersection as shown in the *Near Term Transition of Park Avenue to Two-Way Traffic* sketch would be included.

Figure 7.13: Improvements to HP Hood Entrance



A pavement overlay of Park Avenue is not proposed for the following reasons.

- Underground conduit may need to be installed for street lighting. This should be done before paving.
- The pavement in this area is in reasonable condition
- The stormdrain/sewer in this area appears to be combined and it may make sense to assess opportunities for separation first.

7.8.2 Phase II: Restriping of Outer Congress Street

This phase includes restriping Outer Congress Street (between the FRP and Sewall Street) to provide wider curbside travel lanes along with improvements to existing sidewalks and the intersection of Congress Street and Massachusetts Avenue. This phase is not sequentially dependent on other phases and could be done as funding and other ongoing projects allow.

7.8.3 Phase III: Conversion of Congress Street to two-way

Converting Congress Street to two-way will require adjustments to the Congress Street/St John, Congress Street/Park Avenue and Congress Street/FRP intersections as well as curb extensions, curb adjustments and restriping along Congress Street as outlined in the preferred alternative. During this phase, the remaining improvements that are proposed for Park Avenue would be completed.

7.8.4 Phase IV: Ramp Closures

While the MaineDOT does not support implementation of ramp closures at this time, the City and PACTS will continue to evaluate this option due to its substantial benefits to safety in Libbytown. For cost estimating purposes, it is assumed that ramp closures would be achieved by installing guardrail where the ramps intersect I-295 and by installing sidewalk where the ramps intersect Congress Street. Restriping, signage and other factors are also considered. Costs for permanently removing ramp infrastructure have not been estimated. We suggest that these costs could be part of the future land use discussion if it is decided to make the ramp closures permanent.

Each of the ramps A through D could potentially be closed on a trial basis by using methods for temporary traffic diversions such as jersey barriers and appropriate warnings for a very minimal cost. Impacts on traffic flow at other locations could be monitored, and provide information to determine if a longer term or permanent closure is warranted.

Ramps A and C on Inner Congress Street: The curbline on the south side of Congress Street in this area is irregular due to the ramp merging. Also, the existing curbing is sloped granite. As such, it may make sense to reconstruct the entire curb line from Park Avenue to Huntress Street when Congress Street is converted to two-way traffic. This should be carefully considered when designing sidewalk segments to close these ramps.

Ramps B and D on Outer Congress Street: I-295 southbound is 3 lanes north of Ramp D and 3 lanes south of ramp B but the interstate currently has only 2 lanes between these two ramps. Therefore, in order to maintain capacity, closing ramps B and D will likely require installing a third interstate travel lane between these ramps. For this reason, we have provided a single cost for closing Ramps B and D. Separate costs are provide for Closing Ramps A and C.

7.8.5 Phase V: Construction of Modern Roundabouts on Fore River Parkway intersections

Traffic monitoring should be conducted to determine the possible future need for conversion of Congress Street/Fore River Parkway and Thompsons Point/Fore River Parkway to two-lane modern roundabouts. The total cost for this has not been estimated in detail, but could easily exceed \$5 million. The analysis shows that these intersections would have ample capacity to serve high rates of future traffic growth.



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Paul R. LePage

GOVERNOR

David Bernhardt

COMMISSIONER

Memorandum

To: Libbytown Traffic Circulation and Streetscape Study Team
John Duncan - Executive Director, PACTS
Michael Bobinsky - Director of Public Services, City of Portland

From: Steven Landry - State Traffic Engineer, MaineDOT; Herb Thomson, Ed Hanscom,
Dan Stewart - Bureau of Planning, MaineDOT

cc: Michael Praul - FHWA Maine Division
Mark Rees - City Manager, City of Portland

Date: September 23, 2013

Subject: MaineDOT Comments on Draft Report, (dated July 2013)

During a meeting on July 30, 2013 with the project study team, MaineDOT and FHWA, MaineDOT staff requested an opportunity to review and evaluate the Libbytown Traffic Circulation and Streetscape Study draft report. In recent weeks, MaineDOT staff from the department's Traffic Engineering Division, Transportation Analysis Section, and Bicycle/Pedestrian Program, in coordination with the Federal Highway Administration (FHWA) Maine Division, reviewed the draft study. MaineDOT staff appreciates having had the time to conduct a thorough review and provide its findings to the study team.

MaineDOT staff strongly supports the goal of making the Libbytown neighborhood safer and more inviting for all modes of travel, including for pedestrians and bicyclists. However, based on careful review of the report recommendations, MaineDOT, with the concurrence of FHWA, has determined that the department cannot support or approve the proposals to remove Interstate ramps, as was recommended in the study draft. The main reasons for this determination are faulty assumptions on which the modeling and recommendations are based, and anticipated adverse impacts on the transportation system both within and outside of the study area, including to other Interstate ramps. Key findings of our analysis are as follows:

- The basic assumptions used to develop the recommendations to remove the Interstate ramps are based on faulty travel-demand modeling tabulations, and faulty base-level intersection Levels of Service (LOS).
- The modeling tabulations in the study indicate both a reduction in Vehicle Miles Traveled (VMT), and Vehicle Hours Traveled (VHT) when the ramps are removed. This scenario is counter-intuitive to removal of roadway network segments, including ramps. MaineDOT findings indicate that the base VMT and VHT modeling tabulations were apparently made with incorrect base information, leading to skewed modeling results. The resulting tabulations apparently overestimated reductions and underestimated increases in travel times and distances. The fundamental reasoning for the recommended alternatives is thus evidently based on flawed data.



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- The intersections of St. John Street and Congress Street, and St. John Street and Park Avenue were rated at a LOS *A* in the report, while an independent analysis on an existing transportation improvement project indicates that these intersections are currently functioning at LOS *C* or *D*. Since these intersections are part of the Synchro network used for the modeling, and since the study data related to these intersections in the report do not match existing data, we are not confident that the entire network model is calibrated properly. In addition, the LOS at some of the other intersections does not match actual conditions on the ground.
- Importantly, MaineDOT has determined that even if these flaws in the modeling tabulations did not exist, and even if the conclusions regarding the effects on the study-area network were correct, the adverse effects on the overall transportation system identified in the report, including on multiple intersections and roadway segments, far exceed the potential traffic-calming and other benefits that are envisioned by the proposed removal of the Interstate ramps.
- The report itself concludes that many intersections and streets will see increased traffic levels and degradation of LOS. This increase in traffic at intersections and on roadways can be expected to cause a degradation of pedestrian and bicycling safety and comfort at several intersections, and an overall reduction in quality-of-life in neighborhoods outside the study area. The increased traffic at these intersections can be expected to cause safety issues for all users, including motor vehicles, pedestrians, bicyclists and transit vehicles.
- MaineDOT and FHWA are very concerned about the potential increase in crashes at the remaining ramps that will see increased use. The Fore River Parkway northbound on-ramp is an existing high-crash location, and the proposed removal of Ramp C would increase the volume of traffic on the weave of the I-295 collector-distributor. MaineDOT has serious concerns about the potential for increased crashes at this location. FHWA resources regarding Interstate Access are available at:
<http://www.fhwa.dot.gov/programadmin/fraccess.cfm> and
<http://www.fhwa.dot.gov/design/interstate/pubs/access/access.pdf>
- MaineDOT also has serious concerns with the potential ramifications for incident management due to increased travel distances and congestion. MaineDOT has received feedback from Maine Medical Center, indicating concern for the increased time it will take for emergency responders to get to the Trauma Center.
- Regarding the two-way concepts for Congress Street and Park Avenue, MaineDOT recommends that any future analysis include a properly calibrated Synchro network and a remodeling of existing and future scenarios.
- The stated goal of the study is “to comprehensively assess and make recommendations regarding the multimodal transportation network, circulation pattern, and supporting streetscape within the eastern portion of the Libbytown neighborhood.” MaineDOT recommends that future analysis be initiated to identify streetscape measures that could meet the objectives of the study, potentially including bike lanes, sidewalks,

improved crossings, rectangular rapid-flashing beacons, traffic calming and other options.

MaineDOT strives to work collaboratively with communities across Maine on initiatives that improve the transportation system for all users. The department is supportive of efforts that improve transportation safety and mobility, and preserve the rural, urban and neighborhood contexts in which they exist. In the case of the Libbytown study, we at MaineDOT have concluded that the recommendations in the draft report, most notably including removal of Interstate ramps, are not supported by available data. Further, we cannot envision a realistic scenario in which MaineDOT or FHWA would approve removal of the ramps in the study area, and we do not support further analysis regarding their removal. However, the department stands ready to work with the city of Portland and PACTS to address transportation safety and livability in Libbytown and other neighborhoods in the city.



PORTLAND MAINE

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October 28, 2013

Herb Thomson, Director, Bureau of Transportation Systems Planning
Steven Landry, State Traffic Engineer
Ed Hanscom, Senior Transportation Engineer
Dan Stewart, Bureau of Planning, MaineDOT
State of Maine Department of Transportation
16 State House Station
Augusta, ME 04333-0016

Re: Libbytown Traffic Circulation and Streetscape Study – Sept 23, 2013 Response From
MaineDOT

Dear Herb, Steven, Ed, and Dan:

We appreciate your formal response dated September 23, 2013, following your review of the Draft Libbytown Traffic Circulation and Streetscape Study. However, the City of Portland and PACTS must respectfully disagree on a number of the issues and items relayed in your letter.

Overall, we believe that the work of DuBois & King, Inc. and the rest of the Consultant Team have professionally addressed the priorities identified in the Request for Proposal issued in 2012, including a revisiting of traffic circulation, a more inviting streetscape, and economic development. Their report represents the first step toward a transformational approach to an area long blighted by excessive interstate infrastructure, and we are puzzled by MaineDOT's statement that "we do not support further analysis".

We are also disappointed in the lack of communication by the Department during your nearly two-month review of the report, waiting until all questions were compiled and issuing a memorandum rather than contacting us and/or requesting additional meetings. This result does not appear to be in line with the 'collaborative approach' intent described at the end of your comment letter.

During the entire Study process, members of MaineDOT were kept apprised of the project and its goals. All information with regards to Public Advisory Committee meetings and meeting notes were sent to the then Assistant State Traffic engineer, and the Consultant Team and PACTS/City staff met with MaineDOT on three (3) separate occasions. It should be noted that during the second meeting with MaineDOT Planning Staff on March 21, 2013; no blanket statement as to removal of ramps being off the table was discussed. In fact, planning staff were quite helpful in their suggestions as to which metrics could be provided to support consideration of ramp removal based on safety concerns.

Additionally, the overarching statement that the Department “cannot envision a realistic scenario in which MaineDOT or FHWA would approve removal of the ramps in the study area, and do not support further analysis regarding their removal” suggests either a deficiency in the Department’s and FHWA’s commitment to creative problem solving and improving safety for all users, or a lack of follow-through in the collaborative work model envisioned by the Department and FHWA with cities and MPOs in Maine.

