

1. Agenda

Documents: [7.15.15.PDF](#)

2. Approval Of June 17, 2015 Meeting Minutes

Documents: [TSE MEETING NOTES 6 17 15.PDF](#)

3. Communication Items: (No Public Comment Will Be Taken)

3.I. Middle And India Streets (Parking Meters To Be Installed)

Documents: [MIDDLE INDIA TCMEMO.PDF](#)

4. Action Items: (Public Comment Will Be Taken On These Items)

4.I. Solid Waste Study

Documents: [SOLID WASTE STUDY MEMO.PDF](#), [SOLID WASTE STUDY.PDF](#)

4.II. State And High Streets (One-Way To Two-Way Conversion)

Documents: [MEMO STATE AND HIGH ST.PDF](#), [STATE AND HIGH PRESENTATION.PDF](#), [STATE AND HIGH MEETING NOTES FINAL MEETING JUNE 2015.PDF](#)

4.III. Warren Avenue Purchase And Sales Agreement

Documents: [MEMO WARREN AVE PROPERTY.PDF](#), [WARREN AVE PROPERTY PROPOSAL.PDF](#), [PURCHASE AND SALE AGR PH WARREN AVE CITY.PDF](#)

4.IV. Commercial Street At Long Wharf - Temporary Removal Of Two Parking Meters

This is an Amended/Added Agenda Item

Documents: [COMM ST LONG WHARF MTRS.PDF](#)

5. Committee Updates/Input Sought: (No Public Comment Will Be Taken)

5.I. Pesticide Task Force

Documents: [PESTICIDE ORDINANCE MEMO.PDF](#)

CITY OF PORTLAND, MAINE
The Transportation, Sustainability and Energy Committee

Transportation, Sustainability and Energy Committee

DATE: 7/15/2015
TIME: 5:30 PM
LOCATION: Room – Council Chambers
City Hall

AGENDA

1. Approval of June 17, 2015 Meeting Minutes
2. Communication Items: (No Public Comment will be taken)
 - A. Middle and India Streets (Parking Meters to be installed)
3. Action Items: (Public Comment will be taken on these items)
 - A. Solid Waste Study
 - B. State and High Streets (One-way to Two-way Conversion)
 - C. Warren Avenue Purchase and Sales Agreement
4. Committee Updates/Input Sought: (No Public Comment will be taken)
 - A. Pesticide Task Force

Councilor David A. Marshall, Chair
Councilor Jon Hinck, Vice Chair
Councilors Justin Costa and Kevin Donoghue

CITY OF PORTLAND, MAINE

Standing Committee on Transportation, Sustainability and Energy

Councilor David Marshall (D2), Chair

Councilor Jon Hinck (A/L), Vice Chair

Councilor Kevin Donoghue (D1)

Justin Costa (D4)

June 17, 2015

Meeting Minutes

Attendees: Councilor Kevin Donoghue, Councilor John Hinck, Michael Bobinsky, Jeremiah Bartlett, Ian Housel, Bill Needleman, Greg Mitchell, Eric Lemay

Meeting called to order at 5:30 pm

1. Approval of May 20, 2015 Meeting minutes. All in favor.

2. A) Harbor Dredge issues

Potential dredge projects being researched by a non-federal dredge workgroup

Cad Cell – Hole in the harbor bottom to use a repository for contaminated soil.

There is \$250,000 to assist for consulting, design, and permitting.

Site selection – either Fort Allen Park or Fort Gorges on the Falmouth shore.

Alternative solutions were requested:

Bring the material to Norridgewalk or make into useable material. Both are wildly expensive. Put on next agenda after the site has been selected.

B) Non Motor Boating

Boat ramp usage has grown to include the use of paddle boats, boat rentals, float assembly which is in conflict with the ramp purpose. Looking for funding...There has been a grant application and there is a ME coastal program. Next steps are site selection, planning, and permitting.

A second grant is a DOT ship program for the construction. Friends of the Eastern Prom have offered a local match of funds.

C) Bike Corrals

There are currently 2 locations, Commercial St and Market St

Looking for a potential location for a third. Could a no parking zone, loading zone, or 15 minute parking zone be used? If paid parking spots were removed who would cover the cost of the lost revenue? Where does the councilor feel the next corral should go?

Councilor Donoghue: Where is there a bicycle shortage and where would it best serve the needs of bicyclist??

Councilor Hinck: With giving up a lot of parking spaces, sightlines must be maintained. Bicycles don't interfere. Corrals should be given the same considerations as motorcycles.

Suggests a criteria based on bike occupancy and demand perspective
Historic areas are questionable.

Councilor Costa: Wouldn't rule out anything but would like to see a tiered system and would look for guidance from the corral company. Perhaps done based on a demand by private business.

Councilor Donoghue: If privately driven who would replace the cost of the lost meter revenue?

D) LED Street Lights

Study conclusions are that utilities are artificially raising the rates.
Value added benefits if LED lights were used are found in the memo.
Save approx. 30%.

Changing to LED lights has two options: own the system and manage ourselves or CMP manages and 80% goes to CMP.

For metered and decorative there are not many options. 5 or 6 places in Portland have different fixtures and light quality.

LED light is charged a tariff and start losing light quality around 5 years.
The technology is new. The photocell life is 2 to 3 years and fails in the ON position.

Councilor Hinck: Review other municipalities and find a winning strategy.

3. Sustainable Portland

Since implementation the committee has accomplished all the goals. See chart.
Looking for next steps on actionable items: City roofs for solar panels went to RFP.

Ian suggests moving forward on the following items:

Benchmarking
Star Communities metrics
Public process for community vision

Councilor Hinck: Task force didn't want benchmarking.

Target multifamily/rental for mandatory benchmarking not commercial, skip phase I.
Monitor other municipalities for comparison
Assess what we could do

Councilor Donoghue: City management to recommend this be an administrative function.

Report results in September.
Council will give concrete guidance on what to move forward with.

4. A) Traffic Schedule Amendment

Portland Street – Alder to Preble one way flow conversion

2 way Oxford Street. Creates more on street parking and flow through traffic

Will be putting in temporary markings

Councilor Donoghue: Likes diagonal parking and bike lane. Nets almost double parking and almost no traffic impact.

Councilor Costa: Phantom light is gone and traffic will be behind the bus.

All in favor of making the street one way. Advance to city council.

B) EDA grant Amendment

Use of \$400,000

Extend Right of Way and sidewalk on Thompson's Point

Developer will build a road not set to standard but would be a city Right of Way and connect to the trail.

Additional sidewalk repair on Congress St. Traffic calming study winding down.

Councilor Donoghue: Improve status of bus stop. Wants to see that is has been discussed.

Mike will forward him the information

Greg Mitchell: Sidewalk will have a concrete pad for seating or shelter with this project.

C) Metro MOU

Street closures interface with Metro looking for approval of MOU on July 6th Council Agenda.

See the memo for tiered structure. Note: still a work in progress but stronger than it was a year ago with less objectivity.

Councilor Donoghue: What service improvements are being made?

i.e. adding shelters/levels of service

Investments of \$250,000 plus addition \$300,000 for curb extensions and shelters.

The purpose is the mobility of buses and space for shelters.

Impacts of a closure:

Creates confusion

Users have to navigate to new areas

4,500+ users/day throughout the system prefer certainty and reliability.

Real time but information will not be accurate.

Councilor Donoghue: Congress Street should be higher concern.

The MOU is a step in the right direction.

All buses use Congress Street. MOU would have to not close Congress St ever.
Add City Manager's Office as an alert.

What is the process for a street closure:

Michael Bobinsky:

Ted Musgrave deals with the application process for the event and time of day
Traffic control plan is required.
Eventer must pay for traffic closure.

Councilor Donoghue: Would it be useful to have an MOU for the art walk?

Create an operating plan
Look at side streets
Overall traffic plan

Clarified language by July 6th. Motioned to endorse to council. All in favor.

D) Sustainable transportation fund

Amend the current wording to use up to 20% of available balance.

Kennebec Street needs \$5,000 - \$10,000. Bike coalition got a grant which may help with the money.

Councilor Donoghue: Would 10% be useful?

Bruce Hyman: Yes

Councilor Donoghue recommended 10%. All in favor. Will be added to council request.

Adjourn at 7:45

**CITY OF PORTLAND
MEMORANDUM**

TO: Transportation Committee
Councilor David Marshall, Chair
Councilor Jon Hinck
Councilor Kevin Donoghue
Councilor Justin Costa

FROM: John Peverada, Parking Manager

DATE: July 7, 2015

RE: **Installation of Parking Meters on Middle & India Streets**

During the Planning Board approval of the Opechee redevelopment of the former Jordan's Meats site (Hampton Inn), it was determined that parking meters should be installed on the streets abutting the development. Upon completion of the hotel we installed meters on the north side of Fore Street between India St. and Franklin (abutting the site). However, we decided to hold off installing the meters on the India and Middle St sides of the development until phase 2 was constructed.

It is now four years later and phase 2 has not been started, however other development activity has occurred in the area, and the demand for turnover parking in the area is increasing. We are proposing to convert the existing two hour parking abutting the site (15 spaces on Middle St. and 7 spaces on India St.) to metered parking. This request is being made in an effort to best regulate the on street parking in this area to create turnover parking. Meters make enforcement much more efficient than chalking time zones.

Since we are going from time limited parking to metered parking, this issue does not have to go to the council, but I wanted to bring it before this committee as a communication and for any discussion.

Portland, Maine



Yes. Life's good here.

Michael J. Bobinsky
Director of Public Services

To: Members of the Transportation, Energy and Sustainability Committee
From: Michael J. Bobinsky, Director of Public Services
Date: July 10, 2015
Subject: Solid Waste Study

The Solid Waste Study will be presented at the meeting held on Wednesday, July 15, 2015 meeting. Staff along with a consultant from Kessler Consulting will be presenting this report to you for your information and questions.

Key elements of the study include an evaluation of present operations, description of existing curbside collection services, and recommendations to modernize the existing service level with new equipment. The report provides an assessment of program improvement opportunities and cost implications.

Evaluation of Recycling and Solid Waste Collection Services

April 2015



Prepared for:
City of Portland
389 Congress Street
Portland, ME 04101

Submitted by:
Kessler Consulting, Inc.
innovative waste solutions
14620 N. Nebraska Ave., Bldg. D
Tampa, FL 33613

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Table of Contents

Section 1	Introduction.....	1
Section 2	Summary of Results and Recommendations	2
2.1	Summary of Key Findings	3
2.2	Summary of Key Recommendations	10
2.3	Possible Next Steps	14
Section 3	Description of Existing Curbside Collection Services	15
3.1	Profile of Services	15
3.2	Unique Characteristics of Portland Collection Services	16
3.3	Operational Metrics	17
3.4	Financials	18
3.5	Assessment of Current Operations	20
Section 4	Profiles of Other City Collection Services	27
4.1	Carted Recycling Collection	27
4.2	Residential Organics Collection	29
4.3	Bag-Based Recycling Collection	31
Section 5	Assessment of Program Improvement Opportunities	33

5.1	Recycling Collection in Carts versus Bins & Bags	34
5.2	Residential Source Separated Organics Collection	36
5.3	Public versus Privatized Collection Service	38
5.4	Semi-automated Side Loaders versus Rear Loaders	41
5.5	Collection Truck Size.....	43
5.6	Information Technology for Collection Operations	44
5.7	Compressed Natural Gas Collection Trucks	46
5.8	Staff Training and Safety	47
5.9	Incentive System	49
5.10	Pay-As-You-Throw (PAYT) Programs	50
Section 6	Analysis of Collection Scenarios	54
6.1	Description of Scenarios.....	55
6.2	Results of Analysis – Operational Metrics.....	59
6.3	Results of Analysis – Financial Metrics.....	60
6.4	Options for Financing System Improvements.....	62

Tables

Table 1: Projected Financials of Collection Scenarios.....	8
Table 2: Financial Impact of a 25% Increase in PAYT Bag Fees for Cart-based Scenarios.....	9
Table 3: Portland Recycling and Solid Waste Collection Metrics – FY2012-FY2014 Average	17
Table 4: Collection Services Revenue – FY2012-FY2014.....	18
Table 5: Collection Services Expenditures FY2012 – FY2014.....	19
Table 6: Time & Motion Observations in Parkside Neighborhood	23
Table 7: Profiles of Cart-Based Single Stream Recycling Programs.....	28
Table 8: Profiles of Source Separated Organics Collection Programs	30
Table 9: Amount of MSW Discarded by Ecomaine Communities (Pounds/Capita/Month).....	51
Table 10: Basic Features of Four Collection Scenarios Considered	54
Table 11: Common Assumptions and Inputs for All Scenarios.....	55
Table 12: New Collection Truck Capital Costs.....	57
Table 13: Collection Cart Capital Costs	58
Table 14: Estimated Operational Metrics for Collection Scenarios.....	59
Table 15: Projected Revenue and Expenses for FY2017.....	60
Table 16: Projected 10-Year Net Present Cost for FY2017-FY2026.....	61
Table 17: Financial Impact of a 25% Increase in PAYT Bag Fees for Cart-Based Scenarios.....	63

Section 1 Introduction

In November 2014, the City of Portland engaged Kessler Consulting, Inc. (KCI) to conduct an evaluation of Portland's recycling and solid waste collection services. KCI's work entailed the following:

- Compilation of available records and data regarding current recycling and solid waste services infrastructure, operations and finances.
- Limited field observation of curbside services to assess potential opportunities to improve efficiency.
- Evaluation of three collection service alternatives:
 - Switching curbside recycling to standardized roll carts.
 - Switching curbside recycling to collection in plastic bags in all or part of the City.
 - Implementing residential curbside organics collection for food scraps and yard waste.
- Assessment of the advantages and disadvantages of privatizing all or part of the City's curbside collection service.

This document presents the results of KCI's evaluation and analysis.

The project scope was limited to Portland's curbside collection services. The City's Riverside Recycling Center and Island collection operations were not included.

Note on format of report: This report is laid out in landscape and large font bulleted text in order to improve readability.

Section 2 Summary of Results and Recommendations

This project assessed Portland's existing curbside recycling and MSW collection services and evaluated three potential alternatives for changing the services provided.

1. Cart-based single stream recycling (SSR) is widely acknowledged to be the most effective and efficient way to maximize residential recycling rates.
2. Source separated organics (SSO) collection is an emerging practice in the U.S. being adopted by communities seeking to further maximize recovery and provide comprehensive service to their customers.
3. Collection of recyclables in plastic bags is practiced by a small number of jurisdictions in the U.S. While bags can improve collection efficiency, they can be less convenient than carts, do not achieve comparable recovery rates, and pose a significant operational challenge to recycling facilities where recyclables must be debagged prior to sorting and processing. The Ecomaine Materials Recovery Facility (MRF) would require substantial capital investment to accommodate bagged recyclables. Consequently, KCI does not recommend further consideration of this alternative.

The project also considered advantages and disadvantages of privatizing the City's curbside collection service.

2.1 Summary of Key Findings

Assessment of Current Operations:

- **Collection Employees Lack Adequate Facilities:** the current facility off Congress Street lacks adequate sanitary facilities, lockers, or wash facilities for employees.
- **Current Collection Operations Are Productive for Manual Rear-load Service:** Based on limited observation, City crews were productive for a manual rear-load collection program.
- **Collection Trucks Have Limited Capacity to Complete Their Routes:** Trucks are at or exceed their maximum payloads in order to complete their routes in a single load.
- **The Task-based Incentive System May Compromise Safety:** It appears that the task-based system encourages fast-paced work that may be compromising worker health and safety. A number of opportunities to reduce risk of physical injury and property damage were observed.
- **High Recycling Participation:** Participation in the recycling service is very high (in excess of 90%), which is likely due to the Pay As You Throw (PAYT) incentive to reduce blue bag usage.
- **Current Recycling Bins Are Not Large Enough:** Numerous recycling bins placed out for collection were overflowing with excess recyclables, which negatively impacts operations and creates litter.

- Lack of Consistent Recycling Bins: Customer-provided bins do not conform to standard specification (size, strength, and rigidity) which can make it more difficult for collection crews to service them.
- Organics Collection is Already Available: Citywide it appears that approximately 10% of households already subscribe and pay for SSO collection.

Operational Analysis of Alternatives

Cart-based SSR Collection:

- Carts (when compared to bins) provide more capacity, hold larger items, enable a neater street appearance on collection days, keep recyclables dry in inclement weather, and the integrated wheels improve convenience and ease of use.
- 64-gallon cart size is appropriate for weekly collection – larger 95-gallon carts may be too large for some urban settings.
- Semi-automated side loaders provide the flexibility to collect productively in variety of neighborhoods.



Residential SSO Collection:

- Innovative communities are piloting and implementing SSO collection.
- Private service is available in Portland and an estimated 10% of households already subscribe.
- Well-functioning programs can increase a community's overall diversion rate by 15 to 20%.

- Because SSO collection is an emerging trend with limited history, conducting a pilot is in program design and evaluate impacts.
- Residents should be provided with both kitchen bins and curbside carts to help encourage participation and address concerns about separating food waste.
- Extensive public outreach and education and technical assistance is necessary to support successful implementation.
- SSO removes most putrescible waste from MSW and makes it possible to reduce MSW collection frequency to every other week.



Public versus Privatized Collection Service:

- Based on the metrics available to KCI, Portland's existing collection services operate within expected ranges of efficiency and productivity for a two-person rear load truck operation (route size, stops per hour, and tons per crew hour).
- The City-based operations has the capacity to implement operational improvements and new service alternatives if City is able to finance new equipment.
- Privatization of collection services would likely reduce the City's costs through a reduction in work force and operational supervisory staff. However the City would lose ability to directly control quality of service, responsiveness to customers, and oversight of safety and environmental compliance.
- Any privatization initiative would need to carefully consider the complexities given the diversity of services that would be impacted, e.g., Island collection, bulky waste collection, and snow plowing.

Semi-automated Side Loader Trucks:

- Cart-based collection requires trucks equipped to lift carts.

- Portland’s Monday, Tuesday and Friday routes are well-suited for automated collection with one-person crews. Wednesday and Thursday routes are suited for either automated or semi-automated collection with one- or two-person crews.
- These trucks provide a single vehicle capable of collecting both carts and bagged refuse, enable one-person crews to provide cart-based collection, reduce the walking and lifting effort required of collection crew workers, and allow helpers to ride in the cab when two person crews are needed.



Information Technology for Collection Operations:

- Trucks equipped with GPS and on-board monitoring systems improve supervisors’ “line of sight” in order to utilize resources more effectively and enhance safety.
- Radio Frequency Identification Device (RFID) enabled carts and trucks equipped with RFID readers provide information on operations, services provided, and set-out rates keyed to each customer.
- When integrated this package of information technologies provide a wealth of data to improve collection efficiency, verify service, customize targeted outreach and education, manage assets, and optimize collection routes.

Staff Training and Safety:

- Several health and safety issues were noted during field observations that suggest aspects of the City’s employee training and safety program need to be improved.

Incentive System:

- The task system by itself can encourage unsafe behaviors and poor quality of service in order to complete routes as quickly as possible.
- Incentive systems that rely on, or at least incorporate, other forms of recognition and financial reward can help motivate the desired balance of efficiency, quality of service and safety.

Financial Analysis of Collection Scenarios

KCI conducted an operational and financial analysis of four curbside recycling and MSW collection scenarios:

- Current Recycling and MSW Services
- Improved Current Recycling and MSW Services
- Cart-based Single Stream Recycling (SSR) and Current MSW Collection
- Cart-based SSR and Source Separated Organics (SSO) and Reduced Frequency MSW Collection

For modeling purposes, it was assumed that any changes would be implemented in FY2017. Table 1 (see page 8) summarizes the estimated first year (FY2017) financials as well as a 10-year future projection.

Based on the modeling assumptions and cost factors, switching to cart-based SSR collection would be less costly than the current services primarily due to reduced labor costs and tipping fees. However, including the annualized capital costs for more expensive collection trucks and the recycling carts associated with SSD makes the annual cost of SSR greater.

If the City were to increase PAYT fees to help cover the cost of expanded collection services (i.e., cart-based SSR and SSO), a one-time 25% increase is projected to be sufficient to make the cost less than the current service as shown in Table 2 (see page 9).

Table 1: Projected Financials of Collection Scenarios

	Current Service	Improved Current Service	Cart-based SSR	Cart-based SSR & SSO
FY2017:				
Total Revenue	\$1,958,000	\$1,958,000	\$1,719,900	\$1,343,900
Total Operating Expenses	\$3,531,900	\$3,424,200	\$3,172,900	\$3,040,700
Net Annual Cost	\$1,573,900	\$1,466,200	\$1,453,000	\$1,696,800
Total Capital Purchases	\$1,464,500	\$1,687,300	\$2,899,900	\$4,152,800
Annualized Capital Expenses	\$275,100	\$317,000	\$501,000	\$696,100
Net Annual & Annualized Capital Cost	\$1,849,000	\$1,783,200	\$1,954,000	\$2,392,900
FY2017 – FY2026:				
Net Annual Cost:				
Net Present Cost	\$16,495,000	\$15,439,000	\$15,185,000	\$17,378,000
NPC Per Ton	\$133	\$125	\$123	\$140
Net Annual & Annualized Capital Cost:				
Net Present Cost	\$18,871,000	\$18,176,000	\$19,383,000	\$23,143,000
NPC Per Ton	\$152	\$147	\$156	\$187

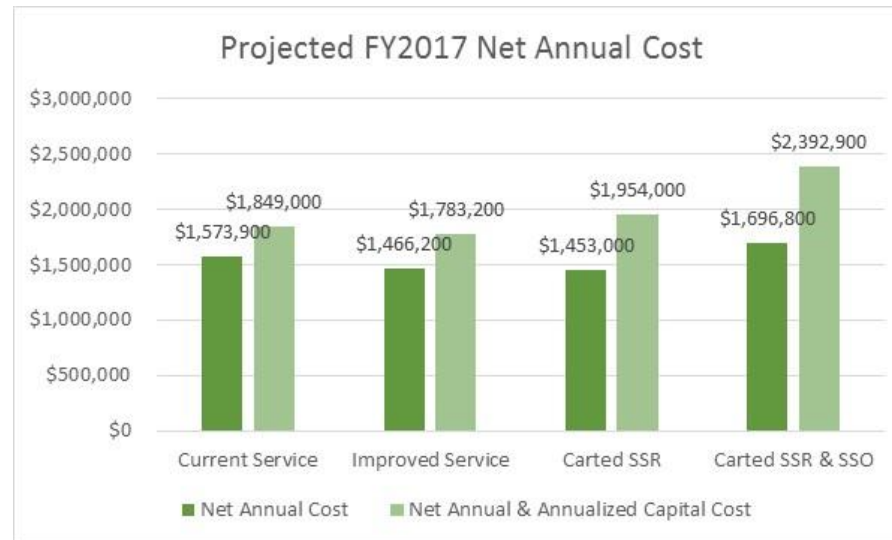
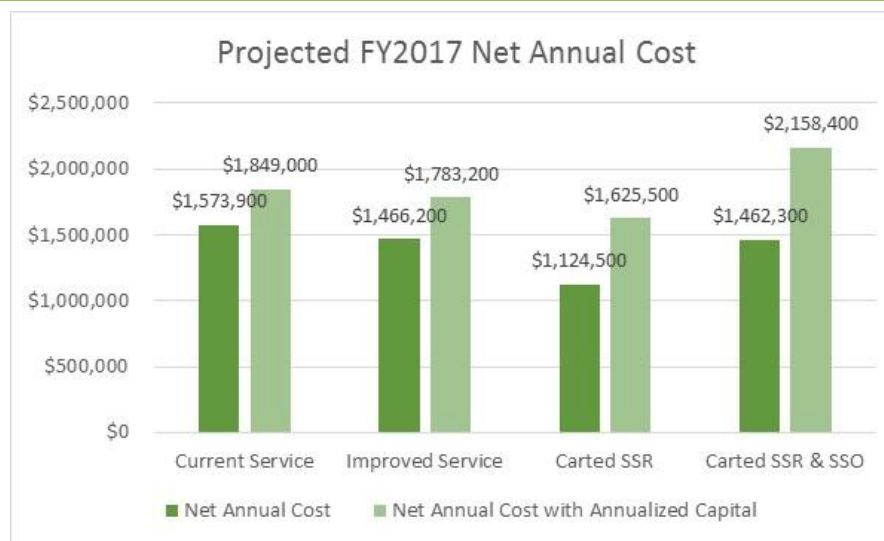


Table 2: Financial Impact of a 25% Increase in PAYT Bag Fees for Cart-based Scenarios

	Current Service	Improved Current Service	Cart-based SSR	Cart-based SSR & SSO
FY2017:				
Total Revenue	\$1,958,000	\$1,958,000	\$2,048,400	\$1,578,400
Total Operating Expenses	\$3,531,900	\$3,424,200	\$3,172,900	\$3,040,700
Net Annual Cost	\$1,573,900	\$1,466,200	\$1,124,500	\$1,462,300
Total Capital Purchases	\$1,464,500	\$1,687,300	\$2,899,900	\$4,152,800
Annualized Capital Expenses	\$275,100	\$317,000	\$501,000	\$696,100
Net Annual & Annualized Capital Cost	\$1,849,000	\$1,783,200	\$1,625,500	\$2,158,400
FY2017 – FY2026:				
Net Annual Cost:				
Net Present Cost	\$16,495,000	\$15,439,000	\$12,234,000	\$15,272,000
NPC Per Ton	\$133	\$125	\$99	\$123
Net Annual & Annualized Capital Cost:				
Net Present Cost	\$18,871,000	\$18,176,000	\$16,432,000	\$21,037,000
NPC Per Ton	\$152	\$147	\$133	\$170



2.2 Summary of Key Recommendations

Upgrade Employee Facilities:

- Upgrade employee facilities to provide at a minimum adequate sanitary and locker facilities and preferably also including employee break and meeting rooms to improve working conditions.

Switch to Cart-based Recycling Collection:

- Portland should convert its curbside single stream recycling to 64-gallon carts while retaining weekly collection frequency.
- Conversion to cart-based collection service should include state-of-the-art information technology: RFID-tagged carts and truck equipped and RFID readers.
- To offset the capital costs associated with cart-based SSR the City should consider a one-time increase in the PAYT bag cost.

Conduct SSO Collection Pilot:

- A one-year SSO collection pilot program in two sections of the City would provide information needed to further evaluate operational and financial feasibility.
- Based on results of the pilot, the City may then decide to design and implement city-wide SSO collection.

Switch to Semi-automated Side-load Trucks:

- Conduct field tests with various types of semi-automated side loaders (SASLs) to confirm ability to operate in automated and semi-automated manner in the operationally diverse Portland neighborhoods.

- If results are positive, the City should consider converting its fleet to SASLs capable of performing both recycling and MSW collection services. The City should also consider retaining one of its current trucks to service difficult-to-collect areas such as dead-ends and very narrow streets.

Switch to Larger Capacity Trucks:

- While keeping within the constraints to operate in Portland’s denser neighborhoods, slightly larger trucks will provide buffer capacity to enable crews to finish their routes in one load.

Incorporate Information Technologies Into Collection Services:

- Portland should incorporate Automatic Vehicle Location (AVL) technology in specifications for new trucks and consider retrofitting existing trucks.
- If and when cart-based collection is implemented for SSR or SSO, carts should include RFID tags and collection trucks should be equipped with RFID readers in order to provide program statistics, assist with customer service, support operational improvements, and manage cart assets.

Staff Training and Safety:

- A more complete review should be undertaken to ensure that all aspects of the City’s training and safety program are in place and functioning properly, including, but not limited to:
 - New employee screening and training.
 - Regularly scheduled safety meetings.
 - Recognition program to reward safe practices.
 - Vehicle safety training specific to each vehicle type.
 - On-the-job “tailgate talks” to review work safety procedures.

- Incident reporting and investigation.
- Policy enforcement such as a repeat offender program and progressive discipline policy.

Incentive System:

- The City should consider developing a more comprehensive incentive system that recognizes and rewards other aspects of worker performance such as:
 - Improving safety.
 - Creativity that results in new and innovative procedures.
 - Excellent customer service.
 - Positive attitudes and being a team player.
 - Mentoring new employees.

PAYT:

- Based on the likely operational and financial impacts associated with eliminating PAYT or switching to an alternate program type, and given the objective of this project to recommend ways to improve operational efficiency and cost effectiveness and achieve recycling goals, the City should retain its current bag-based PAYT system.
- Operational efficiencies and cost reductions may be achieved by including bag inventory management and distribution as part of the bag supply contract.

Privatization:

- KCI does not perceive a compelling reason to privatize from an operational or cost of service perspective. Efforts should be made to improve current operations and implement new services with City-operated

collection, unless the City lacks the financial capacity to capitalize new service in which case privatization may be worth further consideration.

- If the City wants to pursue privatization, KCI recommends that a more in-depth analysis be conducted to identify impacts not only on collection operations, but also consider the needs of displaced workers, disposition of surplus equipment, and the impacts on Public Service administration, Fleet, Human Resource, and union labor agreements. The analysis should also include a survey of jurisdictions with privatized collection service to determine the cost and quality of service.