Working with the City and MaineDOT, PACTS identified the problems associated with the antiquated and redundant ramps and included the need to study and plan for ramp elimination in PACTS 2010 long-range transportation plan, Destination Tomorrow (2010). This plan was developed in partnership with the MaineDOT and accepted and adopted by both MaineDOT and FHWA (Appendix F, Destination Tomorrow 2010, Page F-1 Item 2.). The Libbytown Traffic Circulation and Streetscape Study, in which the MaineDOT and FHWA were involved throughout the process as indicated above, has been conducted and is consistent with this intent in PACTS’ long range plan.

Our letter will provide your comments in order followed by responses and additional discussion. In addition, attached with this letter is a response memorandum from DuBois & King, Inc. (D&K) which we feel adequately satisfies the technical questions raised during MaineDOT’s analysis.

***Comment 1:** The basic assumptions used to develop the recommendations to remove the Interstate ramp are based upon faulty travel-demand modeling tabulations, and faulty base-level intersection Levels of Service (LOS).*

Response: Please see attached memorandum from D&K. Additional comments follow in this letter as well.

***Comment 2:** The modeling tabulations in the study indicate both a reduction in Vehicle Miles Traveled (VMT), and Vehicle Hours Traveled (VHT) when the ramps are removed. This scenario is counter-intuitive to removal of roadway network segments, including ramps. MaineDOT findings indicate that the base VMT and VHT modeling tabulations were apparently made with incorrect base information, leading to skewed modeling results. The resulting tabulations apparently overestimated reductions and underestimated increases in travel time and distances. The fundamental reasoning for the recommended alternatives is thus evidently based on flawed data.*

Response: The memorandum from D&K does note that the change in both VMT and VHT should have been based upon a comparison to the enhanced model baseline, which actually results in the changes shown in their letter. Based on this updated comparison, it is important to note two things about the changes in miles and hours traveled. The first is that the overall changes show negligible changes in these measures, from a percentage standpoint. This trend speaks clearly to the belief of both the City of Portland and PACTS that the existing transportation network has significant redundancy, and that the urban street system can easily absorb these changes in travel due to ramp elimination.

Second, the single largest impact to reducing both VMT and VHT would be the conversion of Park Avenue and Congress Street east of I-295 to two-way traffic flow. This is completely understandable

from a layperson's perspective, as drivers would not have to use multiple streets not on a key desire line in order to reach a destination.

Even if the changes were found to be more on the order of a larger amount, say five or even ten percent (again, unlikely based upon the density of the street network and the availability of remaining highway access following possible ramp closure), it is our opinion that so long as the local street network remained viable, perhaps measured by a lack of queuing from one intersection to the next, for example, that this tradeoff would be satisfactory.

***Comment 3:** The intersections of St. John Street and Congress Street, and St. John Street and Park Avenue were rated at a LOS 'A' in the report, while an independent analysis on an existing transportation improvement project indicates that these intersections are currently functioning at LOS 'C' or 'D'. Since these intersections are part of the Synchro network used for modeling, and since the study data related to these intersections in the report do not match existing data, we are not confident that the entire network model is calibrated properly. In addition, the LOS at some of the other intersections does not match actual conditions on the ground.*

Response: Please note the response from D&K noting an adjustment to phasing on the two intersections identified in this comment. Our review of the updated volumes and our own recent modeling of these intersections in Synchro confirm a LOS 'C'. However, we would be interested to know the origin of the volumes referenced by the Department in the "independent analysis." It is our understanding that these turning movement counts for Libbytown are the first conducted in a number of years, possibly even before the opening of Fore River Parkway (FRP), which would result in exaggerated total entering volumes for today's operational realities. We would also request the backup data from the Department for the other intersections, or even which intersections are being alluded to.

***Comment 4:** Importantly, MaineDOT has determined that even if these flaws in the modeling tabulations did not exist, and even if the conclusions regarding the effects on the study area network were correct, the adverse effects on the overall transportation system identified in the report, including the multiple intersections and roadway segments, far exceed the potential traffic calming and other benefits that are envisioned by the proposed removal of the ramps.*

Response: The City and PACTS wish to request tabulation from the Department of the adverse effects, as they are not noted in this broad assertion. Are these effects pedestrian, bicycle, transit, or vehicular? This point is simply not supported by any specific data.

***Comment 5:** The report itself concludes that many intersections and streets will see increased traffic levels and degradation of LOS. This increase in traffic at intersections and on roadways can be expected to cause a degradation of pedestrian and bicycling safety at several intersections, and an overall reduction in quality of life in neighborhoods outside the study area. The increased traffic at these intersections can be expected to cause safety issues for all users, including motor vehicles, pedestrians, bicyclists and transit vehicles.*

Response: The City and PACTS would be interested to see the documentation showing a positive relationship between both vehicular delay and decreased safety for all modes of traffic. Decreased vehicular delay can generally be linked with increased vehicular speed, thus greatly increasing the

potential for severe injury or fatality. While we would not endorse creating conditions with significant amounts of time where a location or corridor are operating over capacity, in this case, we believe that the network can continue accommodating vehicular traffic, and can better accommodate other modes, with the potential for two-way street conversions and ramp removal.

***Comment 6:** MaineDOT and FHWA are very concerned about the potential increase in crashes at the remaining ramps that will see increased use. The Fore River Parkway northbound on-ramp is an existing High Crash Location, and the proposed removal of Ramp C would increase the volume of traffic on the weave of the I-295 collector-distributor. MaineDOT has serious concerns about the potential for increased traffic at this location.*

Response: The City of Portland and PACTS concur that safety is of the utmost concern for this and all areas in the local and regional transportation network. It is our opinion that part of the deficiency of the FRP northbound on-ramp where it meets the collector-distributor is a lack of channelization features at the initial access point at the southern end of this feature. As such, while there are two travel lanes at this point, vehicles often cross immediately into one or the other. Placement of a small, relatively short median (say 100 feet) would largely eliminate this initial conflict and leave 400 feet for the actual weave maneuver. It is also recommended that this collector-distributor be evaluated for a reduced speed limit, such as 40 or 45 mph.

However, this Comment creates broader concerns on the part of the City and PACTS, as it in no way speaks to the other safety concerns at the other ramps, which are generally not constructed to current FHWA design criteria with regards to curvature and ramp separation. The draft report shows that MaineDOT's crash data indicates a high rate of crashes at the four ramps discussed for potential removal, with severe injury crashes at two of these locations.

***Comment 7:** MaineDOT also has serious concerns with the potential ramifications for incident management due to increase travel distances and congestion. MaineDOT has received feedback from Maine Medical Center, indicating concern for the increased time it will take emergency responders to get to the Trauma Center.*

Response: The City, PACTS and the Consultant Team do not agree with this assessment on the part of MMC, and believes that a fairly simple evaluation of travel distances bear out our reasoning. For emergency vehicles headed north on I-295 traveling past the Exit 4 off-ramp, the current use of Exit 5 to Congress Street results in a distance of approximately 2.1 miles to the intersection of Congress Street and Bramhall Street, which leads directly to the ER access to MMC's Trauma Center. Use of Exit 4, the Veteran's Bridge, and Valley Street result in a distance of approximately 2.2 miles to get to the Trauma Center. This is a difference of five percent, which should be easily accounted for in response times. Furthermore, Congress Street is frequently impacted by the at-grade Pan Am crossing which carries significant freight, and now an increasing volume of passenger traffic, which makes response times unpredictable. The full recommendation from the Study would allow for access by this route as well as Park Avenue, another corridor not impacted by rail, as Pan Am's mainline has an overpass at this location.

MaineDOT has not indicated that they agree with MMC's assessment, and further, appears to have specially selected their organization out of all constituents near the Libbytown area. We were disappointed that at our final meeting with the Department that we were in no way informed of the

decision to include MMC, and to exclude all other parties. As such, the City was given no choice but to respond to other interested parties' frustrations that they were not included in the final meeting. We would hope that any future meetings with the Department would be more collaborative.

Comment 8: *Regarding the two-way concepts for Congress Street and Park Avenue, MaineDOT recommends that any future analysis include a properly calibrated Synchro network and a remodeling of existing and future scenarios.*

Response: Both the City and PACTS anticipate that any final plan to adjust intersection geometries and convert Congress Street and Park Avenue to two-way flow would be accompanied by counts, updated Synchro modeling, and design plans. Again, this study was completed in order to determine if changes to street flow and ramp adjustments were worth additional consideration. Actual construction would require an additional process.

Comment 9: *The stated goal of the study is "to comprehensively assess and make recommendations regarding the multimodal transportation network, circulation pattern and supporting streetscape within the eastern portion of the Libbytown neighborhood." MaineDOT recommends that future analysis be initiated to identify streetscape measures that could meet the objectives of the study, potentially including bike lanes, sidewalks, improved crossings, rectangular rapid-flashing beacons, traffic calming, and other options.*

Response: As discussed in D&K's response memo, the report itself makes numerous recommendations for street amenities, going so far as to provide photo simulations to illustrate these changes. In addition, the off-site work associated with Thompson's Point, administered by MaineDOT, will make street improvements to about a dozen streets, ranging from RRFB installation, a multi-use pathway, traffic calming, and ADA upgrades. MaineDOT is also improving the streetscape through a paving project on St. John and Park Avenues this fall, and the City is updating streetscapes on other parts of St. John Street and Valley Street as this letter is being written. The City has an additional streetscape improvement going out to bid for Park Avenue west of St. John Street that includes improved and widened sidewalk and bollard lighting underneath the Pan Am overpass. Lastly, a project will likely be out to bid next year that will provide a path connection from Fore River Parkway Trail to Frederick Street, which includes an RRFB. This area remains a top priority for Portland to improve streetscapes, which was a large reason that PACTS funded this very study.

Comment 10: *MaineDOT strives to work collaboratively with communities across Maine on initiatives that improve the transportation system for all users. The Department is supportive of efforts that improve transportation safety and mobility, and preserve the rural, urban and neighborhood contexts in which they exist. In the case of the Libbytown study, we at MaineDOT have concluded that the recommendations in the draft report, most notably including removal of Interstate ramps, are not supported by available data. Further, we cannot envision a realistic scenario in which MaineDOT or FHWA would approve removal of the ramps in the study area, and we do not support further analysis regarding their removal. However, the Department stands ready to work with the City of Portland and PACTS to address the transportation safety and livability in Libbytown and other neighborhoods in the City.*

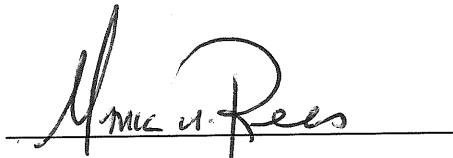
Response: A large part of the initiative behind the Libbytown study was the destruction of neighborhood context by the I-295 ramps. We find that the Department's statements in this comment

are self-conflicting in this regard. The City and PACTS are well underway with various streetscape improvements.

This response, and the opinions to date from MaineDOT do not strike PACTS and the City as collaborative, as they indicate that the Department wishes for substandard and unsafe interstate ramps bisecting a neighborhood to remain, and has no interest in revisiting the topic. We simply find this viewpoint unacceptable and will continue to work toward our goals in whatever channels or manner we find feasible.

In closing, we feel that despite our differences, we generally continue to have positive dialogue with the Department, as was most recently made clear in our quarterly meeting in Augusta on October 24, 2013. We are hopeful that we can work in the short-term on local street changes in the Libbytown with input from the Department, and revisit the topic of the I-295 ramps in the longer term.

Respectfully,

A handwritten signature in black ink, appearing to read "Mark Rees", written over a horizontal line.

Mark Rees, City Manager

City of Portland

A handwritten signature in black ink, appearing to read "John Duncan", written over a horizontal line.

John Duncan, Executive Director

PACTS

Cc: Michael Bobinsky, Director of Public Services
Katherine Earley, Engineering Services Manager
Jeremiah Bartlett, Transportation Systems Engineer
Carl Eppich, Senior Planner, PACTS
Michael Praul, FHWA Maine Division



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16 October 2013

Jeremiah Bartlett, Transportation Systems Engineer
Department of Public Services
City of Portland
55 Portland Street
Portland, ME 04101

Carl Eppich, Senior Transportation Planner
PACTS
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Re: MaineDOT comments on Libbytown Draft Report dated September 23, 2013

Dear Jeremiah and Carl,

Throughout the Libbytown Traffic Circulation and Streetscape Study process, we have been striving to coordinate and engage in discussion with MaineDOT and FHWA. We participated in three meetings with MaineDOT and FHWA staff, and endeavored to provide the data and analysis that they requested. We are in receipt of a copy of a letter from the Maine DOT that provides their comments on our draft report, and offer the following in response.

Maine DOT Comment #1:

The basic assumptions used to develop the recommendations to remove the interstate ramps are based on faulty travel-demand modeling tabulations, and faulty base-level intersection Levels of Service (LOS).

The recommendations contained in our report were not based on travel-demand modeling tabulations and level of service analysis. This data was provided in our study at MaineDOT's request, but this data was not the basis for our recommendations. This study focused on improving conditions for non-auto modes, livability and economic vibrancy. The report's recommendations were derived from community input, multimodal analysis and the urban and streetscape design expertise of our project team. Travel demand modeling was conducted to assess the effects on the regional transportation system, and level of service analysis was conducted at key intersections in the study area to assess the future operations and capacity. Our draft report did contain several inconsistencies in the base year modeling, which are discussed in more detail in the next two responses. Our final report will include corrected travel demand tabulations

and base levels of service. However the report's overall recommendations and conclusions will remain the same as those in the draft report.

Maine DOT Comment #2:

The modeling tabulations in the study indicate both a reduction in Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) when the ramps are removed. This scenario is counter-intuitive to removal of roadway network segments, including ramps. MaineDOT findings indicate that the base VMT and VHT modeling tabulations were apparently made with incorrect base information, leading to skewed modeling results. The resulting tabulations apparently overestimated reductions and underestimated increases in travel times and distances. The fundamental reasoning for the recommended alternatives is thus evidently based on flawed data.

The model results of VMT and VHT were not the “fundamental reasoning” for the recommended alternative. Rather, the recommendations were based on the project goals to improve multimodal transportation, livability and economic vibrancy of the study area. The travel demand modeling was conducted to provide supplemental information on the effects that these recommendations would have on the regional transportation network. The PACTS model was significantly enhanced as part of this work so that it better reflects the complexity and multimodal patterns currently observed in Portland. Using the enhanced model, the ramp removals and two-way street conversions were tested, as were the alternative scenarios that included various combinations of ramp removals and two-way conversions. The Draft report contained erroneous VMT and VHT base volumes in several tables, and this will be corrected in the final report. The corrected tabulations show that the reports recommended alternative will have a very minor increase of 0.2% in VMT, a small reduction of 0.01% in VHT. However, to reiterate, our recommendations were not based on model results, but rather were based on design recommendations to meet the project's primary goals. Revised VMT and VHT results are attached to this letter, and will be included in the final report.

Maine DOT Comment #3:

The intersections of St. John Street and Congress Street, and St. John Street and Park Avenue were rated at a LOS A in the report, while an independent analysis on an existing transportation improvement project indicates that these intersections are currently functioning at LOS C or D. Since these intersections are part of the Synchro network used for modeling, and since the study data related to these intersections in the report do not match existing data, we are not confident that the entire network model is calibrated properly. In addition, the LOS at some other intersections does not match actual conditions on the ground.

The Synchro results cited in the report utilized incorrect assumptions on the intersection signals current phasing and timing pattern. This will be corrected in the final report. Our revised analysis indicates that the AM and PM peak hour LOS is C for both intersections, which is consistent with other recent studies. Our results for other intersections, including the Fore River Parkway/Congress and Fore River Parkway/Thompson's Point analyses are consistent with recent independent studies of these intersections associated with the Thompson's Point development. We conducted the Synchro analysis following the

Highway Capacity Manual methodology, so these results are not affected by calibration assumptions. We have provided our Synchro files for the report recommendations to MaineDOT.

Maine DOT Comment #4:

Importantly, MaineDOT has determined that even if these flaws in the modeling tabulations did not exist, and even if the conclusions regarding the effects on the study-area network were correct, the adverse effects on the overall transportation system identified in the report, including on multiple intersections and roadway segments, far exceed the potential traffic-calming and other benefits that are envisioned by the proposed removal of the interstate ramps.

It is not clear how the Maine DOT has reached this determination as they did not provide any supporting analysis. Our report includes a multimodal analysis that shows very significant improvement for pedestrian and bicycle modes of transportation which justifies possible minor adverse effects on vehicular traffic. Our modeling of V/C ratios of the study area network indicates that there will be sufficient vehicular capacity if the recommendations are implemented. The MaineDOT comment illustrates a vehicular-centric view that gives more weight to vehicular conditions than to bicyclists, pedestrians, transit users, and the community priorities.

Maine DOT Comment #5:

The report itself concludes that many intersections and streets will see increased traffic levels and degradation of LOS. This increase in traffic at intersections and on roadways can be expected to cause a degradation of pedestrian and bicycling safety and comfort at several intersections, and an overall reduction in quality-of-life in neighborhoods outside the study area. The increased traffic at these intersections can be expected to cause safety issues for all users, including motor vehicles, pedestrians, bicyclists and transit vehicles.

The scope of our traffic analysis was limited to the area that would be most affected by the changes proposed. The regional modeling of the preferred alternative showed increased volumes on other corridors, notably Park Avenue, lower St John St, and Veteran's Bridge. Recent traffic counts and model results for St. John Street indicates that this corridor is underutilized and over designed, and should be able to absorb additional traffic without undue congestion. Park Avenue is currently the subject of other studies, which could incorporate the volume changes as they go forward. St. John and Park Avenue are major commercial corridors. The modeling does not show any pattern of increased volume on neighborhood residential streets.

This comment also suggests that higher traffic volumes are correlated with degradation of pedestrian and bicycling traffic. This assertion is not supported by any data, nor by current understanding and practice of bicycle and pedestrian design. Higher traffic volumes on urban streets typically result in lower speeds, and lower speeds are safer for pedestrians and bicyclists. Some of the most congested cities in the world are also the most walkable, safe and welcoming to pedestrians. Furthermore, the City of Portland is undertaking a variety of projects to improve safety of all users on corridors that might see increased volumes from the implementation of the report's recommendations.

Maine DOT Comment #6:

MaineDOT and FHWA are very concerned about the potential increase in crashes at the remaining ramps that will see increased use. The Fore River Parkway northbound on-ramp is an existing high crash location, and the proposed removal of Ramp C would increase the volume of traffic on the weave of the I-295 collector-distributor. MaineDOT has serious concerns about the potential for increased crashes at this location.

Safety for all users should be the highest priority when considering the alternatives, and was a primary factor in the development of the study recommendations. The removal of ramps will essentially eliminate a number of existing high crash locations, although some other high crash locations may see increases in volume. In regards to the Fore River Parkway northbound on-ramp, the model shows an overall decrease in volume, not an increase as asserted by MaineDOT. The model shows that the on-ramp will increase, but the collector-distributor decreases by a larger amount, such that the volume in the weave section, which is also a high crash location, decreases. More details on how the report recommendations could affect HCLs are attached to this letter.

Maine DOT Comment #7:

MaineDOT also has serious concerns with the potential ramifications for incident management due to increase travel distances and congestion. MaineDOT has received feedback from Maine Medical Center, indicating concern for the increased time it will take for emergency responders to get to the Trauma Center.

The Maine Medical Center was a member of the Project Advisory Committee, and representatives attended several of the group's meetings. Unfortunately these concerns were not expressed to the committee, nor to City, nor to the consultant team, so we were unable to address them during the study's public outreach process. In our discussions with the representatives attending the Project Advisory Committee meetings, reliability of response times is as important as length of response time. Emergency responders are currently affected by the at-grade railroad crossing on Congress Street which can make response times highly unpredictable. Converting Park Avenue to two-way operation is of great benefit to the consistency and reliability of response times. A response route along St John Street could be established that would include signal preemption to assure more consistent and faster response times. It is also important to weigh the response times against the overall safety benefits for the roadway network that will result from the elimination of numerous high crash locations, and the slower steadier traffic flow that result from two-way conversion.

Maine DOT Comment #8:

Regarding the two-way concepts for Congress Street and Park Avenue, MaineDOT recommends that any future analysis include a properly calibrated Synchro network and a remodeling of existing and future scenarios.

Our existing conditions have been remodeled with the correct signal timings and phasing for the St. John corridor intersections. Our analysis relies on Synchro's Highway Capacity Manual methodology to assess the volume-to-capacity, potential delay and other measures, and does not as such require calibration. It should be noted that we would expect significant changes in behavior and driver perception with a two-

way street conversions and the other changes proposed. A model that is calibrated for simulating one-way operation and higher speeds would be of limited value in testing conversion to two-way operation.

Maine DOT Comment #9:

The stated goal of the study is “to comprehensively assess and make recommendations regarding the multimodal transportation network, circulation patterns, and supporting streetscape within the eastern portion of the Libbytown neighborhood.” MaineDOT recommends that future analysis be initiated to identify streetscape measures that could meet the objectives of the study, potentially including bike lanes, sidewalks, improvement crossings, rectangular rapid-flashing beacons, traffic calming and other options.

We agree that these measures can help to address the stated goals of the study. Our recommendations include design features such as bike lanes, sidewalks, improved crossings, RRFBs, traffic calming and other options.

Maine DOT Comment #10:

MaineDOT strives to work collaboratively with communities across Maine on initiatives that improve the transportation system for all users. The department is supportive of efforts that improve transportation safety and mobility, and preserve the rural, urban and neighborhood contexts in which they exist. In the case of the Libbytown study, we at MaineDOT have concluded that the recommendations in the draft report, most notably including removal of Interstate ramps, are not supported by available data. Further, we cannot envision a realistic scenario in which MaineDOT or FHWA would approve the removal of the ramps in the study area, and we do not support further analysis regarding their removal. However, the department stands ready to work with the city of Portland and PACTS to address transportation safety and livability in Libbytown and other neighborhoods in the city.