2.3 Possible Next Steps

If the Portland were to move forward with converting to carted SSR and potentially adding SSO, a number of work tasks would need to be completed. Following is an outline of some of the steps and possible time table for such implementation with a goal of new services starting in FY2017. Given the level of work effort entailed it unlikely that new services could be implemented before that time.

Activity	Timing
Gather information: customer & route counts, set out rates	2015 Q2 – Q3
Conduct customer and route counts and measure recycling set-out rates	2015 Q2 – Q3
Conduct recycling and waste characterization studies	2015 Q2 – Q3
Evaluate and determine whether or not to privatize collection services	2015 Q2 – Q3
Upgrade employee facilities	2015 Q3 – Q4
Implement changes in the safety and training system and incentive program	2015 Q3 – Q4
Conduct field trials of SASL on selected Portland collection routes	2015 Q3
Conduct SSO collection pilot	2015 Q3 – Q4
Develop specifications and procurement documents	2015 Q4
Initiate procurement of carted SSR carts and collection vehicles	2015 Q4
Develop operations plans, e.g., routes and schedules	2016 Q1
Develop an outreach and education plan and program materials	2016 Q1
Distribute SSR carts and initiate outreach and education program	2016 Q2
Initiate carted SSR collection service	2016 Q3

Section 3 Description of Existing Curbside Collection Services

3.1 Profile of Services

Customers:

- All residential single family and a large number of multi-family buildings and municipal buildings.
- An estimated 14,200 single family customers and 1,700 multi-family and municipal buildings served.

Curbside Services Provided by City Crews:

- Weekly curbside collection of recyclables and MSW.
- Seasonal curbside collection of leaves and Christmas trees.
- On-call curbside collection of properly tagged bulky waste.



Recycling Collection Method:

- Citizens place all recyclables out for collection in City & resident-provided bins and bags.
- Recyclables are collected “single stream” with all containers and paper mixed together.

MSW Collection Method:

- Portland has pay-as-you-throw (PAYT) collection.
- City crews only collect MSW placed in official blue bags.
- Residents buy blue bags at various retail outlets.



- A 15-gallon blue bag costs \$1.00; a 30-gallon blue bag costs \$2.00.

3.2 Unique Characteristics of Portland Collection Services

Diversity: Portland is characterized by diverse neighborhoods and street patterns:

- Dense, multi-story, multi-family on the Peninsula.
- Three-story apartments, e.g., University of Southern Maine area.
- Low-rise, single-family residential in North Deering and elsewhere.

Non-uniform Set-outs: Residents put recyclables in a wide variety of bins and containers, e.g., City-provided bins, old plastic file boxes and laundry baskets.

Overflowing Recycling Bins: During limited field observations KCI noted a high percent of overfilled recycling bins with additional materials set beside them, which indicates bins do not provide enough capacity.

Inclement Weather: Winter snow can pose significant challenges, especially on the Peninsula where streets become narrow and residents have limited places to put recyclables and MSW.

KCI Assessment:

- Standardized roll-carts would provide more capacity and reduce the number of containers at curbside.



3.3 Operational Metrics

Table 3: Portland Recycling and Solid Waste Collection Metrics – FY2012-FY2014 Average

	Recycling	MSW
Collection Parameters		
Collection Frequency	1/week	1/week
Days/Week	5/week	5/week
Number of Crews	3	3
Persons/Crew	2	2
Truck Type & Capacity	25-yard rear load	25-yard rear load
Estimated Accounts (Buildings)	14,163 SF 1,697 MF&M	14,163 SF 1,697 MF&M
Tons Per Year Collected	4,310	7,900
Route Calculations		
Average Route Size (Buildings)	1,057	1,057
Average Tons/Crew/Day	5.5	10.1
Average Pounds/Building/Collection	10.5	19.2
Crew Performance Calculations		
Average Work Hours/Week (% of Paid)	1,820 (88%)	1,740 (84%)
Average Buildings/Crew Work Hour	151	158
Average Tons/Crew Work Hour	0.8	1.5

Notes: SF = Single Family (1-4 units); MF&M = Multi-Family & Municipal Buildings.

3.4 Financials

Actual expenditures and revenue for fiscal years 2012 through 2014 were reviewed and compiled. To obtain a complete picture of financials associated with curbside collection services, KCI's analysis included:

- Fund 3114.
- Fleet vehicle purchase, fuel, and maintenance and repair costs for curbside collection.
- Personnel benefits.

Table 4: Collection Services Revenue – FY2012-FY2014

	FY12	FY13	FY14	3-yr Average
PAYT Bag Fees	\$1,591,917	\$1,586,346	\$1,552,217	\$1,576,827
Riverside Recyclables	\$208,856	\$135,803	\$320,554	\$221,738
Other	\$65,362	\$73,062	\$85,276	\$74,567
Total Revenue	\$1,866,135	\$1,795,211	\$1,958,047	\$1,873,131

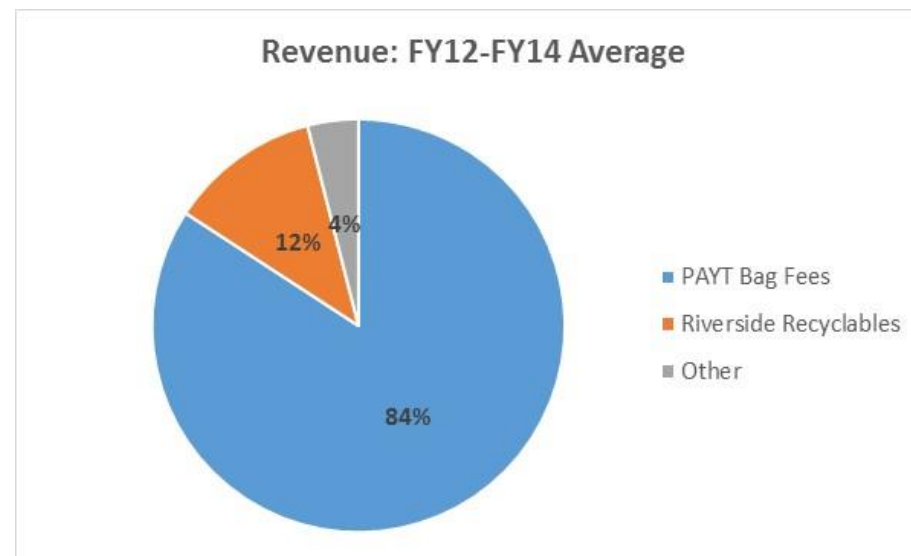
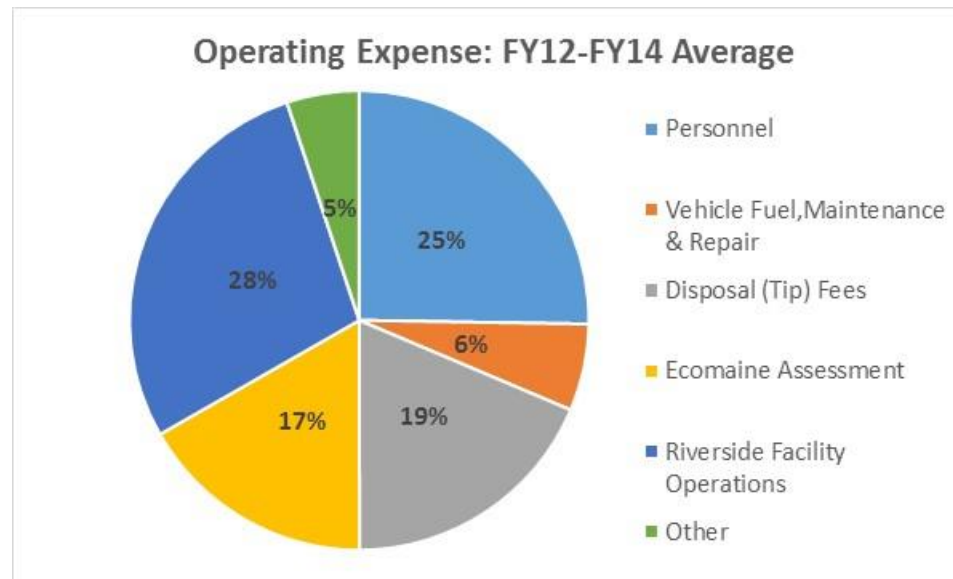


Table 5: Collection Services Expenditures FY2012 – FY2014

	FY12	FY13	FY14	3-yr Average
Personnel	\$929,778	\$1,095,146	\$1,121,582	\$1,048,835
Vehicle Fuel, Maintenance & Repair	\$254,154	\$240,589	\$267,739	\$254,161
Disposal (Tip) Fees	\$830,897	\$825,284	\$661,262	\$772,481
Ecomaine Assessment	\$851,728	\$662,543	\$572,770	\$695,680
Riverside Facility Operations	\$1,248,330	\$1,140,524	\$1,119,192	\$1,169,349
Other	\$224,440	\$215,734	\$195,844	\$212,006
Total Expenses	\$4,339,327	\$4,179,819	\$3,938,388	\$4,152,511



KCI Assessment:

- PAYT is a significant source of revenue helping to finance solid waste services. Service improvements to increase recovery through enhanced recycling or composting would decrease this revenue.
- Expenses have declined in the past three years primarily due to reduced Ecomaine tip fees and assessments.
 - The City's \$70.50 per ton tip fee for MSW disposal at Ecomaine, while relatively low compared to other options in New England, provides a strong avoided cost incentive to increase recovery.
 - Ecomaine recently eliminated an annual assessment that averaged \$696,000 per year over past three years. It also provided a \$200,000 one-time rebate in FY2014.

3.5 Assessment of Current Operations

KCI conducted limited field observations of Portland's curbside collection services over a 2 ½ day period in January 2015. Work activities included:

- Observed recycling and MSW collection crews on various routes to observe routing and collection practices.
- Conducted limited time & motion data recording.
- Conducted limited set-out counts.
- Reviewed morning yard procedures.
- Compiled sample records of daily truck weights.



Lack of Key Program Information

- The City does not have an accurate tally of collection service customers, i.e. the total number of buildings and dwelling units serviced. Nor does it have an accurate tally of customers serviced on each daily collection route.
- The City does not collect data on recycling set-out rates (the percentage of households that set out recyclables on any given week).
- Portland has not conducted a characterization study to determine the composition of recyclables and MSW.
- These data are essential for tracking performance, managing operations, planning service improvements, targeting and refining outreach and education efforts to boost recovery, as well as planning and implementing new services.



Inadequate Employee Facilities:

- The Collection Services facility off Congress Street does not provide proper, basic employee facilities.
- City staff do not have adequate sanitary facilities, lockers, or wash facilities.

Task-Based Incentive System:

- City utilized a task-based incentive system whereby the collection workday is completed when the route is finished and staff is paid for a full shift.
- Recyclable and MSW crews work as teams to complete their routes at approximately the same time.
- Recyclable crews work an average 88% of full-time; MSW crews work an average 84% of full-time.

High Recycling Participation Rate:

- Portland has a high recycling participation rate. Based on limited field observation, weekly set-out rates were approximately 90%, which is likely due to the PAYT-based incentive to reduce blue bag usage.

Overflowing Recycling Bins and Multiple Kinds of Bins:

- Numerous recycling bins placed out for collection were overflowing with excess recyclables. This causes two negative impacts:
 - High potential for litter prior to collection.
 - Increased work effort for the collection crews and spilled materials when collected.
- Customer-provided bins do not conform to standard specification (size, strength, and rigidity) which can make it more difficult for collection crews to service them.
- Customer-provided bins are generally in poor condition which can negatively impact collection.



Large Set-Outs at Multi-Family Buildings:

- Recycling set-outs observed at multi-family buildings consisted of multiple recycling bins – 4 on average and even up to 12 bins.
- These set-outs require numerous trips back and forth from the curb to the truck, and frequently involve both driver and helper, which increases collection time and reduces productivity.

Participation in Private Organics Collection:

- During field observations, KCI made a qualitative assessment of how many households participate in the residential source separated organics (SSO) collection service provided by Garbage to Gardens.
- It appears that approximately 10% of buildings subscribe to this service.

On-Route Collection Performance:

- Overall, crews observed were productive for a manual rear-load collection program in inclement weather.
- By default, rear-load collection trucks require significant walking to and from the curb particularly for the driver when it is necessary to assist the helper with large or clustered set-outs.
- Vehicle routing appeared to double-back over street segments more frequently than what is typically observed in rectilinear street layouts, which may offer an opportunity for route optimization.
- Collection productivity could be improved through the use of technology (see subsequent discussion in Section 5.6).

Table 6: Time & Motion Observations in Parkside Neighborhood

	Recycling	MSW
Bins/Bags Per Stop (Average/Maximum)	4 / 12 bins	5 / 18 bags
Seconds Per Stop (Average/Maximum)	37 / 129 seconds	24 / 73 seconds
Seconds Between Stops (Average/Maximum)	16 / 70 seconds	28 / 201 seconds
On-route Seconds Per Stop (Average)	53 seconds	52 seconds

Collection Trucks at or Beyond Volumetric Capacity:

- Review of daily truck logs and average truck weights over time, indicate that Portland's 25-yard capacity trucks frequently reach their maximum payloads in order to complete their routes in a single load.
- Staff indicated that trucks sometimes need to coordinate remaining capacity and swap route sections to complete their routes as a team, which negatively impacts collection efficiency.

Fast-Paced Work:

- Collection crews were observed working at a fast pace, which may in part be due to an effort to overcome weather-related delays. Fast-paced collection is also encouraged by the task-based incentive system which "rewards" crews for finishing early.
- The consequence of fast-paced work is a tendency to short-cut proper collection and safety practices and increase risks of injury, accidents and property damage. Slips, trips and falls are the more frequency injuries in the solid waste industry.

Improper Collection and Safety Practices:

- Opportunities to reduce risk of physical injury and property damage were observed.
- Reversing truck with a helper on the rear step is a major safety concern. A number of fatalities have occurred in the waste collection industry when a helper has slipped and the driver has backed over his helper. The helper should be on the ground, within mirror eye-sight of the driver, using proper hand signals to direct the driver in reverse.



- Helpers jumping on and off the rear step pose a slip and fall hazard.
- Vehicles zig-zagging across the street center line and crews collecting from both sides of a two-way street increase potential for accident and injury.
- Tossing PAYT bags from the curb into the truck hopper can be a time-saving practice, however it poses the risk of personal injury, damaging personal property and spilled waste from broken bags.