The street network in the Libbytown area is broken. This area is a vital corridor that connects the Portland Transportation Center and Thompson’s Point with Portland’s downtown core on the peninsula. The uncontrolled interstate ramps are incompatible with multimodal street activity. The recommendations in our report are supported by the following:

- The multimodal level of service analysis that indicates dramatic improvement in the conditions for pedestrians and bicyclists.
- Two way street operation will reduce speeds, improving the safety of the street network’s most vulnerable users: pedestrians and bicyclists. Two way streets will also have significant improvement for transit routes and users.
- The streetscape improvements recommended in the report will greatly enhance safety, character, and livability in the Libbytown neighborhood.
- The traffic analysis shows that that the projected volumes can be accommodated with the proposed improvements, with reasonable conditions in terms of level of service, delay, and volume-to-capacity ratios as calculated by the Highway Capacity Manual.

October 16, 2013

- Conditions at HCL locations within the study area would be expected to improve due to either reductions in volume or elimination of conflicts. HCL locations outside the study area have not been addressed and may warrant additional consideration, but any impacts should be weighed against the substantial safety benefits that are shown in the study area.

The limitations of the project scope and budget do not allow us to address every question and concern of MaineDOT and FHWA. The following additional analysis may be warranted:

- Extend the traffic analysis beyond the existing study area to include the corridors that may see significant increases in traffic, such as Park Ave and lower St John.
- Conduct a more detailed analysis of HCL's that may see an increase in volume. Develop design recommendations for any locations that are not already being addressed in planned projects.
- Analysis of emergency response times and consideration of design measures, such as signal pre-emption along Park Avenue or St. John Street that would improve response times.

Thank you for your consideration of the above, and please let me know if you would like to discuss this further,

Very Truly Yours,
DUBOIS & KING

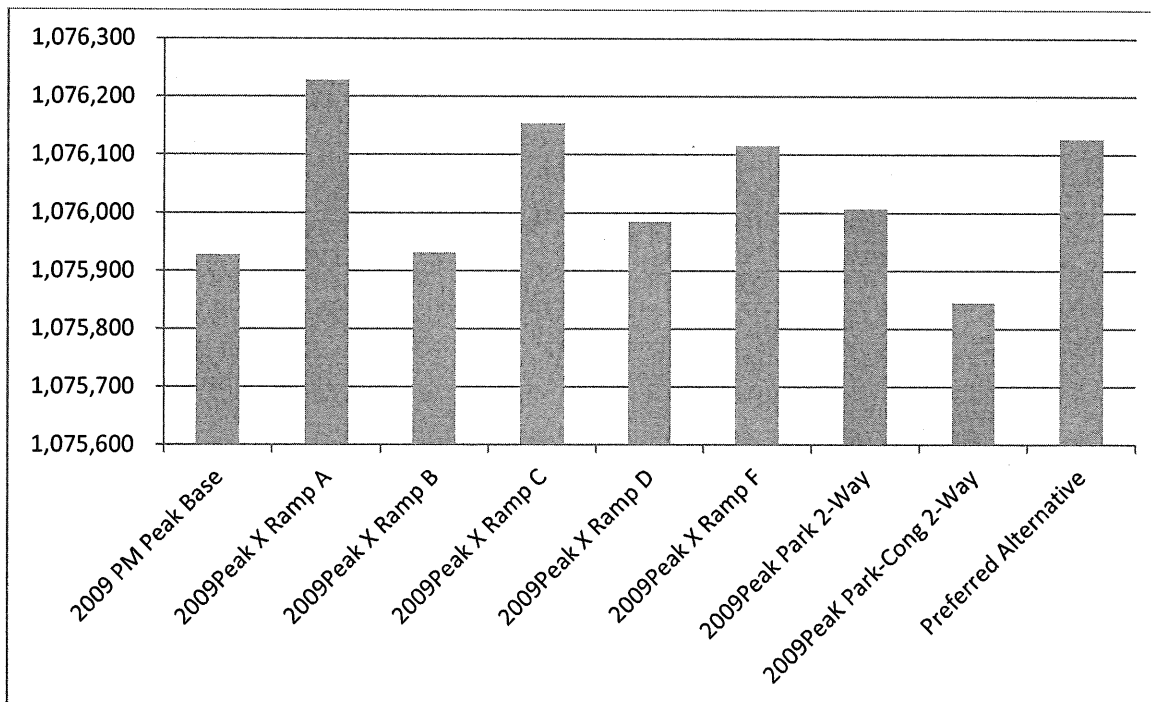
A handwritten signature in cursive script, appearing to read "Lucy Gibson".

Lucy Gibson, P.E.

Attachment 1: Revised VMT and VHT Tabulations

The following table and graph are revised to reflect the correct base VMT data. .

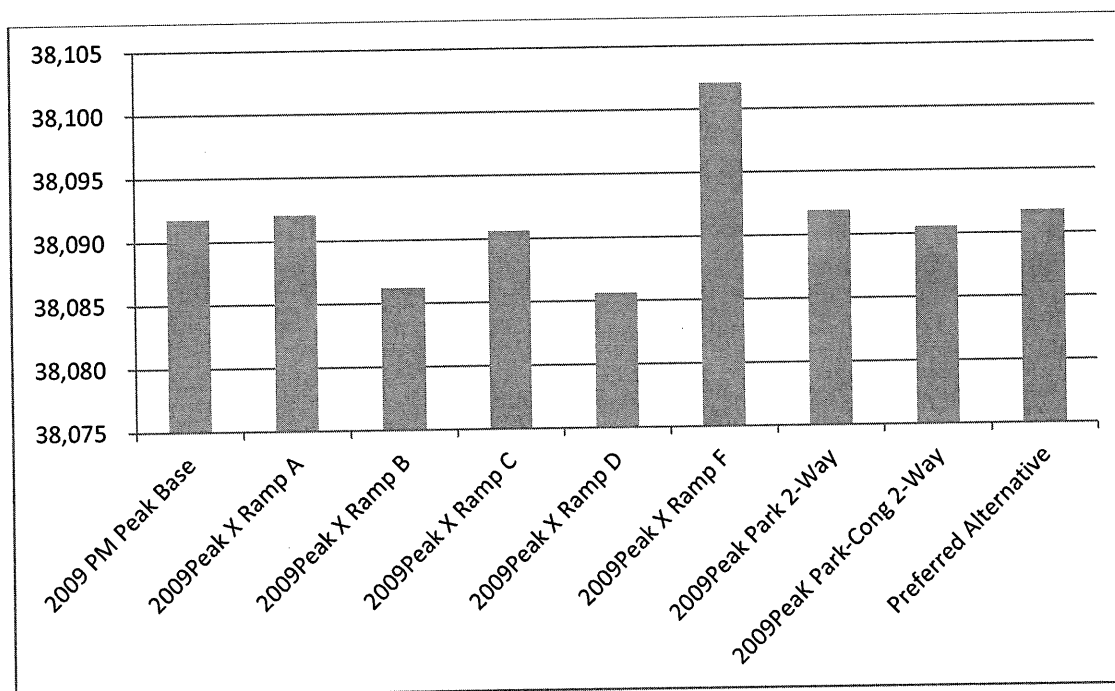
Scenario	VMT	% Change from Base
2009 PM Peak Base	1,075,928	
2009Peak X Ramp A	1,076,228	0.0279%
2009Peak X Ramp B	1,075,931	0.0003%
2009Peak X Ramp C	1,076,154	0.0211%
2009Peak X Ramp D	1,075,985	0.0053%
2009Peak X Ramp F	1,076,115	0.0175%
2009Peak Park 2-Way	1,076,007	0.0074%
2009Peak Park-Cong 2-Way	1,075,845	-0.0076%
Preferred Alternative	1,076,127	0.0186%



These show that most of the study recommendations would individually result in small increases of regional vehicle-miles-traveled, with the exception of converting both Park and Congress to two-way streets, which results in a small reduction. The preferred alternative is modeled to increase regional VMT by 0.019%, which is very small given the accuracy of the model.

Vehicle-hours traveled (VHT) was also derived from the model, and the results are shown in the table and chart that follows.

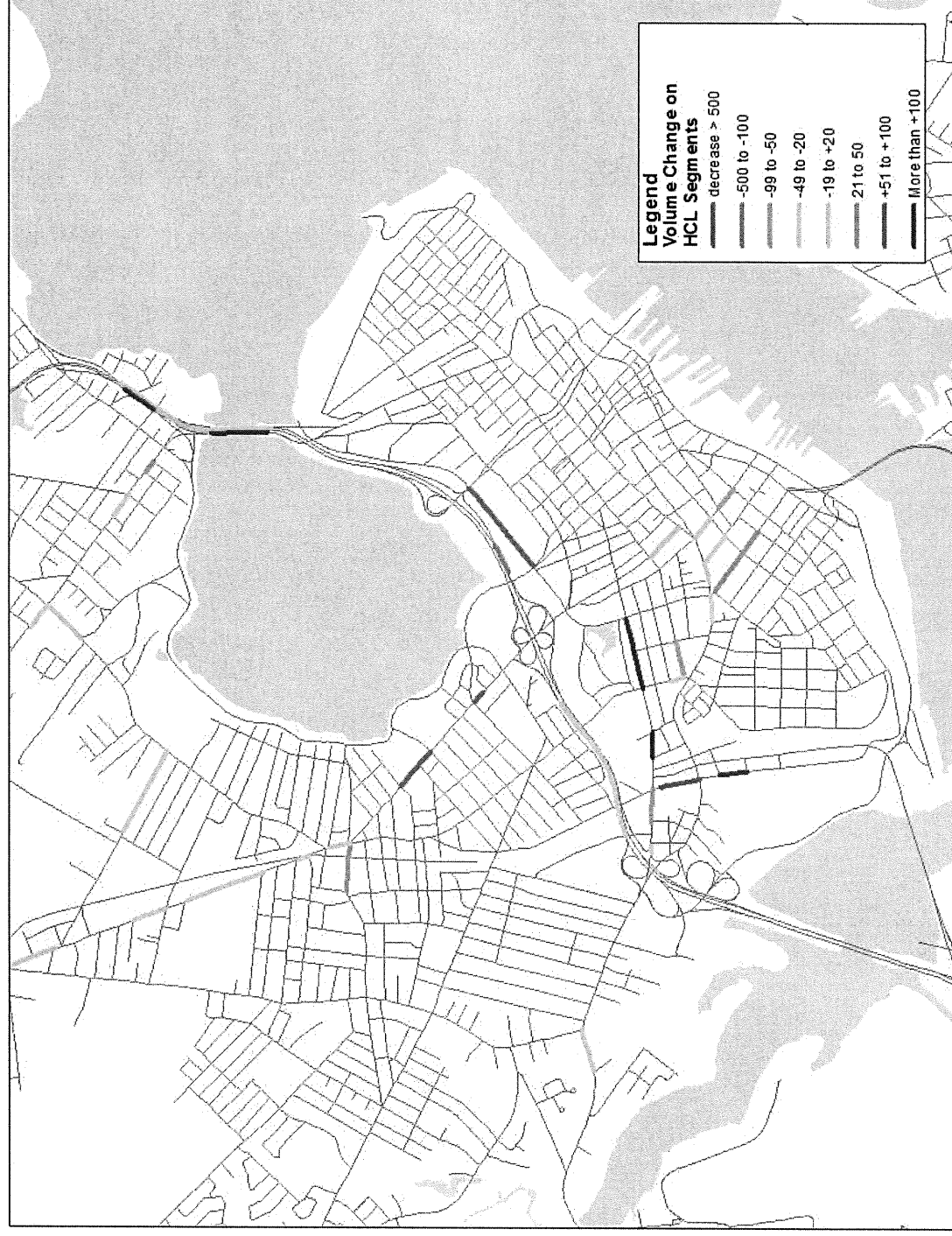
2009 PM Peak Scenario	VHT	% Change from Base
Base	38,092	
X Ramp A	38,092	0.0006%
X Ramp B	38,086	-0.0146%
X Ramp C	38,091	-0.0030%
X Ramp D	38,086	-0.0162%
X Ramp F	38,102	0.0270%
Park 2-Way	38,092	0.0003%
Park & Cong 2-Way	38,091	-0.0033%
Preferred Alternative	38,092	0.0000%



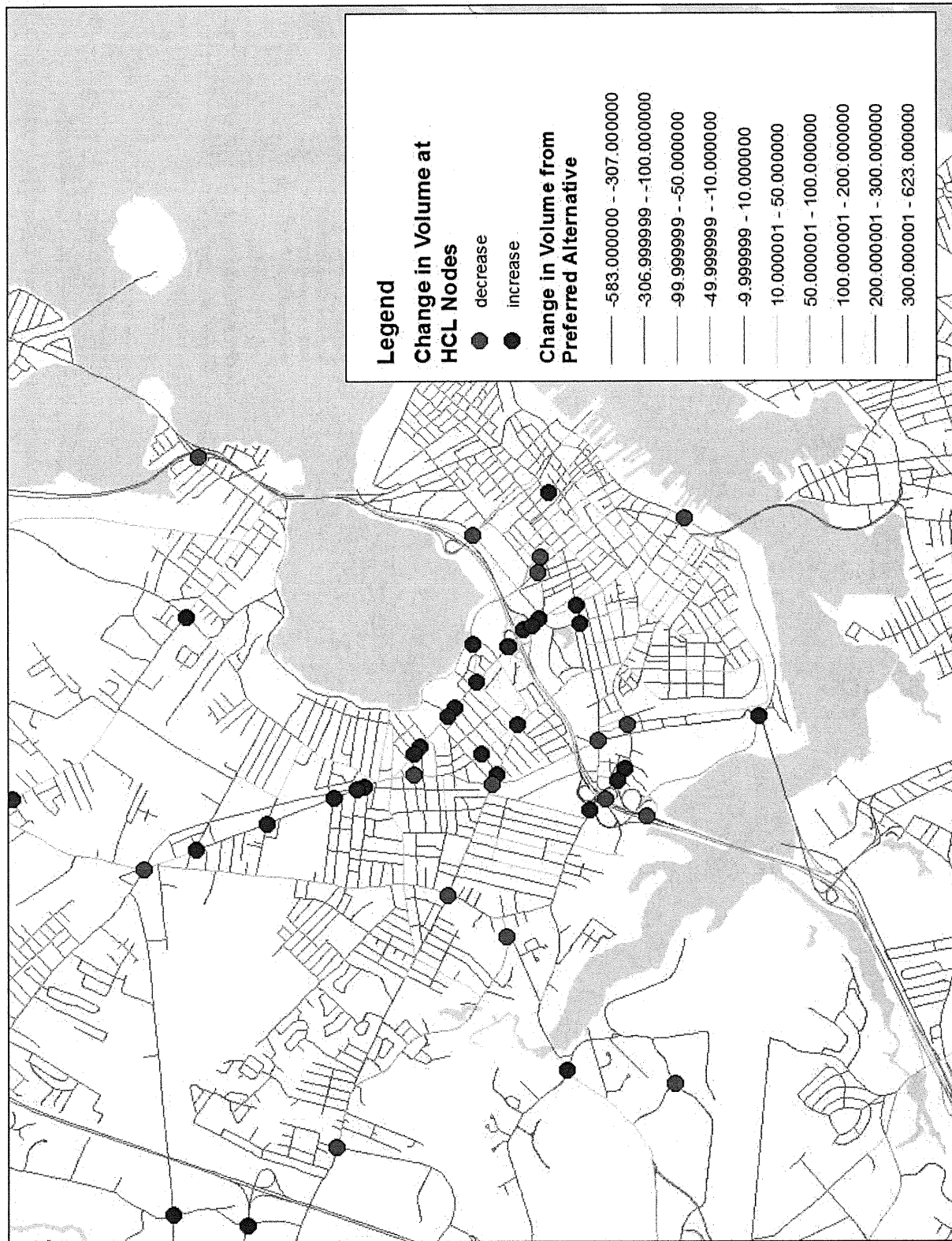
These results show that most scenario components as well as the preferred alternative result in either little change or a slight decrease in VHT. Removal of ramp F has a slight increase in VHT. These changes in VHT shown by the model are very minor relative to the model's accuracy, and indicate little change in the performance of the regional transportation network will result from implementation of the preferred alternative.

Attachment 2: HCL Analysis

The following figure shows the projected modeled traffic volume changes on HCL road segments. Segments in shades of green and yellow will have decreases in volumes, and segments with orange and red will have increases in volumes.

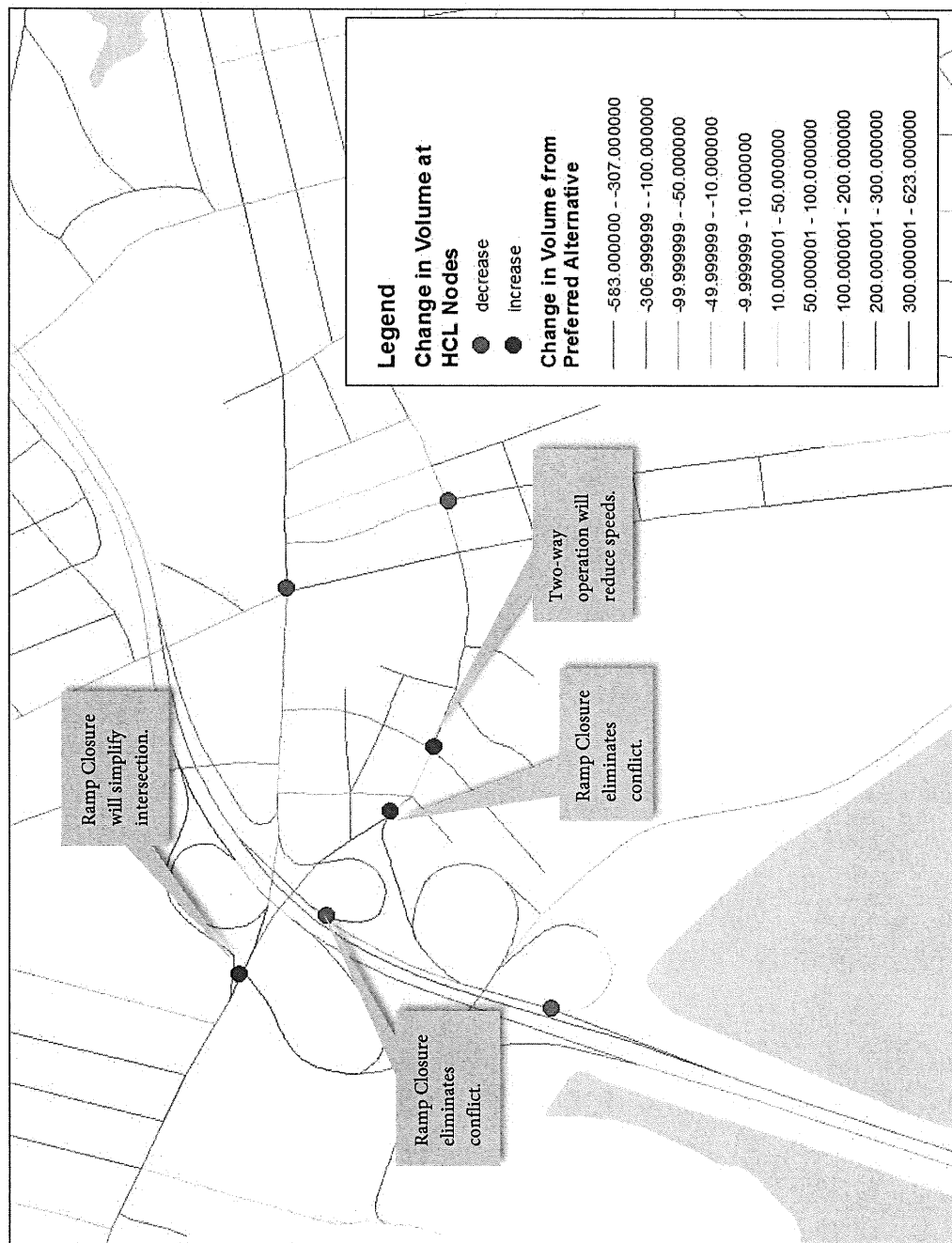


The following figure shows HCL nodes that our preliminary analysis indicates will see increase (red) or decreases (green) in modeled traffic volumes.



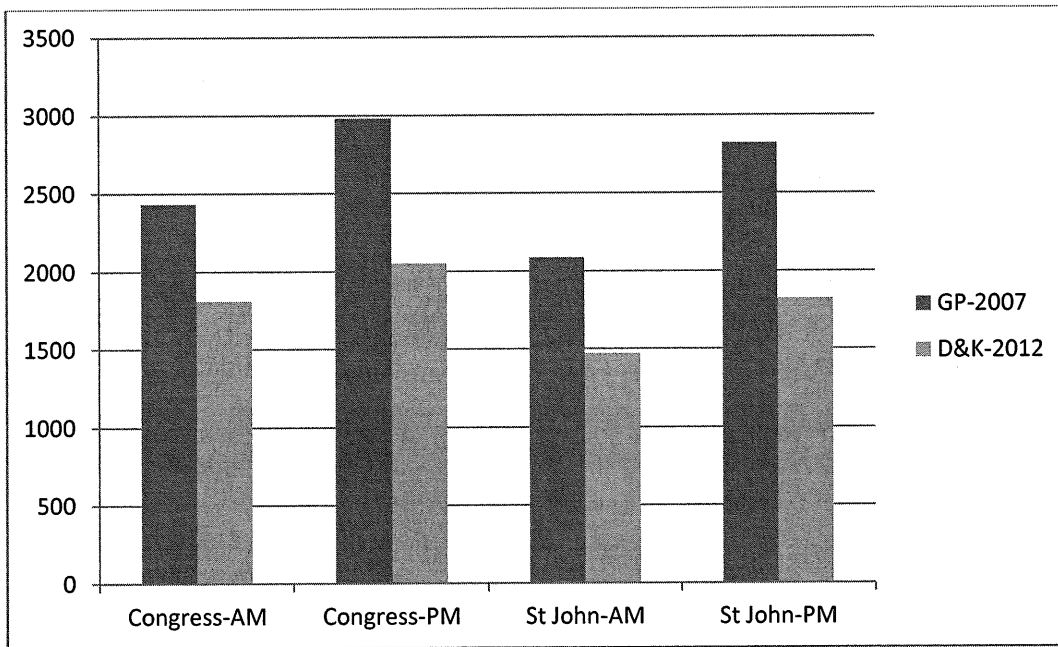
The following figure provides the same information, but focused on the study area. Of particular note is that the HCL that is located at the merge point of the I-295 northbound on ramp from Fore River Parkway will actually see a decrease in volume. The model shows a higher volume on the ramp, but lower volumes on the Collector-distributor more than compensate, so that this HCL node has an overall decrease in volume.