Use of Personal Protective Equipment (PPE):

- Use of proper eye protection was not observed. All employees loading waste or recyclables into rear load vehicle should use eye protection to prevent eye injuries from liquids or solids. Recommended PPE for rear load drivers and helpers include ANSI rated high visibility uniform or vest, work boots with puncture resistant soles, work gloves, and safety glasses. Winter outer garments should not obscure high visibility clothing. Hard hats may be required at disposal sites and employees should be familiar with and comply with disposal site safety policies.

Use of Board in Loading Hopper:

- Recycling crews use a board to “extend” the hopper and prevent spillage during compaction cycles. This indicates that crews are overloading the hopper and should run the compaction cycle more frequently before the hopper is full.
- The board could easily be dislodged during pack cycle and could create a pinch point for helper hands and fingers. It is not properly affixed to vehicle and could easily endanger employees.

KCI Recommendations to Improve Current Operations:

- Obtain current, accurate route-level information regarding the number and type of customers receiving curbside services. This may be accomplished utilizing the City GIS system and mobile applications such as GIS Collector.
- Perform periodic (e.g. annually) set-out counts on sample segments of each route.
- Conduct a recycling and waste characterization study to provide a quantitative basis for program improvements and new program implementation.
- Upgrade employee facilities to provide adequate sanitary and locker facilities.
- Improve compliance with safe collection practices.
- Consider undertaking a detailed time & motion study to establish performance metrics for collection services in various sections of Portland.
- Consider undertaking a route optimization analysis to balance workloads among routes and determine most efficient collection pattern.
- Consider switching to an alternate incentive system that rewards quality and safety as well as productivity, rather than the current task-based incentive that prioritizes speed.

Section 4 Profiles of Other City Collection Services

4.1 Carted Recycling Collection

To provide background and comparative information, KCI identified examples of other cities that provide cart-based single stream recycling (SSR) in dense, urban, multi-family residential neighborhoods.

- Cambridge, MA; East Providence, RI; Lowell, MA; South Portland, ME; and Portland, OR.

General Findings from Other Cities:

- Cities that provide cart-based recycling utilize semi-automated trucks, which are able to collect carts in diverse neighborhoods.
- Semi-automated side loaders provide the greatest flexibility, being able to collect carts in semi-automated mode in neighborhoods where carts need to be wheeled to the truck, as well as in fully-automated mode in neighborhoods where carts are placed curbside without obstructions.
- A comprehensive outreach and education program is essential to help citizens adapt to the carts and learn proper set-out procedures.
- Equipping carts with RFID tags and trucks with RFID readers is recommended.
- 95-gallon carts may be too large for urban neighborhoods where residents have limited space to store carts and sidewalks limit space for setting them out.

- One-person crews are able to operate cart recycling, although a helper can be added in dense neighborhoods to help roll carts to the truck.

Table 7: Profiles of Cart-Based Single Stream Recycling Programs

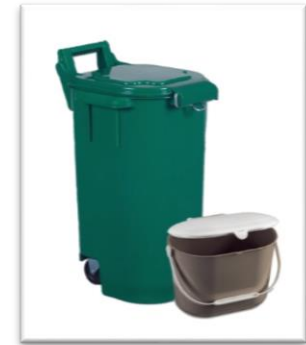
	Cambridge, MA	E. Providence, RI	Lowell, MA	So. Portland, ME	Portland, OR
Single-Family Hhld Served	4,000	n/a	25,000	6,398	151,700
Multi-Family Bldgs Served	6,928	n/a	No	1,544	No
Collection Service Provider					
- Recycling/MSW	Contract/City	Contract/Contract	Contract/Contract	Contract/Contract	Franchise/Franchise
Collection Frequency (per week)					
- Recycling/MSW	1/1	0.5/1	0.5/1	1/1	1/0.5
Container Size					
- Recycling	65, 95-gal	95-gal	96-gal	65-gal	60-gal
- MSW	No carts	No carts	68-gal	35, 65, 95-gal	20, 35, 60, 90-gal
Collection Truck Type					
- Recycling	SASL/SARL	SASL	SASL/SARL	SASL/ASL	SASL/ASL
- MSW	RL	RL	SASL/SARL	SASL	SASL/ASL
Recycling Set-Out Rate	80%	n/a	25%	29%	n/a
Tons/Year					
- Recycling	9,315	4,864	6,013	2,291	491,805
- MSW	14,936	13,729	24,729	5,700	359,056
- Recycling Rate	38%	26%	20%	29%	58%
Program Notes					
- PAYT?	No	No	No	Flat rate	Variable rate
- Year SSR Carts Implemented	2010	2012	2014	2006	2008
- Cart Financing	City Financed	Hauler Provided	City Financed	Hauler Provided	Hauler Provided

Notes: ASL = Automated Side Loader; SASL = Semi-Automated Side Loader; RL = Rear Loader; SARL = Semi-Automated Rear Loader; n/a = Information Not Available.

4.2 Residential Organics Collection

KCI identified examples of other cities that currently operate residential source separated organics (SSO) on a pilot or full-scale basis in communities with dense, urban, multi-family residential neighborhoods.

- Cambridge, MA; New York, NY; Portland, OR; Seattle, WA; and Halifax, NS.



General Findings:

- Providing in-home collection bins and outdoor carts for SSO is critical to maximizing convenience and encouraging participation.
- 10-gallon carts can be sufficient for collecting food scraps, but if yard waste is included then larger carts are required.
- PAYT provides an economic incentive for residents to separate organics.
- Residential SSO collection is not yet widely practiced in the U.S. Communities typically conduct a pilot prior to full-scale implementation to confirm appropriate operational parameters, e.g., container size, expected set-out rates, recovery rates, effective outreach and education methods, etc.
- Reducing MSW collection to every other week in combination with providing weekly SSO collection can be achieved with effective technical support, outreach and education to residents.
- Biodegradable plastic liners help address the “ick” factor for residents, however the bags must be compatible with the organics recycling facility.
- Reliable, cost-effective access to an organics recycling facility is essential but can be challenging.

Table 8: Profiles of Source Separated Organics Collection Programs

	Cambridge, MA	New York, NY	Portland, OR	Seattle, WA	Halifax, NS
Single-Family Hhld Served	4,000	100,000	151,000	145,000	131,000
Multi-Family Bldgs Served	6,928	Included	n/a	100,000	n/a
Yard Waste Included?	No	Yes	Yes	Yes	Yes
Collection Service Provider					
- Recycling	Contract	City	Franchise	Contract	Contract
- SSO/MSW	City/City	City/City	Franchise/Franchise	Contract/Contract	Contract/Contract
Collection Frequency (per week)					
- Recycling/SSO/MSW	1/1/1	1/1/2-3	1/1/0.5	0.5/1/1	1/0.5/0.5
Container Size					
- Recycling	65, 95-gal	No carts	35, 60-gal	60-gal	Blue Bags
- SSO In Home/Curbside	1-gal/12, 21-gal	1-gal/13, 21, 35-gal	1-gal/60-gal	1-gal/13, 32, 90-gal	1-gal/25-gal
- SSO Plastic Liners Allowed?	Yes	No	Yes in 1-gal bin	Yes	Paper only
- MSW	No carts	No carts	20, 35, 60, 90-gal	10,20,30,60,90-gal	No carts
Collection Truck Type					
- Recycling	SASL/SARL	SASL/SARL	SASL	SASL/SARL	ASL/RL
- SSO	RL	SASL/SARL	SASL	SASL/SARL	ASL/RL
- MSW	RL	RL	SASL	SASL/SARL	ASL/RL
Set-Out Rate					
- Recycling/SSO	80%/n/a	50%/n/a	74%/78%	56%/50%	60%/60%
Tons/Year					
- Recycling/SSO	9,315/n/a	n/a	491,800/151,400	407,000	n/a
- MSW	14,936	2,756,000	359,056	317,000	n/a
Program Notes					
- PAYT?	No	No	Variable Rate	Variable Rate	No
- Year SSO Carts Implemented	2010	2013	2011	2006	1998
- SSO Cart Financing	Grant	City Financed	Hauler Provided	Hauler Provided	City Financed

4.3 Bag-Based Recycling Collection

Few examples currently exist of bag-based recycling collection. KCI profiled three major cities in North America: Halifax, NS; Muncie, IN; and Pittsburgh, PA. Information was also obtained regarding the Chicago, IL and Edmonton, AB programs which have converted to cart-based recycling. A few cities also allow a few neighborhoods to use bags while using carts for the majority of customers – Boston being one example.

General Findings:

- Bag-based recycling can increase collection productivity compared to bin-based recycling, but is not as productive as cart-based automated or semi-automated collection.
- Some bag-based programs collected recyclables and MSW at the same time in the same truck, and then subsequently separated the bags of recyclables at transfer stations.
- Bag-based recycling programs in the U.S. have not achieved recovery rates as high as bin-based or cart-based recycling.
- Recyclables must be debagged (either manually or mechanically) and the bags separated prior to subsequent sortation and processing. This requires additional capital investment, resources and operational cost at the MRF.

Program Profiles:

- Halifax, NS:
 - A hybrid collection program that collects recyclable containers (plastic, metal and glass) in blue bags and recyclable paper in clear plastic or paper bags.
 - Recyclables are manually de-bagged on a sorting conveyor.

- Muncie, IN:
 - City provides citizens with vouchers to get free blue bags from retailers.
 - Recyclables are co-collected with MSW in roll carts, so it is not possible to determine participation.

- Pittsburgh, PA:
 - Program has been in operation since the late 1980s.
 - All designated recyclables are collected single stream in blue plastic bags.
 - The same fleet of trucks collect blue bags and MSW in separate loads.
 - Participation rates are reported to average 65% in the blue bag program.
 - The MRF debags recyclables manually; overall residue rate is 15% including bags.
 - The City incurs higher processing costs for its recyclables because they must be de-bagged.

- Chicago, IL:
 - Operated a blue bag program until 2012 when carted single stream recycling was implemented.
 - The program co-collected blue bag recyclables and MSW together in the same truck.
 - Blue bags were then separated out at transfer stations.
 - Bag breakage and subsequent loss and contamination of recyclables was a significant problem.
 - Participation rates in the blue bag programs were very low.

- Edmonton, AB:
 - Previously operated a bag-based recycling collection, but has switched 85% of households to recycling bins and carts.
 - Bags presented a contamination problem at the recycling facility.

Section 5 Assessment of Program Improvement Opportunities

KCI assessed three collection service alternatives for Portland:

- Switching curbside recycling to standardized carts.
- Switching curbside recycling to collection in plastic bags in all or part of the City.
- Implementing residential curbside organics collection for food scraps and yard waste.

In addition, KCI assessed the advantages and disadvantages of privatizing all or part of the City's curbside collection service.

Based on our review of Portland's existing collection services, KCI identified other programs improvement opportunities that the City may wish to consider:

- Conversion of the collection fleet from rear loaders to semi-automated side loaders.
- Increasing the size of the collection fleet from 25 to 28 (or even 31) cubic yard packer bodies.
- Conversion of the collection fleet from diesel fuel to compressed natural gas (CNG).
- Integration of state-of-the-art information technologies in collection trucks and carts.
- Review of the training and safety program.
- Modification of the incentive system.

Each alternative and opportunity is discussed in the following pages outlining advantages and disadvantages, KCI's assessment, and KCI's recommendation.

5.1 Recycling Collection in Carts versus Bins & Bags

Other Communities' Experience Regarding Urban Carted Single Stream Recycling Collection:

- 64-gallon cart size is appropriate; larger 95-gallon carts can be too large for an urban setting.
- 64-gallon carts do not provide sufficient capacity to switch to every other week collection.
- Have semi-automated collection trucks available to serve dense urban areas.
- Educate citizens about proper cart placement away from obstructions when possible.
- RFIS tags and readers are highly recommended to track operations and cart inventory.
- Snow in dense urban areas makes collection more difficult.
- An extra helper can assist with moving carts to truck in crowded areas if necessary.
- A back-up rear-loader can be used to serve specific dead-end and small inaccessible streets.

Advantages of Carts versus Bins or Bags:

- Carts provide more capacity than bins or bags to accommodate all designated recycling materials.
- Carts eliminate the need for citizens to lift and carry their recycling bins to the curb.
- Carts enable a neater street appearance on collection days with fewer, larger recycling containers, fewer loose items, and less litter potential compared to bins.
- Carts keep recyclables dry in inclement weather.



Disadvantages of Carts versus Bins or Bags:

- Carts represent a significant capital cost which can generally be recouped through higher recycling rates, avoided disposal costs, and increased collection productivity.
- Urban neighborhoods with narrow sidewalks provided limited space for carts during winter.

- Carts reduce collection crews' ability to inspect recyclables before dumping them into the truck.
- Carts increase potential for contamination with non-recyclables.
- Cart transition needs to be proactively managed with outreach & education.

Limitations of Bag-Based Recycling Collection:

- Bag collection can be less expensive than bin collection but is more expensive to process.
- Bag-based programs generally achieve a lower recovery rate than cart-based programs.
- Plastic bags pose operational problems for recycling facilities. Bags must be separated from recyclables and they can get stuck in MRF processing equipment and increase maintenance requirements.
- Ecomaine MRF does not have the ability to debug recyclables and separate plastic bags, which would require significant capital investment to install.

KCI Assessment:

- Bins used in the Portland recycling program do not provide enough capacity for citizens' recyclables; overflowing bins are common.
- Multiple bins placed at the curb require collection crews to make many trips back and forth to the truck.
- Carted single stream recycling is rapidly becoming standard practice for municipal recycling programs to increase recovery.

KCI Recommendation:

- Portland should convert its curbside single stream recycling to 64-gallon carts and retain weekly collection frequency.

5.2 Residential Source Separated Organics Collection

Other Communities' Experience Regarding Source Separated Organics (SSO) Collection:

- Residential SSO collection is expanding in the U.S. *Biocycle* magazine identified 198 communities providing food scrap collection to 2.7 million households.
- Well-functioning programs can increase a community's overall diversion rate by 15% to 20%; Portland, OR saw 37% decrease in MSW after implementing SSO collection.
- Conducting a pilot before implementing a full-scale program is important to refine program design and evaluate impacts on MSW quantities and collection service.
- PAYT provides an incentive to separate organics and thus further reduce PAYT bags usage.
- Providing standardized kitchen bins and curbside carts helps boost participation.
- In-home (kitchen) collection bins are important to address "ick" factor of separate collection.
- Degradable plastic bags must be compatible with and approved by the organics recycling facility.
- Odor complaints have not been identified as a significant issue in other SSO collection programs.
- Several programs have had difficulty securing reliable, cost-effective composting facilities to handle their SSO.
- Extensive public outreach, education and technical assistance is necessary to support successful implementation.

Existing SSO Collection in Portland:

- An estimated 10% of households already subscribe to (and pay for) an SSO collection service provided by Garbage to Gardens (\$14 per month) in Portland.