While a conclusive analysis of all of these locations is not within our current scope, this screening analysis indicates that there will be mixed effects on volumes at HCL nodes. In particular, the model results indicate that the Fore River Parkway on-ramp would have lower overall volumes due to lower collector-distributor volumes. It is recommended that a more detailed analysis of the effects of traffic changes on HCL locations be conducted as further implementation steps are undertaken.

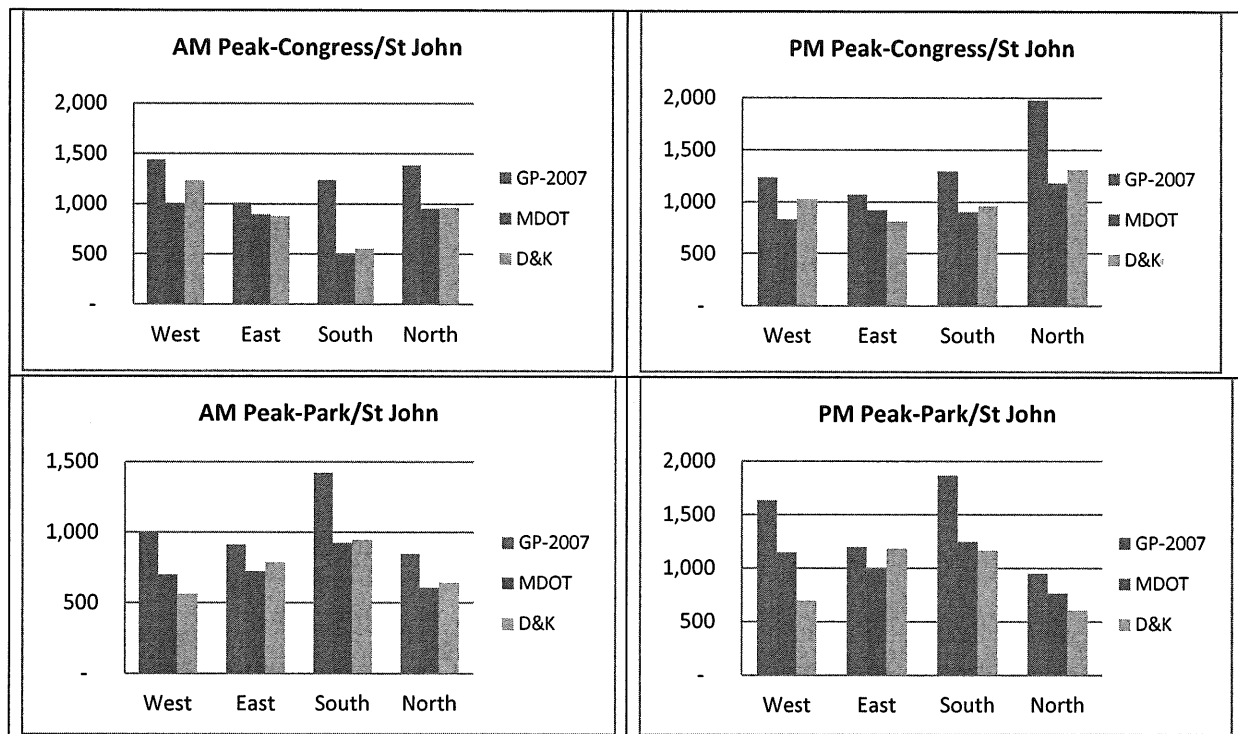


Attachment 3: Base year LOS Analysis

The levels of service for the a.m. and p.m. peak hour were recalculated for the intersections of Congress-St. John and Park-St. John with signal timing and phasing that more closely reflects existing operations. It should be noted that our investigation of traffic counts and trends shows that traffic has declined at these intersections since the construction of the Fore River Parkway, as shown in the charts below.



In addition, we validated our counts with recent Maine DOT ATR Counts that were conducted on each approach, which showed our counts were consistent with the MaineDOT data. The following charts show this comparison.



The revised level of service results for the base year are summarized below and attached to this document. The primary changes were related to signal phasing.

Intersection	AM Peak LOS	PM Peak LOS
Congress-St. John	C	C
Park-St. John	C	C

The draft report had higher levels of service reported for the base year.

Solid Waste Scorecard - 11/14/2014

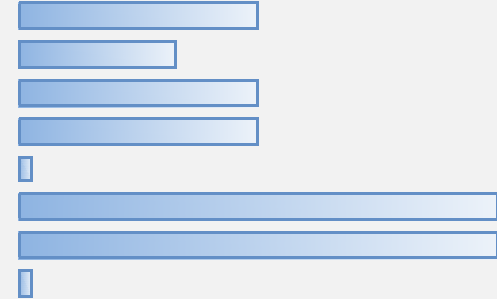
RESIDENTIAL

GOAL: The Solid Waste Task Force challenged the City to increase the municipal recycling rate by 2% per year to achieve a 50% recycling rate by 2020. They recommended several strategies aimed at making recycling more convenient for residents, provide opportunities for source reduction, enforce solid waste ordinances and improve the efficiency of the City's operations.

STRATEGIES

- Educate residents about resource conservation and reducing waste generation
- Make reusable durable good swap programs available
- Market cart-based recycling collection
- Relocate the silver bullet recycling containers
- Explore reduced rates or no charge for reusable and recyclable material at Riverside Recycling Facility
- Implement a fee-based curbside bulk waste collection program
- Enforce the solid waste ordinances through the Sanitary Compliance Officer position
- Coordinate the street sweeping schedule with trash collection schedule

PROGRESS



COMMERCIAL

GOAL: In Portland, private waste haulers collect waste and recycling from businesses. The Solid Waste Task Force recommended that the City Council empanel a group to develop recommendations for policies that will increase commercial recycling rates to 50% by 2020.

STRATEGIES

- Establish a group of business owners, waste haulers, and City officials to explore reducing waste and increasing reuse and recycling in the commercial sector
- Study best practices for maximizing reuse, recovery, and recycling of business recyclables, construction and demolition, and food waste

PROGRESS



MULTI-FAMILY

GOAL: In Portland, some multi-family buildings do not participate in the residential recycling program. The Solid Waste Task Force recommended making equitable and accessible recycling available to all residential buildings in Portland.

STRATEGIES

- Adopt an ordinance requiring all residential buildings to make collection containers available for all materials accepted for recycling at ecomaine available at convenient locations in the building.

PROGRESS



Solid Waste Scorecard - 11/14/2014

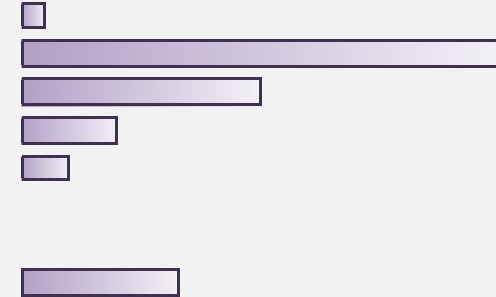
PUBLIC BUILDINGS AND EVENTS

GOAL: The City, in its operations, should demonstrate leadership in the area of waste reduction and recycling. The Solid Waste Task Force recommended that all City buildings and City sponsored events provide access to recycling containers by co-located recycling bins with waste receptacles.

STRATEGIES

- Provide public recycling containers at City Hall
- Require custodial staff to collect office recycling in City buildings
- Offer recycling at public events
- Require recycling at City sponsored and City permitted events
- Co-locate a recycling container with every trash receptacle on City streets and parks by December 2016
- Develop and implement an environmentally preferable purchasing policy
- Update the City's recycling and resource conservation policy (AR42)
- Explore collection of School Department trash with City vehicles

PROGRESS



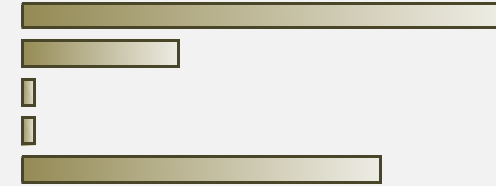
COMPOSTING

GOAL: The Solid Waste Task Force recommended that the City begin to explore the development of a large-scale composting facility and continue to promote home composting, composting in schools, and other ways to increase composting.

STRATEGIES

- Make compost bins available for purchase any time of year
- Educate residents about composting
- Reinstate the yard waste drop-off program
- Offer curbside yard waste collection in the spring
- Deliver food waste from the Barron Center and School Department to composting facility

PROGRESS



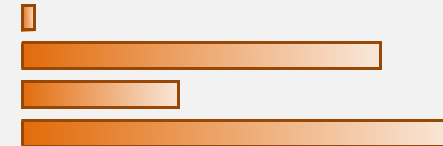
EDUCATION

GOAL: The Solid Waste Task Force recommended that the City establish an education program to inform residents about the City's waste management strategy, educate them about meeting the City's goals, and let people know how to participate in the waste reduction and recycling programs the City provides.

STRATEGIES

- Improve the City's solid waste webpage
- Educate School students about reducing waste and recycling
- Provide information at large public events
- Advocate for expanding ecomaine's efforts in the area and developing educational material

PROGRESS



Solid Waste Scorecard - 11/14/2014

ADVOCATE

GOAL: The Solid Waste Task Force recommended advocating for product stewardship at State and National level.

- **STRATEGIES**

The City recognizes the financial and environmental benefits of Maine's producer responsibility laws that require manufacturers to cover the cost of recycling materials such as televisions and computer monitors. The Solid Waste Task Force recommended that the City support efforts by industry and state and federal agencies to expand producer responsibility to additional products. Such programs create financial incentives for manufacturers to improve product design to facilitate recycling and recovery of valuable resources

PROGRESS



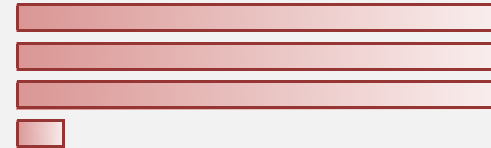
PERFORMANCE

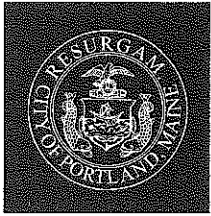
GOAL: The Solid Waste Task Force recommended providing elected officials and members of the public with regular updates of the performance of the

- **STRATEGIES**

- Report progress made by the program during the year towards meeting the City's goals
 - Report major achievements over the past year that increased the recycling rate
 - Plan for the next year that will further the City's goals
- Review policies, ordinances, and operations of the program every five years

PROGRESS





PORTLAND MAINE

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Public Services Department

Michael J. Bobinsky, Director

To: Members of the Transportation, Sustainability and Energy Committee

From: Troy Moon, Environmental Programs and Open Space Manager

RE: Solid Waste Score Card

Date: 11/14/2013

In 2010, the Portland City Council created the Solid Waste Task Force to review the City's Solid Waste Program and make recommendations to help the program achieving higher levels of waste reduction and recycling. The Task Force report, which was accepted by the Council in September, 2011, outlined a number of goals and specific strategies that the City could implement to achieve them. I have attached a dashboard report to this memo to provide a visual representation of progress towards achieving the recommended goal for your information. This memo will provide additional information about achievements during the past year.