- The service provides residents with a 6-gallon lidded bucket, weekly collection and replacement of their bucket with a clean one.

Opportunity to Reduce MSW Collection Frequency to Every Other Week:

- SSO collection targets most of the putrescible components of MSW, thereby significantly reducing the quantity and odor potential of remaining MSW.
- Consequently, some communities with SSO collection reduce MSW collection to every other week from weekly because SSR and SSO collection divert such a large fraction of the waste stream.

Advantages of Weekly SSO and Every Other Week MSW Collection:

- Encourages citizens to participate in SSR and SSO collection programs and separate as much material as possible.
- Offers the City potential savings in MSW collection by reducing the number of MSW collection crews needed.
- Reduces waste disposal costs by reducing the amount of MSW disposed at Ecomaine.

Disadvantages of Weekly SSO and Every Other Week MSW Collection:

- Can increase contamination in organics, especially non-designated putrescible waste such as disposable diapers.
- Requires significant outreach and education effort to prepare citizens, address concerns, and manage transition.

Note: In Portland, OR, every other week MSW collection was met with initial resistance, but complaints dropped dramatically after initial weeks of program and extensive outreach, education and technical assistance.

- Requires citizens to find a place to keep their SSO collection cart as well as SSR cart.
- Reduces revenue obtained from sale of PAYT bags.

KCI Assessment:

- Portland is well positioned to implement SSO collection because it already has a transfer and compost facility operator that wants the City's organics and many residents already participate in SSO collection.
- CPRC subsidiary MB Bark recently opened a composting facility in Auburn with significant capacity to accept food residuals, which can provide reliable composting capacity for Portland SSO.
- Existing infrastructure at Riverside facility can be upgraded to serve as an SSO transfer site within the City limits, meaning that collection trucks would not have to travel further than they currently do to Ecomaine.
- The key pieces appear to be in place for Portland to implement residential SSO collection; however, more information is needed before implementing a full-scale program.

KCI Recommendation:

- Conduct a one-year SSO collection pilot program in two sections of the City.
- Based on results of the pilot, the City may then decide to design and implement City-wide SSO collection.

5.3 Public versus Privatized Collection Service

Retaining City-Provided Collection Services:

- Advantages:
 - Direct control of the operations, customer service issues and service quality.
 - Direct oversight of compliance with health and human safety standards.
 - Direct control of public relations issues.

- Control of potential job losses associated with service changes and improvements.
 - Less politically-sensitive.
- Disadvantages:
 - Ongoing personnel management responsibility.
 - Greater exposure to accident and environmental liability.
 - Potentially higher cost than privatized service.
 - Reliance on City budget cycles and capacity to finance new equipment.

Privatization of Collection Services:

- Advantages:
 - Provide access to private sector capital to finance new services and equipment.
 - Potentially lower cost due to operational efficiencies and economies of scale.
 - Transfer responsibility for and financial burden of capital purchases to a third party.
 - Reduce administrative and management responsibility to oversee services and staff.
 - Reduce City exposure to accident and environmental liability.
- Disadvantages:
 - Loss of direct control over quality of service and responsiveness to customers.
 - Risk of job loss or reduced pay and benefits for City employees hired by private service provider.
 - Politically sensitive in communities with history of City-provided services.

KCI Assessment:

- Based on the metrics available to KCI, Portland's collection services operate within expected ranges of efficiency and productivity for a two-person rear load truck operation.

- The City operations has capacity to implement improvements and new services if City is able to finance new equipment.
- Privatization would likely reduce the City's costs through lower pay scales and fewer operational supervisory staff. However, the City would lose direct control of service quality, responsiveness to customers, and safety and environmental compliance.
- Any collection privatization initiative would impact other services provided by the City, e.g., Island collection, bulky waste collection, and snow plowing, which presents a unique level of complexity which would need to be carefully evaluated and planned if privatization would be pursued.
- If it were to proceed with privatization, the City would need to accurately determine the number and type of customers that receive collection services. (*Note: KCI recommends this work be undertaken as part of general operational improvements, regardless of whether privatization is being considered.*)
- The decision whether to privatize or maintain City-provided collection services is, in large measure, a policy decision that should be informed by an in-depth analysis of operational and financial impacts.

KCI Recommendation:

- KCI does not perceive a compelling reason to privatize from an operational or cost-of-service perspective. Efforts should be made to improve current operations and implement new services with City-operated collection, unless the City lacks the financial capacity to capitalize new service. In which case, privatization may be worth further consideration.
- If the City wishes to pursue privatization, KCI recommends that a more in-depth analysis be conducted to identify impacts not only on collection operations, but also Public Service administration, Fleet, Human Resource, and labor agreements. The analysis should also include a survey of jurisdictions with privatized collection service to assess the impact on cost and quality of service.

5.4 Semi-automated Side Loaders versus Rear Loaders

Definitions of Automated, Semi-Automated and Manual Collection:

- Automated collection: A driver remains in the truck cab and operates a lift-arm that grabs a container, unloads it into the truck, and places the container back at the curb.
- Semi-automated collection: A driver (and potentially a helper) leaves the cab, rolls containers to truck-side and then operates a lift-arm that grabs a container, unloads it into the truck, and places it back at the curb.
- Automated and semi-automated collection are integral to converting to collection with roll-carts.



Advantages of Rear Loaders (RLs):

- Flexibility to adapt to the diverse neighborhoods in Portland.
- Flexibility to be used for both recycling and trash services.
- Flexibility to collect materials set out in bags, bins and barrels.

Disadvantages of RLs:

- Require a two-person crew to perform collection in Portland.
- Worker rides on back step nearly the entire time while on-route, which poses continual risk of injury as well as exposure to the elements.
- To assist with collection, the driver must walk from the cab to the curb then to the back of the truck which increases the collection time.

Semi-automated Side Loaders (SASLs):

- SASLs with a drop frame behind the cab can be loaded semi-automatically as well as operated in fully automated mode with the lift-arm.
- The drop frame configuration also has a lower loading height than standard automated side loaders, which translates to better clearance when collecting in constrained spaces (e.g. trees & power lines).
- Automated and semi-automated collection are more efficient (seconds per stop) and productive (pounds per worker per hour) than manual collection in most cases.
- Automated and semi-automated collection have lower incidences of worker injury (e.g. lifting injuries) than manual collection.

KCI Assessment:

- Based on observing residential set-outs in the diversity of Portland neighborhoods, recycling collection could be performed with roll-carts and automated or semi-automated collection.
- Monday, Tuesday and Friday routes are well-suited for automated collection with one-person crew.
- Wednesday and Thursday routes are suited for either automated or semi-automated collection with one- or two-person crews.

KCI Recommendation:

- Conduct field tests with various types of SASLs to confirm ability to operate in automated and semi-automated manner in the diverse Portland neighborhoods.
- If results are positive, the City should consider converting its fleet to SASLs capable of performing both recycling and MSW collection services.

- Retain some existing RLs to serve as spare, back-up collection vehicles and if necessary to service difficult-to-collect areas such as dead-ends and very narrow streets.

5.5 Collection Truck Size

General Findings:

- Portions of Portland (especially the Peninsula) have narrow streets, on-street parking, and tight turning requirements.
- Recycling and trash trucks need to be able to maneuver safely and efficiently in all parts of the city to maintain operational flexibility. Currently, the City utilizes 25-yard rear-loaders.



KCI Assessment:

- Weight tickets show that trash trucks regularly reach the upper threshold of their capacity (11 to 12 tons) to complete their collection routes. Crews regularly coordinate to spread remaining waste among trucks in order to complete their routes.
- Additional growth (e.g. through in-fill development or increased per capita waste generation) could push the trash routes beyond their current capacity.
- Chassis capable of handling larger truck bodies can be customized to various wheelbases and other configurations to improve maneuverability.
- Slightly larger truck bodies can be configured to chassis similar to what's being used currently.

KCI Recommendation:

- The City should perform pilot tests with slightly larger truck capacities (e.g. 28 – 31 yards) to determine suitability to maneuver in constrained areas of Portland, most notably the Peninsula.
- If results are positive, the City should convert its fleet to larger truck bodies that provide additional capacity to handle potential growth.

5.6 Information Technology for Collection Operations

Various forms of information and geo-based technology are being applied to waste collection operations.

Automatic Vehicle Location (AVL) and Vehicle Performance:

- AVL devices can be mounted on collection vehicles to monitor their location in real time.
- AVL provides information directly from a vehicle including vehicle location, speed, stopping time, on-board vehicle computer data, route history, and real-time tracking.
- AVL can be integrated with a vehicle's computer system to monitor critical functions such as starts and stops, use of hydraulic lift-arms and compaction systems, etc.
- AVL technology enables remote management of a mobile workforce to maximize the use of assets, and improve the ability to complete routes on time.
- This increases supervisors' "line of sight" in order to utilize resources more effectively.



Radio Frequency Identification (RFID):

- The two core pieces of hardware are:
 - Small RFID tags with unique identification numbers molded into each collection cart or container.
 - RFID tag readers mounted on each collection vehicle capable of scanning and RFID tags.
- When a tagged container is delivered to a customer, the unique RFID tag is permanently assigned to that customer location.

Integration of GPS and RFID Technologies Offers Numerous Advantages:

- Actual Collection Performance Data: RFID and AVL provide real-time data on collection operations including vehicle location, routing, stops, container lifts (semi-automated and automated), and time factors associated with each activity.
- Service Verification: RFID systems record when a collection vehicle is at a given location and when a cart is serviced.
- Set-Out and Participation Data: RFID tracks actual set-outs and overall participation rates by individual customer address.
- Education and Outreach Support: RFID contributes to targeted outreach and education program efforts. Messaging can be customized by customer or neighborhood.
- Asset Management: Carts are a major capital asset. Without RFID, there is no way to track this asset's whereabouts, or life cycle for warranty purposes.
- Route Optimization: Before RFID, route optimizers used postal addresses to route vehicles along street centerlines using generally available maps. Now, route optimizers can use collection data that includes the latitude and longitude of the actual container placement, making routes more efficient and the optimizer process cleaner and faster.

- Incentives: RFID is being used as the platform for incentive-based recycling programs. Whether it's billing for service or coupon programs, RFID is the meter to manage incentives.

KCI Assessment:

- Integrated GPS and RFID technologies offer numerous opportunities to improve collection efficiency, support customer service, and target outreach and education to maximize program participation.
- It is critical that an accurate container assembly and distribution (A&D) service is carried out as part of program start-up, especially if the containers are RFID equipped.
- A reliable database is the most valuable facet of an RFID system, and its usefulness depends on correctly recording container locations at the time of delivery.

KCI Recommendations:

- Portland should incorporate AVL technology in specifications for new trucks and consider retrofitting existing trucks.
- If and when cart-based collection is implemented for SSR or SSO, carts should include RFID tags and collection trucks should be equipped with RFID readers in order to provide program statistics, assist with customer service, support operational improvements, and manage cart assets.

5.7 Compressed Natural Gas Collection Trucks

General Findings:

- Compressed natural gas (CNG) is less costly than diesel fuel: CNG has averaged approximately 50% of diesel costs recently.

- CNG proponents claimed that CNG trucks have lower engine and powertrain maintenance costs, however the waste collection industry does not yet have long-term experience yet to confirm this.
- CNG has lower GHG and other emissions (Sox, NOx, & particulates) than diesel or gasoline.
- CNG requires a dedicated fueling facility.
- CNG engines have lower power for comparable displacement so larger engines are needed to have comparable load performance as diesel.

KCI Assessment:

- City is in process of purchasing first CNG refuse truck and researched the advantages, disadvantages and requirements for converting to a CNG fleet.

KCI Recommendation:

- If experience with the first truck is positive, the City should proceed with full conversion of Recycling & Trash fleet.

5.8 Staff Training and Safety

General Findings:

- Solid waste collection is one of the most hazardous professions in the U.S. in terms of injuries and fatalities.
- The primary reasons being the use of powerful, specialized equipment, repetitive lifting, and stressful, unpredictable work conditions.
- Injuries and accidents are prevented by having adequate training and safety protocols that ensure compliance with safety standards.

KCI Assessment:

- KCI did not conduct a detailed assessment of the collection staff training program; however based on observations and limited discussion during the field assessment, it appears that opportunities exist to improve staff training and safety.
- During FY2012-FY2014, the City collection service incurred an average \$42,765 per year in workers' compensation claims. Other financial costs include additional overtime expenses for existing employees and additional costs for temporary workers.
- Operational impacts of worker injuries include the potential for reduced crew productivity due to use of less experienced workers, fatigue associated with increased responsibility among existing workers, and increased potential for customer service issues.
- Training, safety protocols, and compliance/enforcement mechanisms are essential.

KCI Recommendations:

- KCI did not perform an in-depth assessment of Portland's training and safety programs, so the following recommendation is offered as a guideline to assess if any aspects may require improvement.
- A more complete review should be undertaken to ensure that all aspects of the City training and safety program are in place and functioning properly, including, but not limited to:
 - New employee screening and training.
 - Regularly scheduled safety meetings.
 - Recognition program to reward safe practices.
 - Vehicle safety training specific to each vehicle type.
 - On-the-job "tailgate talks" to review work safety procedure.
 - Incident reporting and investigation.

- Policy enforcement such as a repeat offender program and a progressive discipline policy.

5.9 Incentive System

General Findings:

- Incentive programs are fundamental to motivating employees and providing structure for accomplishing organizational goals. Incentives are basically financial- or recognition-based, or a combination of both.
- With any program, checks and balances should be put into place to discourage workers from activities that oppose organizational goals and objectives.

KCI Assessment:

- Portland utilizes a task-based incentive system that compensates employees for a full workday, regardless of how many hours are actually spent completing daily tasks.
- The task system has been a standard in the solid waste industry for decades; however, counter-productive behavior is often associated with the task system.
- The task system by itself can encourage unsafe behaviors and poor quality of service by workers trying to complete routes as quickly as possible.
- Incentive systems that rely on, or at least incorporate, other forms of recognition and financial reward can help motivate the desired balance of efficiency, quality of service, and safety.

KCI Recommendation:

- The City should consider developing a more comprehensive incentive system that recognizes and rewards other aspects of worker performance such as: improving safety; creativity that results in new and

innovative procedures; excellent customer service; positive attitudes and being a team player; and mentoring new employees.

5.10 Pay-As-You-Throw (PAYT) Programs

Types of PAYT Programs:

PAYT comes in a range of forms depending on jurisdictions' objectives and preferences.

- **Bag, Tag & Sticker Programs:** Generators purchase special color-coded or imprinted plastic bags or stickers for their waste. The predetermined price of each bag or sticker includes some or all of the cost of waste services. Portland is an example of this type of program.
- **Can/Cart Programs:** Generators pay a fixed price based on the size or number of containers they select for their waste service, e.g. 30, 60 or 90 gallons of service. The larger or greater number of waste collection containers used, the more a generator will pay.
- **Hybrid Programs:** Generators pay a fixed amount for a specified base volume of waste service e.g., one 30-gallon bag per week per dwelling unit. Waste placed out for collection that exceeds this amount accrues an additional charge.
- **Weight-Based Programs:** Weight is either determined when generators drop off solid waste or collection vehicles are equipped with technology that can assess the weight of the contents of a container at curbside and charge accordingly.

General Findings:

- It is widely acknowledged that PAYT communities discard less MSW than non-PAYT communities. Specific information for Ecomaine communities in FY2014 summarized in the following table indicates that PAYT communities discard 37% less MSW than non-PAYT communities.

Table 9: Amount of MSW Discarded by Ecomaine Communities (Pounds/Capita/Month)

All PAYT Communities	All Non-PAYT Communities
25.5	40.6
Portland	South Portland
24.4	40.0

- Research by KCI did not identify any communities in New England that have abandoned PAYT in recent years.

KCI Assessment:

- Based on Table 9, if Portland were to eliminate PAYT and per capita MSW discards equaled South Portland, it would discard an estimated additional 6,010 tons per year.
- If this were to happen, there would be two significant financial consequences in addition to the operational impacts on City collection:
 - Higher costs for disposal: 6,010 at \$70.50 per ton would mean \$423,700 more in disposal fees
 - Lost revenue from sale of PAYT bags: this equaled approximately \$1,522,000 in FY2014
- Alternately, Portland could switch to a different type of PAYT program:

- Switching to a sticker-based program would require citizens buy stickers instead of bags and place the correct number of stickers on their garbage bags (e.g., one sticker per 15 gallon bag and two stickers per 30-gallon bag). Operational consequences of this would include:
 - Staff would need to inspect each bag to ensure proper stickers, which could slow down operations.
 - City would incur lower costs for managing and distributing sticker inventory versus bags.
- Switching to a can/cart-based program would require each customer choose a specific size and/or number of containers. Operational and financial consequences of this would include:
 - The City would need to manage a diverse inventory of deployed cans/carts and track the size and number of containers at each customer location.
 - The City would incur significant up-front costs to purchase and deploy carts.
 - The City would also need to implement a customer billing system, which could potentially be integrated into City property tax bills or established as a separate solid waste service bill.
 - A can/cart-based program would facilitate conversion to automated and semi-automated collection which would potentially yield greater operational efficiency and cost savings.
- Switching to a hybrid program would have the following potential operational requirements:
 - The City would need to implement on-route monitoring systems to track quantities above the specified base service level.
 - It would also need to implement a customer billing system.
- Switching to a weight-based program would have the following potential requirements:
 - The City would need to deploy automated collection containers and trucks with on-board weighing systems.
 - It would also need to implement a customer billing system.

KCI Recommendation:

- KCI did not perform an in-depth assessment of Portland’s PAYT program options. However, based on the likely operational and financial impacts associated with eliminating it or switching to an alternate program type, and the objective of this project to recommend ways to improve operational efficiency and cost effectiveness and achieve recycling goals, the City should retain its current bag-based PAYT system.
- Operational efficiencies and cost reductions may be achieved by including bag inventory management and distribution as part of the supply contract. This would eliminate the need for City staff to perform these functions which may be more cost effectively provided by the vendor.

Section 6 Analysis of Collection Scenarios

KCI conducted an operational and financial analysis of four curbside recycling and MSW collection scenarios:

- Current Recycling and MSW Services
- Improved Current Recycling and MSW Services
- Cart-based Single Stream Recycling (SSR) and Current MSW Collection
- Cart-based SSR and Source Separated Organics (SSO) and Reduced Frequency MSW Collection

The Current Services Scenario provides a baseline against which the three alternate scenarios can be compared to assess operational and financial impacts. Key operational parameters are summarized in the following table. The operational parameters for alternative scenarios are based on key recommendations outlined in Section 4.

Table 10: Basic Features of Four Collection Scenarios Considered

	Current Service		Improved Service		Cart-based SSR		Cart-based SSR & SSO		
	SSR	MSW	SSR	MSW	SSR	MSW	SSR	SSO	MSW
Collection Frequency	W	W	W	W	W	W	W	W	EOW
Collection Container	Current	PAYT Bag	Current	PAYT Bag	64-gal Cart	PAYT Bag	64-gal Cart	10-gal Cart	PAYT Bag
Truck Size, Type, & Fuel	25-yd RL Diesel	25-yd RL Diesel	28-yd RL CNG	28-yd RL CNG	28-yd SASL CNG	28-yd SASL CNG	28-yd SASL CNG	28-yd SASL CNG	28-yd SASL CNG
Crew Size	2	2	2	2	1	2	1	1	2

Notes: W = Weekly; EOW = Every Other Week; RL = Rear Loader; SASL = Semi-Automated Side Loader.

6.1 Description of Scenarios

All four scenarios were based on common parameters with regards to the number of customers served and financial factors as shown in the following table.

Table 11: Common Assumptions and Inputs for All Scenarios

Parameter	Value
Customers/Buildings Served:	
Single Family	14,163
Multi-family & Municipal	1,697
Annual Growth Rate	0%
Financial Projection Factors:	
Interest Rate	4.5%/year
Inflation Rate	2.0%/year
PAYT Bag Fees:	
15-gal Bag	\$1.00
30-gal Bag	\$2.00
Ecomaine:	
MSW Tip Fee	\$70.50/ton
Recyclable Revenue	\$0/ton
Operating Cost Factors:	
Salary & Wages	Current \$/FTE
Benefits	29.6%
Overtime & Temporary Labor	Current \$/FTE
Workers Compensation	Current \$/FTE

Note: FTE = Full Time Equivalent

Increased Recovery Rates:

- Current Scenario and Improved Current Scenario:
 - Same recovery rate as FY2014.
 - 4,364 tons of recyclables and 8,026 tons of MSW.
 - Overall 35% recovery rate.
- Cart-Based SSR:
 - Additional recovery of 65% of designated recyclable materials still present in MSW.
 - Estimated to equal an additional 1,230 tons.
 - Overall 45% recovery rate.
- Cart-Based SSR and SSO:
 - Additional recovery of 65% of designated recyclable materials still present in MSW.
 - Recovery of 65% of food waste, yard waste and compostable paper in MSW.
 - Estimated to equal an additional 1,230 tons of SSR and 1,940 tons of SSO
 - Overall 61% recovery rate.

Increased Collection Truck Size:

- For the three alternative scenarios, KCI has assumed that Portland converts its existing fleet from 25-yard to 28-yard trucks.
- In general, the increased capacity will provide a buffer to reduce operational impact of daily and seasonal fluctuations in quantities of MSW and recyclables.

Conversion to CNG:

- For the three alternative scenarios, KCI has assumed that Portland converts its existing fleet to CNG.

- Based on general industry guidelines, it is estimated that:
 - CNG fuels prices = 50% of diesel fuel.
 - CNG vehicle maintenance costs = 50% of diesel trucks.

Conversion to Semi-Automated Side Loaders:

- For the SSR and SSR & SSO scenarios, KCI has assumed that Portland converts from rear loaders (RLs) to semi-automated side loaders (SASL) because these trucks provide combined ability to collect SSR and SSO carts as well as improve efficiency and safety of manual MSW collection as noted in Section 4.

New Trucks:

- Typical collection fleet replacement schedules are based on seven years of front-line use. The City's current fleet of collection trucks has reached the end of their service life for daily service.
- For all four scenarios, KCI has assumed a new fleet of vehicles is purchased for FY2017 using municipal borrowing/bonding capacity.
- Based on information provided by City staff and truck suppliers, KCI estimated the capital cost for new collection trucks in the following table.

Table 12: New Collection Truck Capital Costs

Truck Type	Capital Cost
25-yd RL Diesel	\$230,000
28-yd RL CNG	\$265,000
28-yd SASL CNG	\$295,000

SSR and SSO Carts:

- Cart vendors generally provide 10-year warranties that include replacement of carts that fail due to normal wear and tear.
- During their service life, some carts will require maintenance and repair. This work may be performed by City personnel or it may be contracted independently through the cart supplier. KCI included the cost of a half-time City employee to cover maintenance & repair costs in the two cart-based scenarios.
- For the SSR and SSR & SSO scenarios, KCI has assumed that new containers are purchased in FY 2017 using municipal borrowing/bonding capacity. Capital cost assumptions are provided in the following table which include RFID tags and assembly and distribution.

Table 13: Collection Cart Capital Costs

Cart Type	Capital Cost
64-gal SSR Cart	\$50
10-gal SSO Cart	\$40
1-gal SSO Kitchen Bin	\$6

Note: Cost includes RFID tags and cart assembly and distribution.

Timing of Implementation:

- For the purpose of the analysis, KCI assumed the three alternate scenarios would be implemented City-wide in FY2017.

6.2 Results of Analysis – Operational Metrics

Table 14: Estimated Operational Metrics for Collection Scenarios

	Current Service		Improved Service		Cart-Based SSR		Cart-based SSR & SSO		
	SSR	MSW	SSR	MSW	SSR	MSW	SSR	SSO	MSW
Customers (Buildings)	15,860	15,860	15,860	15,860	15,860	15,860	15,860	15,860	15,860
Collection Frequency (per week)	1	1	1	1	1	1	1	1	0.5
Number of Crews	3	3	3	3	3	3	3	2	2
Average Route Size	1,057	1,057	1,057	1,057	1,057	1,057	1,057	1,586	793
Tons/Year	4,364	8,026	4,364	8,026	5,595	6,795	5,595	1,944	4,850
Average Tons/Crew/Day	5.6	10.3	5.6	10.3	7.2	8.7	7.2	3.7	9.3
Average Lbs/Building/Collection	11	19	11	19	14	16	14	5	24
Average Building/Crew Work Hour	151	158	151	158	151	151	151	227	113
Average Tons/Crew Work Hour	0.8	1.5	0.8	1.5	1.0	1.2	1.0	0.5	1.3

6.3 Results of Analysis – Financial Metrics

Table 15: Projected Revenue and Expenses for FY2017

	Current Service	Improved Service	Cart-Based SSR	Cart-Based SSR & SSO
Revenue				
PAYT Bag Fees	\$1,552,217	\$1,552,217	\$1,314,107	\$938,075
Other Revenue	\$405,830	\$405,830	\$405,830	\$405,830
Total Revenue	\$1,958,047	\$1,958,047	\$1,719,937	\$1,343,905
Operating Expenses				
Personnel	\$1,190,235	\$1,190,235	\$1,007,371	\$1,007,371
Vehicle Fuel, Maint. & Repair	\$284,127	\$176,372	\$196,637	\$217,973
Disposal (Tip) Fees	\$662,119	\$662,119	\$575,323	\$438,251
Riverside Facility Operations	\$1,187,696	\$1,187,696	\$1,187,696	\$1,187,696
Other	\$207,831	\$207,831	\$205,876	\$189,320
Total Operating Expenses	\$3,532,006	\$3,424,252	\$3,172,902	\$3,040,610
Net Annual Cost	\$1,573,959	\$1,466,205	\$1,452,965	\$1,696,706
Capital Purchases				
Collection Trucks	\$1,464,467	\$1,687,321	\$1,878,338	\$2,191,395
Curbside Roll Carts	\$0	\$0	\$1,021,572	\$1,961,418
Kitchen Organics Bins	\$0	\$0	\$0	\$0
Total Capital Purchases	\$1,464,467	\$1,687,321	\$2,899,910	\$4,152,813
Annualized Capital Expenses	\$275,111	\$316,975	\$500,987	\$696,075
Net Annual & Annualized Capital Cost	\$1,849,070	\$1,783,180	\$1,953,952	\$2,392,780

Table 16: Projected 10-Year Net Present Cost for FY2017-FY2026

	Current Service	Improved Service	Cart-Based SSR	Carted-Based SSR & SSO
Net Annual Cost:				
Net Present Cost	\$16,495,000	\$15,439,000	\$15,185,000	\$17,378,000
NPC Per Ton	\$133	\$125	\$123	\$140
Net Annual & Annualized Capital Cost:				
Net Present Cost	\$18,871,000	\$18,176,000	\$19,383,000	\$23,143,000
NPC Per Ton	\$152	\$147	\$156	\$187

Summary of Financial Results:

- Reduced revenue from sale of PAYT bags associated with increased diversion of SSR and SSO.
- Reduced personnel costs due to smaller crew sizes for semi-automated cart-based SSR and SSO collection.
- Reduced vehicle fuel, maintenance and repair costs associated with conversion to CNG trucks. This is partially offset by higher maintenance and repair costs associated with SASLs which have more extensive hydraulic and mechanical systems than RLs.
- Reduced disposal tip fees associated with increased diversion of SSR and SSO.
- All four scenarios are based on purchasing new fleets of collection trucks in FY2017.
- The cart-based SSR and cart-based SSR & SSO scenarios entail significant capital cost in FY2017 to purchase curbside carts, and in the case of SSO in-home bins as well.
- Annualized capital costs were estimated using 7-year service life for collection trucks and 10-year manufacturer's warranty for collection carts.

6.4 Options for Financing System Improvements

Several options exist for Portland to finance the costs associated with implementing cart-based SSR or SSR and SSO.

Increased PAYT Fees:

- The current rates have been in effect since the PAYT program was implemented along with curbside recycling.
- The PAYT fee was presented to the public as a method to finance the added service of curbside recycling.
- The provision of carts for SSR will increase recycling convenience and capacity to residents, which may provide a good basis for increasing PAYT fees.
- Likewise, the addition of cart-based SSO collection service would be a brand new service that further increases residents' ability to divert waste from disposal. Residents who currently subscribe to private SSO collection pay \$14 per month – the equivalent of 14 15-gallon PAYT bags.
- KCI assessed the financial impact of a 25% increase in PAYT bag costs (see Table 17, following page):
 - \$1.25 per 15-gallon bag.
 - \$2.50 per 30-gallon bag.
- We project that such an increase would enable Portland to implement SSR at lower cost than the current program. SSR & SSO has a lower project net annual cost, however the net annual cost including annualized capital is project to be higher than the current program.