Goal: Increase the City's recycling rate by 2% per year to achieve 50% recycling by 2020

The most significant achievement during the past year was the Council's authorization of the Department's request for \$168,000 to implement cart based recycling in two neighborhoods. Staff is currently preparing a bid document to purchase the carts and will deliver them to residents in the pilot neighborhoods in the late spring. Rolling out the carts will involve extensive education and outreach efforts to affected residents. We are currently reviewing cart based programs in comparable cities in order to learn best practices and to learn what elements of the program may present the greatest challenges to success. We are also working closely with ecomaine and USM professor Travis Wagner to develop a program to study the impact of the cart program on recycling performance and set out rates. This will provide valuable data about the efficacy of the program and provide data to support decisions about whether to expand the program in the future. The Department looks forward to providing data about the pilot program in our report next year.

The Department is also seeking a new location for the Silver Bullet recycling containers that are currently located on Kennebec Street. If the Midtown development moves forward, it will displace these containers which collect over 20% of the recyclables generated in the City each year. We are working with Woodard and Curran to review a number of alternative locations and will be meeting with

the City Manager and elected official soon to discuss them. The City Council approved \$100,000 in the current CIP budget to implement a move.

Goal: The Solid Waste Task Force recommended that the City Council empanel a group to recommend policies to achieve 50% commercial recycling by 2020.

While commercial waste haulers provide recycling services to many businesses in Portland, a large number of businesses rely on the Silver Bullet program to recycle. Relocating the Silver Bullets to a location that is convenient for these businesses will be an important way to support commercial recycling.

Goal: Make recycling an equitable recycling program available residents in all multi-family buildings in Portland

The City Council created a multi-family recycling task force that recommended an ordinance requiring the owners of multi-family buildings provide residents with a comprehensive recycling program that makes recycling as convenient as waste disposal. The Transportation, Sustainability and Energy Committee recently endorsed this ordinance which will return to the full Council for endorsement in the near future. The Department has committed to work closely with affected property owners to implement effective programs if the Council adopts the ordinance.

Goal: The City, in its operations, should demonstrate leadership in the area of waste reduction and recycling

During the past year, Facilities Management has worked closely with Public Services and ecomaine to establish a recycling program at Ocean Gateway. Patrons have access to recycling containers at all events at the facilities as do caterers and other vendors supporting functions. Public Services provides regular recycling collection.

The School Department continues to aggressively reduce waste in the food service program. Students separate food scraps and recyclables from trash at each school cafeteria and at the central kitchen. The Public Services Department collects recyclables twice a week at most facilities. We have also added recycling dumpsters at several buildings because the volume of material collected was too much for cart based service. These efforts have led to dramatic reduction in waste collection. Last year most schools received daily service from the hauling contract. Now, most receive service once or twice weekly. This volume reduction allows us to begin thinking about how we can integrate school waste collection into the City program as recommended by the Solid Waste Task Force.

Goal: The City should explore development of a large scale composting facility and continue to promote home composting

Our regional waste handling agency, ecomaine, has commissioned a feasibility study to determine the most efficient and cost effective way to offer collection and processing of organic material from the residential and commercial waste streams in its service area. We look forward to seeing the results and will report back in future years on how Portland can participate in ecomaine's organic programs. A

recent study by the University of Maine determined that over 40% of our regional waste stream is organic, which underscores the Solid Waste Task Force's sentiment that recovery of organics will be vital if the City hopes to achieve its waste reduction goals.

Beginning this year, we have made home composting units available to residents year round.

Goal: The City should establish an education program to inform residents about the City's waste management strategy, educate them about goals and let them know how to participate in programs.

The Department looks forward to the revamped City web page which will be a vital tool to provide information about our solid waste program. Staff is preparing updated content that will be ready to publish when the new pages go on line. In the meantime, we continue to provide important information on the current platform so residents will have current information about our programs.

During the past year, we have made efforts to educate people about recycling at major events. Staff provided recycling containers at the 4th of July festivities and also at a major concert on the waterfront.

We also support efforts by ecomaine to provide recycling and waste reduction education on a regional level. These include an enhanced presence on social media platforms including Facebook and Twitter as well as more traditional media including television, radio and newspapers.

Goal: Support efforts by state government, federal government and industries to promote producer responsibility programs.

The City continues to strongly engage with government agencies and industry groups to promote programs where product manufacturers share in end of life responsibility for consumer goods. During the past year City staff testified in favor of a product stewardship bill for architectural paint that was supported by the paint industry. This bill, which has become law, will make it easier and cheaper for the City and residents to properly dispose of unwanted paints.

Goal: Provide regular updates to the Council and members of the public about the performance of the solid waste program.

We are pleased to take this opportunity to provide information about our programs and look forward to answering any questions you may have.



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Public Services Department

Michael J. Bobinsky

To: Members of Transportation Sustainability and Energy Committee
From: Michael J. Bobinsky, Director of Public Services
Date: November 15, 2013
Subject: Review of Winter Parking Ban Program

The Department of Public Services has completed a review of its winter parking ban program as it relates to locations on City streets where Portland residents may park their cars during parking bans. While we are still evaluation elements of the winter parking ban's we have identify certain elements we can act on in the short term. Currently on- street parking at designated locations is limited to streets located within our parks system including Cutter Street in the Eastern Prom Park and Tennis Court Road in Deering Oaks Park. Off Street parking allowed during winter parking bans includes:

1. State Street gravel lot abutting Deering Oaks.
2. Fitzpatrick Stadium parking lot
3. Hadlock Field parking lot
4. All Portland Public School parking lots EXCEPT the Reiche School lot which abuts the school and playground.
5. Beach St. lot accessible from Commercial St. after 8:00 pm.
6. City lot at the corner of Park & Commercial Streets across the street from the IMT (International Marine Terminal).
7. Parking Lot on Munjoy St at the former Adams School site.
8. On Peaks Island, snow ban parking is available at the Welch Street parking lot
9. Most Parking Garages, including Maine Medical Center are available during snow bans at reduced rates. For a complete list of city-owned and privately operated parking garages, visit the city's website at <http://www.portlandmaine.gov/parking/offstreet.asp>.

Our review revealed that the Department will support adding locations on a trial basis to learn of effectiveness and safety. In addition and in response to request to allow more parking on designated City Streets within neighborhoods, the Department is willing to add the following streets to the designated listing of approved locations to park during a parking ban:

- Eastern Promenade (Between Walnut Street and the Loring Memorial Garden-water side)
- Western Promenade, Pine Street to Bowdoin Street-Park Side
- Marginal Way (Between Cove Street to Boyd Street/World Gym entrance-I-295 Side)

Cc: Mark Rees, City Manager



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Public Services Department

Michael J. Bobinsky

To: Members of Transportation Sustainability and Energy Committee
From: Michael J. Bobinsky, Director of Public Services
Date: November 15, 2013
Subject: Pesticide Use

City staff will provide an update to the Committee on alternatives to pesticide use by city staff in Public Services and in Recreation and Facilities Management. Both Departments have made progress with using alternative products in the daily maintenance of City parks, athletic fields and golf courses. City staff provided information to the Sustainability Committee a few years ago and the purpose for this agenda item is to provide the Committee with an update on progress we have made and experiences with alternative non chemical applications.

Environmental Performance Report



City of Portland, Maine

July 2012 – June 2013

SUMMARY

According to the Environmental Performance Policy, adopted by the City Manager as an Administrative Policy of the City, recommended by the City Council, the administration is responsible for tracking and reporting annually on the following metrics:

- Building fuel use;
- Electricity use;
- Vehicle fuel use;
- Solid waste generation; and
- Office paper (8.5 x 11) purchasing.

The above metrics represent a part of the City's performance in corporate sustainability.

The 2013 Fiscal Year (FY) beginning in July 2012 and ending in June 2013 represents the first year that these metrics have been compiled into a single report. Fiscal Year 2013 represents the first year that office paper purchasing has ever been tracked. Electricity and other fuels have been tracked for a number of years. Solid waste generation from city facilities was not tracked due to lack of data collection. Future year reports should contain solid waste generation.

This report only reports on the metrics and does not analyze or proposed actions to undertake to make improvements in performance. These metrics are presented either in the units of the metric itself, calculated cost, or calculated greenhouse gas emissions.

Of note with regard to this report is that between May 2011 (FY 2011) and June 2012 (FY 2012) the City was under contract with an Energy Performance Company to construct energy improvements throughout City and School buildings that would potentially result in electricity and fuel savings. Quantification of the savings realized because of these projects can be seen in this report.

The data presented in this report does not consider operational ownership. If the data is available it is reported disregarding operational control.

In 2013, approximately 28,776,215 kwh (kilowatt hours) of electricity, 142,393 gallons of heating fuel oil, 1,136,006 therms of natural gas for heating, 394,618 gallons of gasoline and diesel fuel, 30,384 gallons of Compressed Natural Gas (CNG) and 10,859,500 sheets of 8.5 x 11 office paper are being reported. Solid waste generated by city facilities is unknown at this time.

Performance Metrics 2013	
Electricity	28,776,215 kwh
Heating Fuels	
Heating Fuel Oil	142,393 gallons
Natural Gas	1,136,006 therms
Vehicle Fuel	
Gasoline and Diesel	394,618 gallons
Compressed Natural Gas	30,384 gallons
Office Paper (8.5 x 11)	10,859,500 sheets of paper

The Greenhouse Gas (GHG) emissions from this usage is approximately 3,492 metric Tons of CO₂ equivalent (e) units from vehicle fuel, 11,093 CO₂e from electricity, and 7,657 CO₂e from heating fuel. The total, approximate GHG emissions: 22,242 metric Tons of CO₂e.¹

SUMMARY

- Overall, energy usage is trending downward due to efficiency and conservation efforts.
- Natural gas usage is replacing oil, gasoline, and diesel.
- Switching to natural gas is saving money.
- Energy efficiency is saving money.
- Competative energy supply procurement is saving money.
- It is unknown at this time if office paper purchasing is high or low. Annidotal evidence suggests that some Departments have noticed a drastic decrease in paper usage over the past couple of years due to two-side printing options and using the internet for document sharing.
- The School Department has pioneered CNG as an option for vehicle fuel.
- Vehicle fuel efficiency has improved.

¹ Total energy composition includes General Fund, Enterprise Funds, and non-City sources available for reporting.

HEATING FUEL PERFORMANCE

For comparison purposes, FY 2010 was compared to 2013. Both these years share a similar number of heating degree days (HDD): 2010 had 6,315 and 2013 had 6,573. FY 2010 and 2013 also correspond with pre and post construction of the energy efficiency improvements in 2011 and 2012. Through the energy efficiency improvements the City switched from primarily heating fuel oil to natural gas as the primary heating source for many of the City's buildings. This increased the total British Thermal Units in thousands (kBtu) needed to heat the buildings, but resulted in lower GHG emissions and lower cost as can be seen in the table below. GHG emissions dropped approximately 14% and total costs dropped approximately 38%.