Table 17: Financial Impact of a 25% Increase in PAYT Bag Fees for Cart-Based Scenarios

	Current Service	Improved Service	Cart-based SSR	Carted-based SSR & SSO
FY2017:				
Total Revenue	\$1,958,047	\$1,958,047	\$2,048,464	\$1,578,423
Total Operating Expenses	\$3,532,006	\$3,424,252	\$3,172,902	\$3,040,610
Net Annual Cost	\$1,573,959	\$1,466,205	\$1,124,438	\$1,462,187
Total Capital Purchases	\$1,464,467	\$1,687,321	\$2,899,910	\$4,152,813
Annualized Capital Expenses	\$275,111	\$316,975	\$500,987	\$696,075
Net Annual & Annualized Capital Cost	\$1,849,070	\$1,783,180	\$1,625,425	\$2,158,262
FY2017 – FY2026:				
Net Annual Cost:				
Net Present Cost	\$16,495,000	\$15,439,000	\$12,234,000	\$15,272,000
NPC Per Ton	\$133	\$125	\$99	\$123
Net Annual & Annualized Capital Cost:				
Net Present Cost	\$18,871,000	\$18,176,000	\$16,432,000	\$21,037,000
NPC Per Ton	\$152	\$147	\$133	\$170

Grants to Offset Portion of Cost for Carts:

- The Curbside Value Partnership operates a grant program specifically aimed at helping communities switch to cart-based SSR. The grants can include:
 - Up to \$100,000 toward the purchase of roll-carts for SSR.
 - Up to \$25,000 towards outreach and education.
 - Technical assistance and use of pre-designed outreach and education materials.
- The grants are specific to cart-based SSR and cannot be used for SSO collection.

Lease Financing

- If the City is constrained in its ability to finance the purchase of new trucks, some truck vendors will lease new collection vehicles to the City and provide guaranteed terms for re-purchase.

Privatization:

- If financing the capital cost of new trucks and carts presents a significant barrier to Portland, the City could choose to privatize as part of upgrading to cart-based SSR collection. It could do likewise for cart-based SSO collection.
- The provision of new carts would be included in the service agreement with the private company being responsible for providing the carts and recouping the cost through services fees.
- In such a scenario, the City would need to enter a long term service contract of sufficient length (e.g. five to 10 years) in order to spread out the cost of carts.



Michael J. Bobinsky
Director of Public Services

To: TSE Committee, David Marshall, District 2 City Councilor Chair

From: Michael J. Bobinsky, Director of Public Services
Jeremiah Bartlett, Transportation Systems Engineer
Christine Grimando, Senior Planner

Date: July 10, 2015

Subject: Adoption of Project Advisory Committee Recommendation for State and High Two-way Conversion Report

The Project Advisory Committee met on June 3, 2015 to consider the final recommended report on the feasibility of converting State and High Streets from one-way to two-way traffic. The Project development included a public engagement process that provided for several key meetings of the PAC and public meetings where non PAC members were invited to offer comments on the recommendations being developed from the Report. While there were dissenters, the majority of the PAC members attending endorsed the reports' conclusion that it was feasible to make State and High Streets two-way and to pursue its implementation. The PAC vote taken at the June 3 meeting was 7 in favor, 2 against and 2 abstained. The recommendation is now to be advanced to the Transportation Sustainability and Energy Committee (TSE) for review and consideration of a recommendation to the City Council. Our Project Manager and consultant Tom Errico will make a brief presentation on the report and answer questions on the recommendations. Staff will be on hand as well to answer questions. A copy of the presentation provided to the PAC along with the June 3, 2015 meeting notes are included with this memorandum.

The State and High Streets Two-Way Conversion Study was not meant to make the case for a change to the current traffic pattern, but to establish if an idea that had percolated up in public discourse and in local policy documents for over a decade was technically feasible to pursue. The impetus for restoring State and High Streets to two-way traffic precedes this feasibility study. State and High Streets are also slated for much needed investments in traffic signals as well as related infrastructure and streetscape improvements, offering a unique opportunity to coordinate improvements of both State and High Streets to better align them with current transportation goals before making any substantial financial investment in the current configuration.

The original conversion of State and High Streets to one-way were not isolated policy decisions, but emerged in a wider framework for urban land use and transportation planning that the City of Portland has moved decisively away from. Converting State and High Streets from two-way to one-way traffic were primary recommendations in the 1967 Victor Gruen Associates plan for downtown Portland, *Patterns for Progress*, that outlined urban renewal initiatives, such as the creation of the Franklin Arterial and the conversion of Spring Street to a four lane arterial, that Portland is now



Michael J. Bobinsky
Director of Public Services

actively working to transform back to context-sensitive, walkable, multi-modal public spaces. Each of these urban renewal initiatives prioritized automobile mobility not in conjunction with other modes, but at the expense of them. In contrast, our current transportation strategies, our Complete Streets policy, sustainability and land use policies, support the diverse functions of the historic street pattern that restoring State and High Streets to two-way would enable.

Evaluating the feasibility of restoring these streets to two-way is in step with emerging national best practices in this arena. Dozens of communities in the United States have restored or are engaged in restoring two-way traffic on streets that were converted to one-way in the second half of the 20th century. Several studies have documented the benefits for reduced crime, safety, traffic calming, economic development, neighborhood character and walkability. The examples are diverse in region, scale, regional context, and particular challenges, but the breadth of these initiatives (Louisville, KY; Charleston, SC; Fargo, ND; Lowell, MA; Colorado Springs, CO; Providence, RI; Woonsocket, RI; and Alma, MI are only a few of many examples) are testament to the timeliness of this effort, as other locales also pursue the benefits of reversing the spate of conversions that occurred over a several decade window in the United States. There has also been significant writing on this subject in recent years by academics, journalists and practitioners, evaluating the impacts of such initiatives (such as: *The Case Against One Way Streets* <http://www.citylab.com/commute/2013/01/case-against-one-way-streets/4549/> ; *Downtown Streets: Are We Strangling Ourselves on One-Way Networks?*: http://nacto.org/docs/usdg/are-we-strangling-ourselves-on-one-way-networks_walker.pdf; *'Two-Ways' to Fix Our Neighborhoods* <http://www.planetizen.com/node/75629/two-ways-fix-our-neighborhoods>).

We look forward to our presentation and discussion with the TSE Committee as you consider the recommendations.

State & High Streets Two-Way Conversion Feasibility Study

Public Advisory Committee and Community Advisors Meeting

June 3, 2015



Agenda

- Welcome and Introductions
- Meeting Agenda
- Study Background/Purpose and Need
- New Study Data
- Review of Findings
- What We Heard at Public Workshops
- Discussion
- Vote by Advisory Committee
- Next Steps



Study Background

- Route 77 Designation via Million Dollar Bridge to Danforth Street to Route 1 – Pre 1938
- Route 77 Designation to State Street – 1955
- State Street and High Street Converted to One-Way – 1972
- PACTS Deering Oaks Park Traffic Study (including two-way conversion of State and High) – 1999
- Portland Peninsula Transportation Study – 2005
- State Street & High Street Preliminary Feasibility Study – 2012



Purpose and Need Statement

The purpose of the State and High Streets Two-Way Conversion Study is **to study the effects of re-introducing two-way traffic flow on State and High Streets**. The study will evaluate whether changes in transportation infrastructure will support the existing mix of land uses and neighborhoods in the study area. Both streets need to serve automobiles, trucks, transit, pedestrians, and cyclists equitably, as well as serve both those who are traveling within the City as well as through the City. From a safety and health perspective, new infrastructure should be designed to accommodate pedestrian and cyclist safety and increase livability. From an urban design perspective, changes should provide a positive experience, and actively connect historic neighborhoods. Changes should also serve the transportation needs of those living off the peninsula by creating convenient access to city amenities and work places. Changes should be compatible and coordinate with other related City planning projects, including the redesign of Congress Square.

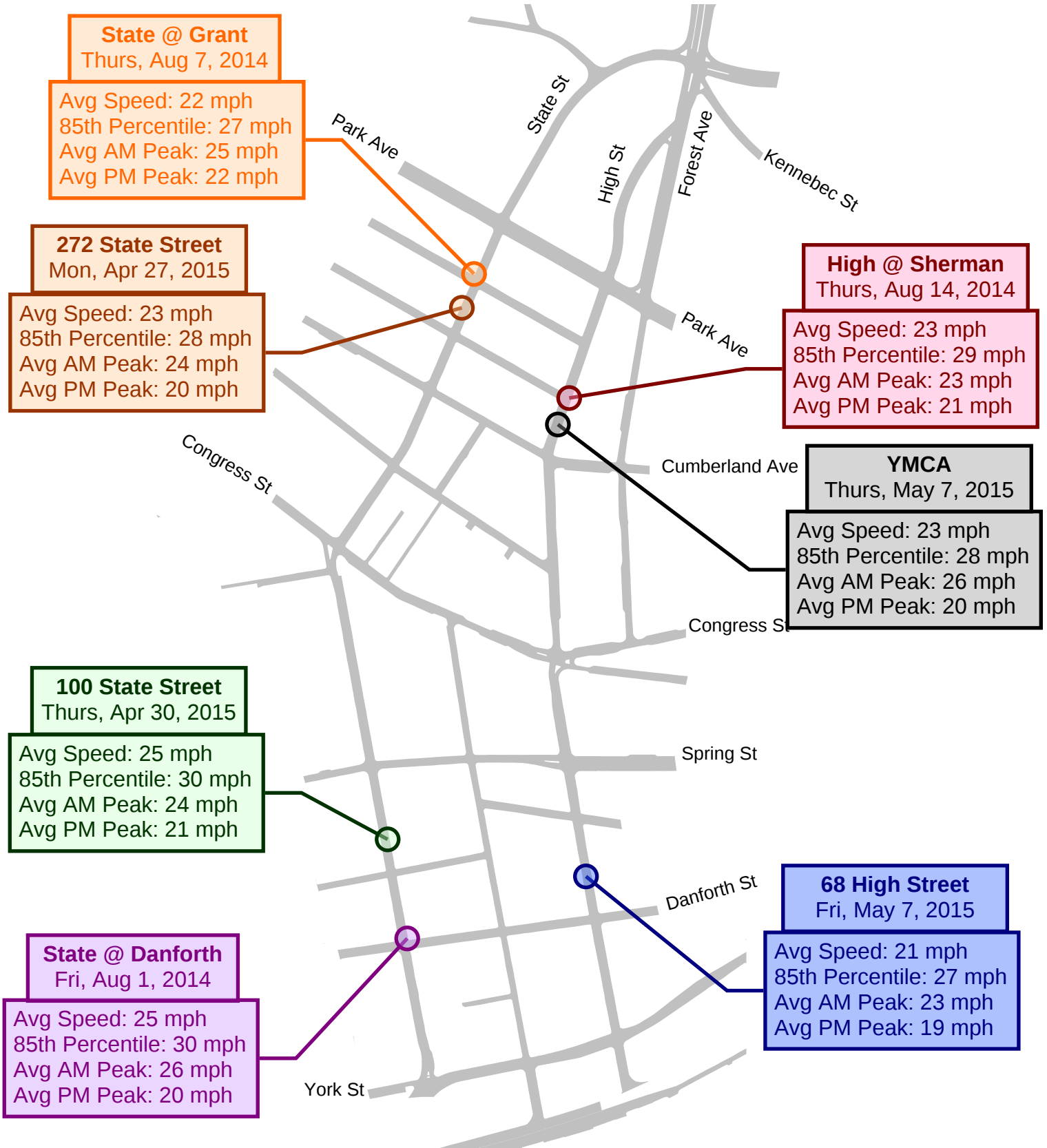


New Study Data

- Speed analysis
- Unsignalized intersection analysis
- Truck deliveries
- Cost of annual winter maintenance
- Total cost



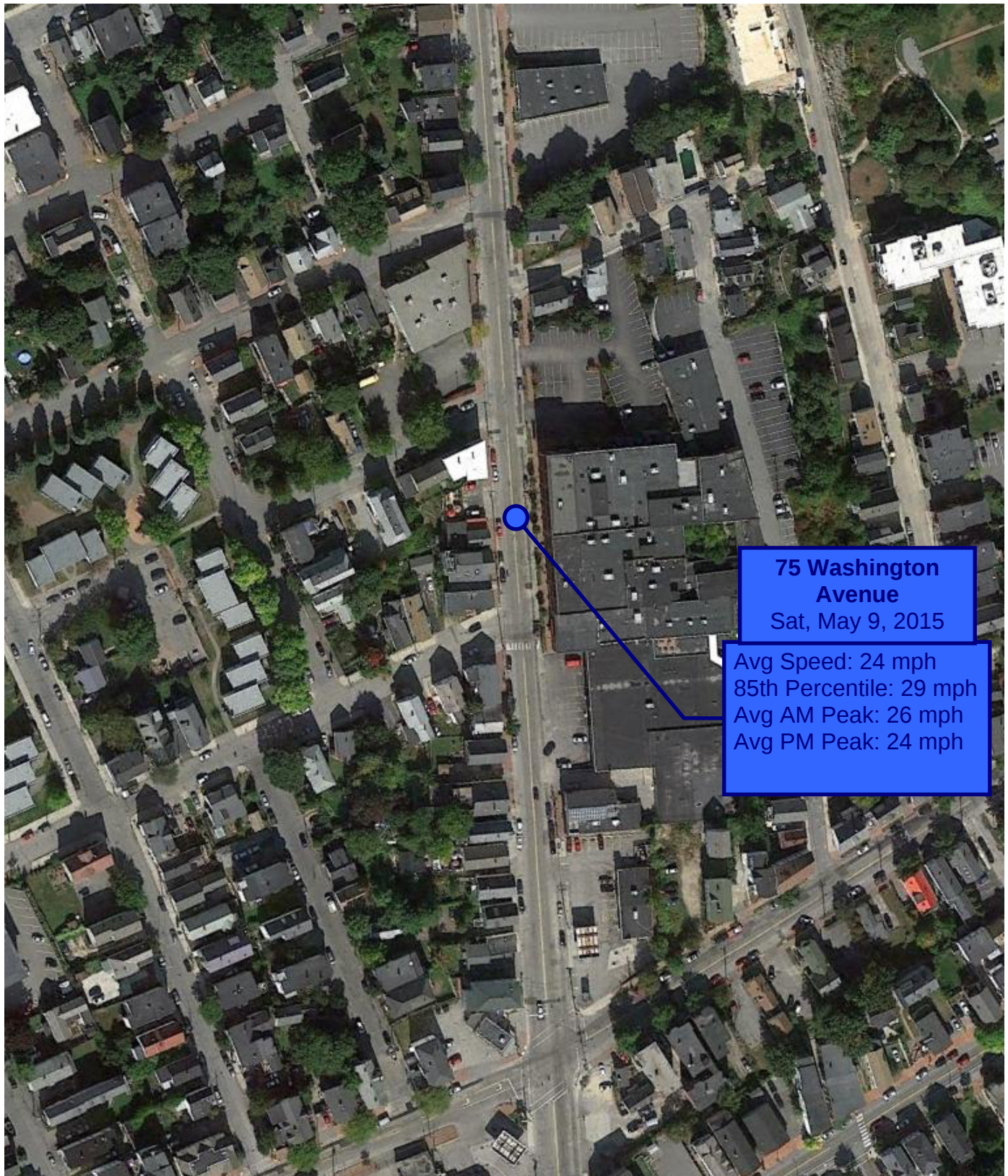
Speed Study (2014/2015)