For the buildings where energy improvements were made per the energy performance contract, there was a drop of 22% in energy use (kBtu) for public buildings, but an increase of 12% for school buildings. The increase in energy use is attributed to the added energy needed for natural gas to power boilers originally designed for higher energy content fuel oil and sometimes bunker oil. The cost savings attributed to these conversions were due to the difference in cost between the two fuel sources.

Heating Fuel Performance			
	FY 2010	FY 2013	Increase/ Decrease
Heating Fuel (gallons)	720,258	142,393	-406%
Natural Gas (therms)	264,032	1,136,006	77%
Energy Improvements	93,926,331	94,271,188	0.4%
Public Buildings (kBtu)	38,377,689	31,353,973	-22%
School (kBtu)	55,548,641	62,917,215	12%
GHG Emissions (CO ₂ e)	8,755	7,657	-14%
Estimated Cost (\$)	2,684,080	1,939,585	-38%

ELECTRICITY PERFORMANCE

For comparison purposes, FY 2010 was compared to 2013. FY 2010 and 2013 correspond with pre- and post-construction of the energy efficiency improvements in 2011 and 2012. Total electricity use increased due to construction of the new Jetport Terminal; however, excluding the Jetport, electricity use has decreased. With the exception of Social Services and Sewer divisions electricity use is trending downward and the increase in these divisions is attributable to increased service. The downward trend in electricity use has also coincided with a large drop in electricity supply costs not represented in the table below.

For the buildings where energy improvements were made per the energy performance contract, there was a drop of 12% in electricity usage for public buildings and a 5% drop in electricity usage for school buildings. Electricity energy improvements were primarily lighting improvements such as lamp replacements and motion sensor light switches.

Electricity Performance			
Kilowatt Hours (kwh)	FY 2010	FY 2013	Increase/ Decrease
Jetport	3,631,834	7,682,587	53%
Traffic Lights	434,428	395,886	-10%
Streetlights	3,566,659	3,498,166	-2%
Sewer	374,356	393,891	5%
Parks and Cemeteries	550,110	517,925	-6%
Ballfields	201,410	200,354	-1%
Golf Course	155,148	117,739	-32%
Fish Pier	128,600	125,000	-3%
Schools	6,586,048	6,320,171	-4%
Public Buildings	5,599,930	5,430,040	-3%
Parking	654,700	608,402	-8%
Police	1,223,200	1,130,080	-8%
Fire	497,133	490,043	-1%
Barron Center	1,398,657	1,384,791	-1%
Social Services and Public Health	472,254	481,140	2%
Total (kwh)	25,474,467	28,776,215	11%
less Jetport (kwh)	21,842,633	21,093,628	-4%

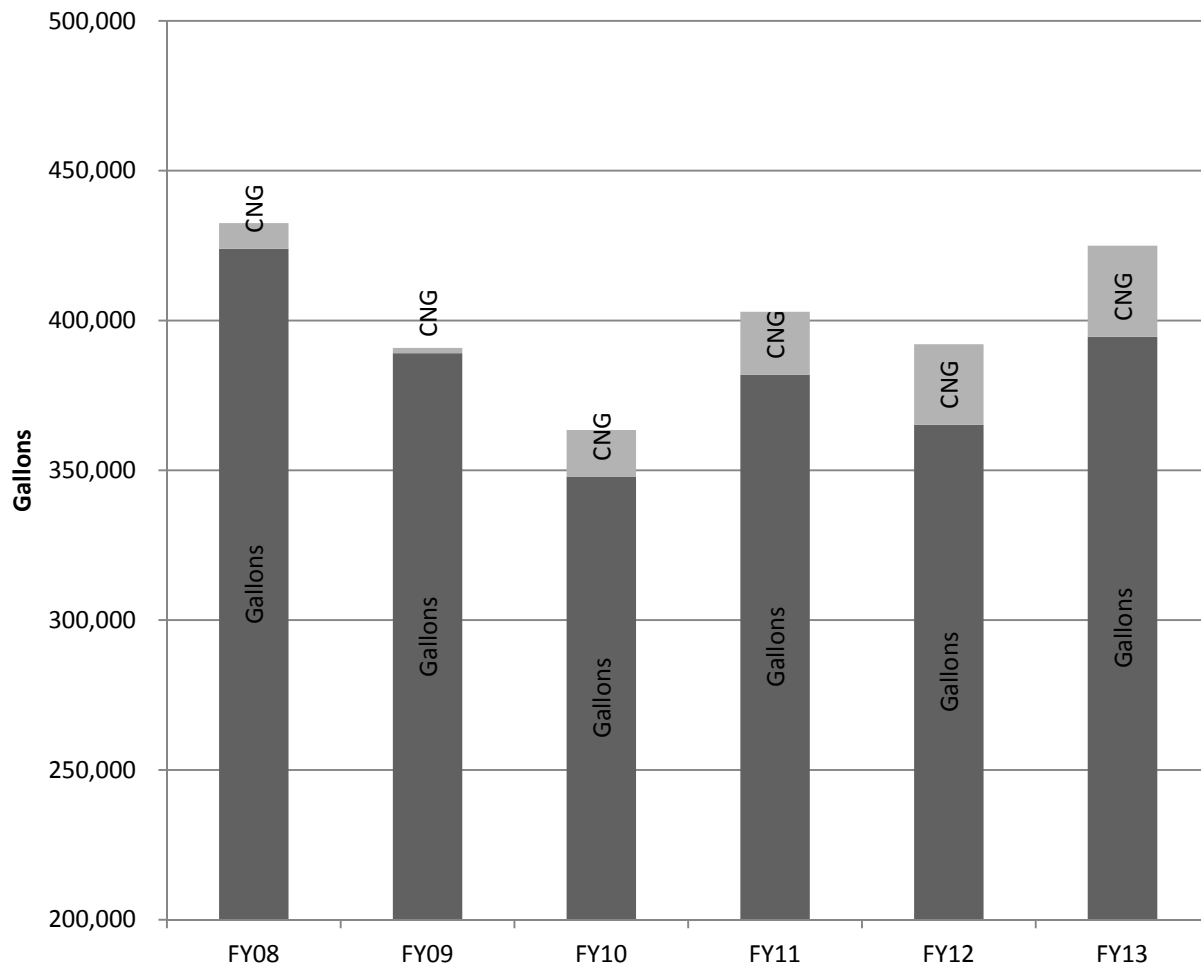
Energy Improvements	13,318,163	12,279,704	-8%
Public Buildings	7,100,224	6,362,165	-12%
Schools	6,217,939	5,917,539	-5%
Total Emissions (CO₂e)	9,820	11,093	11%
less Jetport (CO₂e)	8,420	8,131	-4%
Estimated Cost (\$)	3,566,425	4,028,670	11%
less Jetport (\$)	3,057,969	2,953,108	-4%

VEHICLE FUEL PERFORMANCE

Vehicle fuel use has decreased from approximately 424,000 gallons of gasoline and diesel fuel in FY 2008 to 394,600 gallons in FY 2013. Additionally, the School Department increased its use of CNG from approximately 8,500 gallons of CNG in FY 2008 to 30,400 gallons of CNG in FY 2013. The price of CNG is approximately half the cost gasoline or diesel.

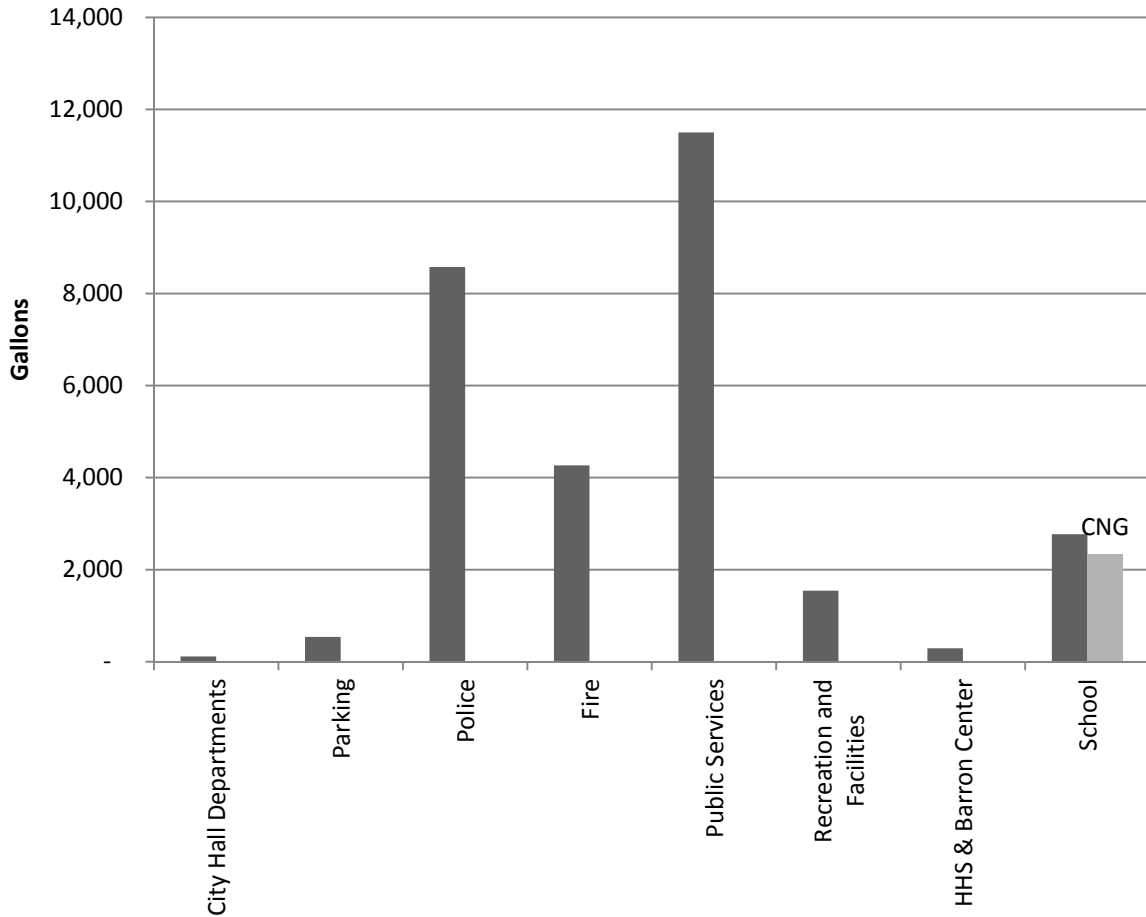
Fuel volumes vary depending on the services delivered as well as seasonal variations and annual variations in weather. No attempt has been made to normalize fuel usage due to services delivered or weather.

Vehicle Fuel Use FY 08 to FY 13



The average monthly, non-winter departmental fuel use is as follows. The Public Services Department uses the most fuel, the Police Department second, and Fire Department third.

Vehicle Fuel Non-winter Monthly Average



OFFICE PAPER PERFORMANCE

The City purchased approximately 10,900,000 sheets of office paper (8.5 x 11) in 2013. Greater than half of that paper purchase was by the School Department.

This is the first year that this information has been collected.

The Jetport, Fire Department, Health and Human Services, Public Services, School Department, Planning and Inspections all used paper with greater than 30% recycled paper content for some paper purchased. All Departments used some paper that was Forest Stewardship Council (FSC) certified.

Office Paper Purchasing, 2013