State and High Street
Two Way Conversion Study
May 2015

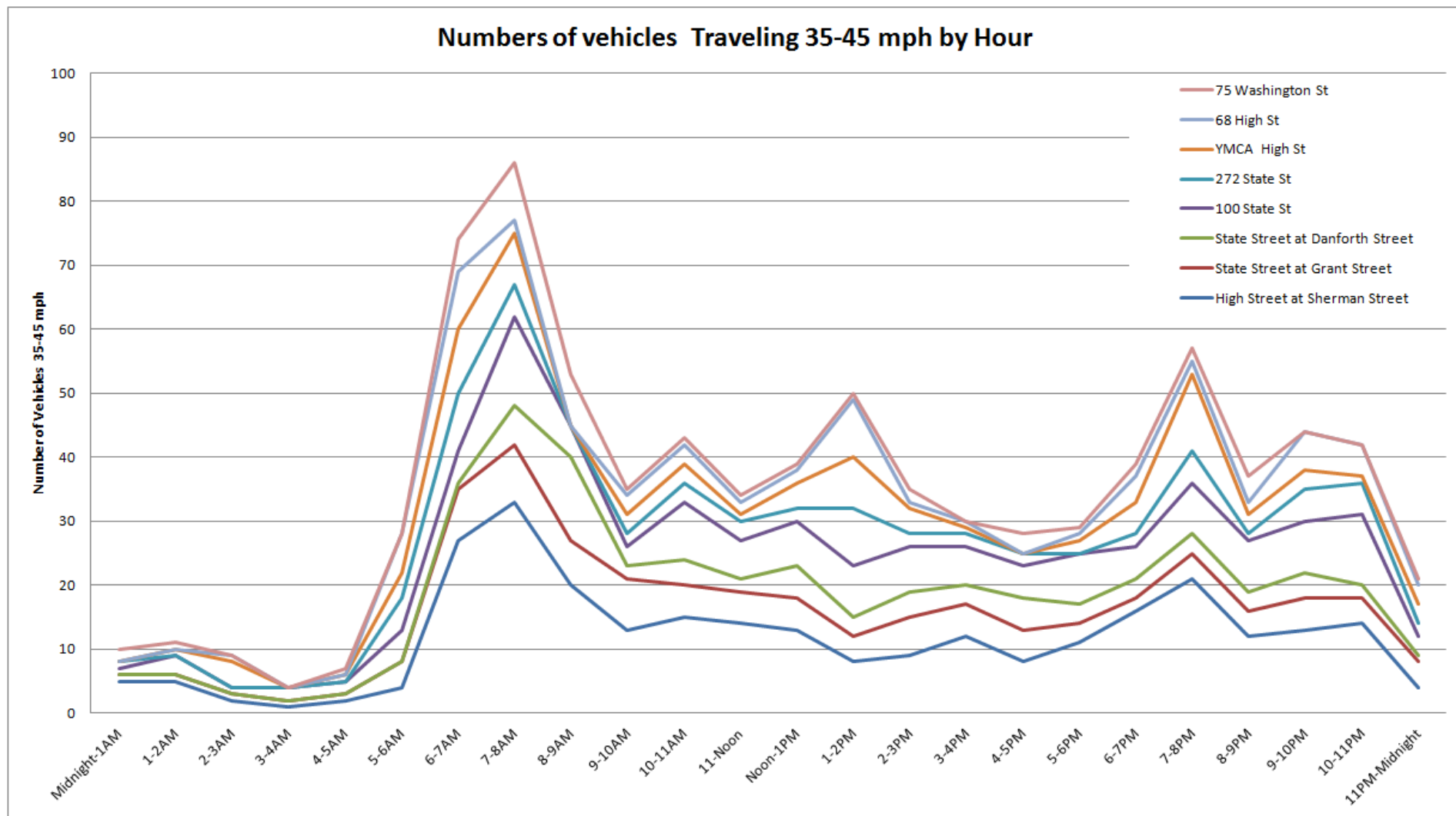
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Speed Study (Washington Ave)



State and High Street
Two Way Conversion Study
May 2015

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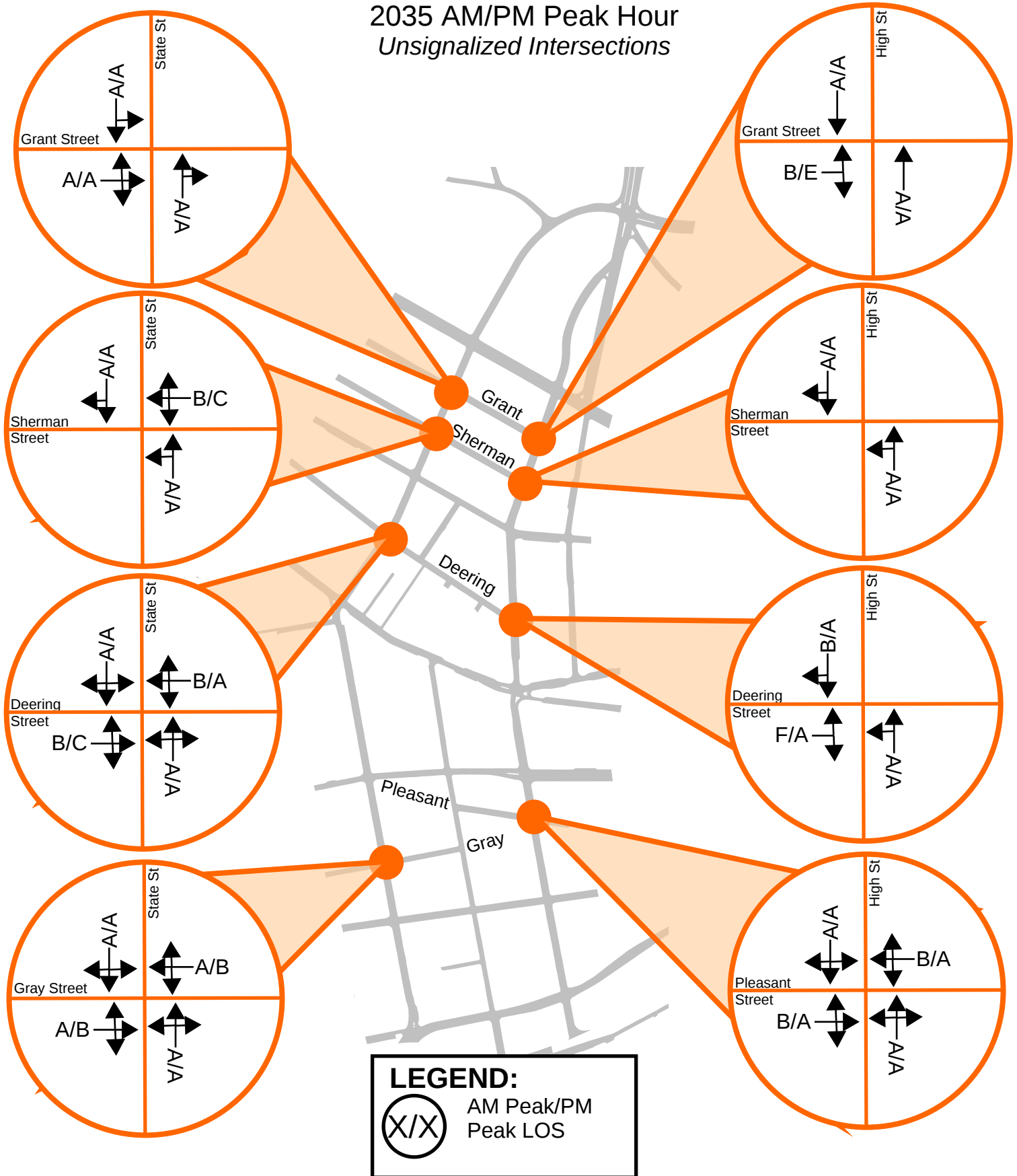
State and High Street Two Way Conversion Study May 2015

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SimTraffic Two-Way Vehicular Level of Service

2035 AM/PM Peak Hour

Unsignalized Intersections



State and High Street
 Two Way Conversion Study
 May 2015

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Loading and Deliveries

Loadings and Deliveries	
Location	Delivery Type/Location
Residences along State and High Street	UPS and Fed Ex drivers were surveyed; each park anywhere that is available – typically not legal parking and run out to deliver packages. If not parking is available they will go to side streets and use a hand truck – however it can be difficult with the one way flow to get back on their route. It was observed during spot counts that sometimes trucks will completely block lanes to make a delivery under the one way scenario.
King of the Roll	Deliveries from Congress or Vernon Place
1 Longfellow Square	Deliveries from Congress
184 State Street	Deliveries from Congress
188 State Street (Miyake)	Deliveries from Pine Street
190 State Street	Deliveries from Pine Street
The Frame Shop	Deliveries from Pine Street
The Portland Club	Deliveries from the parking lot or on street as needed
State Street Congregational Church/St. Luke's Cathedral/Episcopal Diocese of Maine	Deliveries from the front
Mercy Hospital	Deliveries from Parking Lot
St. Dominic's Roman Catholic Church	Deliveries from Gray Street
El Rayo Tacqueria	Deliveries from parking lot
The Little Tap House	Deliveries from Spring Street
The Cumberland Club	Deliveries from the rear parking lot
Portland Museum of Art	Deliveries from Spring Street
WCSH	Deliveries from the parking lot
Starbucks	Deliveries from Free Street
Namaste Salon and Spa	Deliveries from Congress Street or High Street as needed
The State Theater	Deliveries from High Street – block the road during deliveries
Immanuel Baptist Church	Deliveries from Deering Street or High Street as needed
The Eastland	Deliveries from High Street or Forest Avenue as needed
YMCA	Deliveries from parking lot
Citgo	Deliveries from parking lot



Added Winter Snow Removal \$\$

- Portland budgets for 8-10 major snow events and 22 smaller snow events
- Cost impact would be on major events only
- Per storm cost is \$9,100 for enhanced State & High work
- Total projected annual cost: \$72,800 - \$91,000



Total Project Cost

- Total project: \$3.225 million
- Needed upgrade to traffic signals: \$2 million
- Additional cost of two-way configuration: \$1.225 million

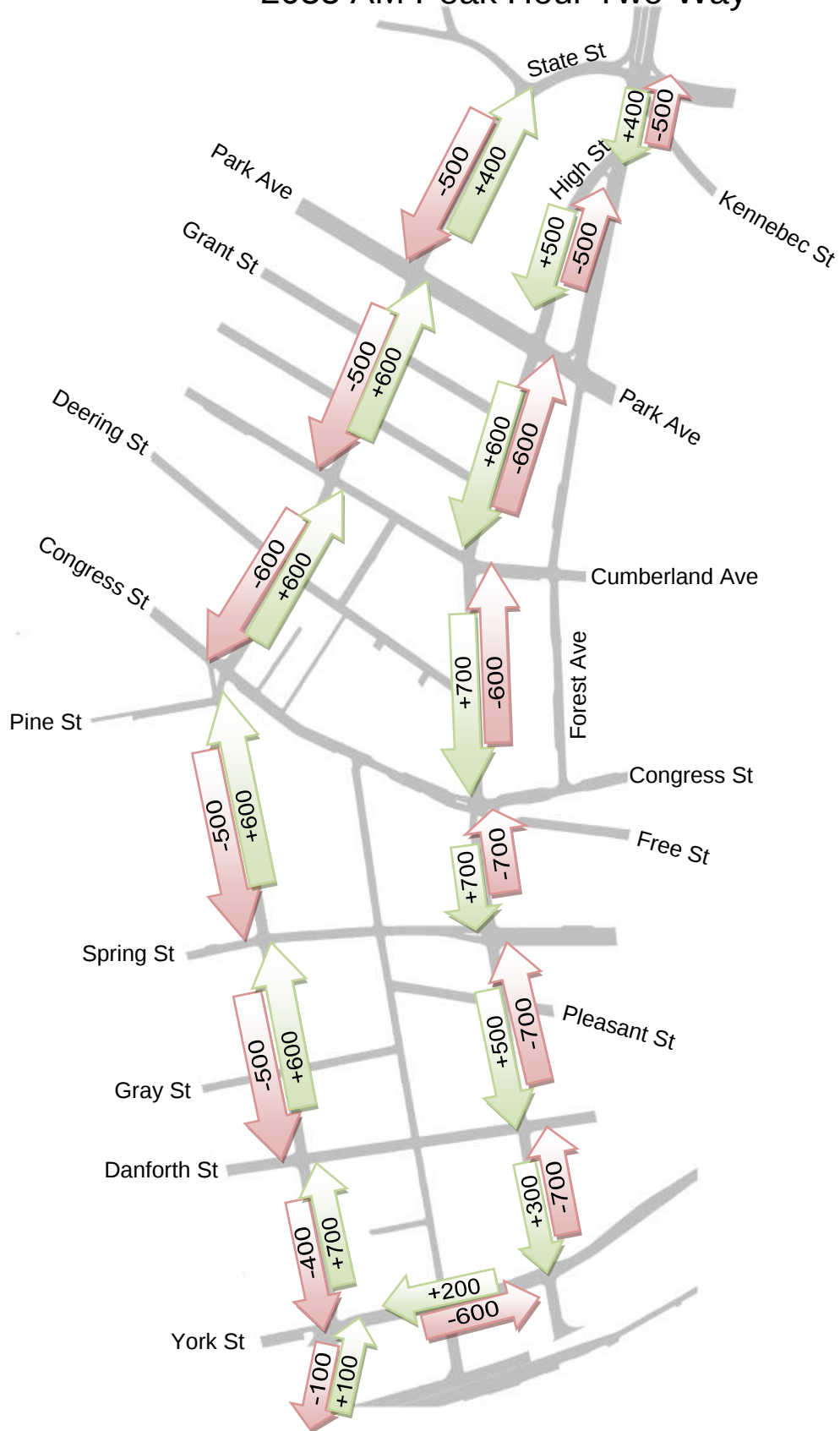


Review Study Findings

- Traffic Volume Changes
- Vehicle Mobility
- Vehicle Speed
- Heavy Vehicles/Truck Deliveries
- On-Street Parking
- Bicycle Safety/Mobility
- Pedestrian Safety/Mobility
- Intersection Geometry
- Winter Maintenance
- Cost



Volume Change 2035 AM Peak Hour Two-Way



Volume
 Increase
 Decrease

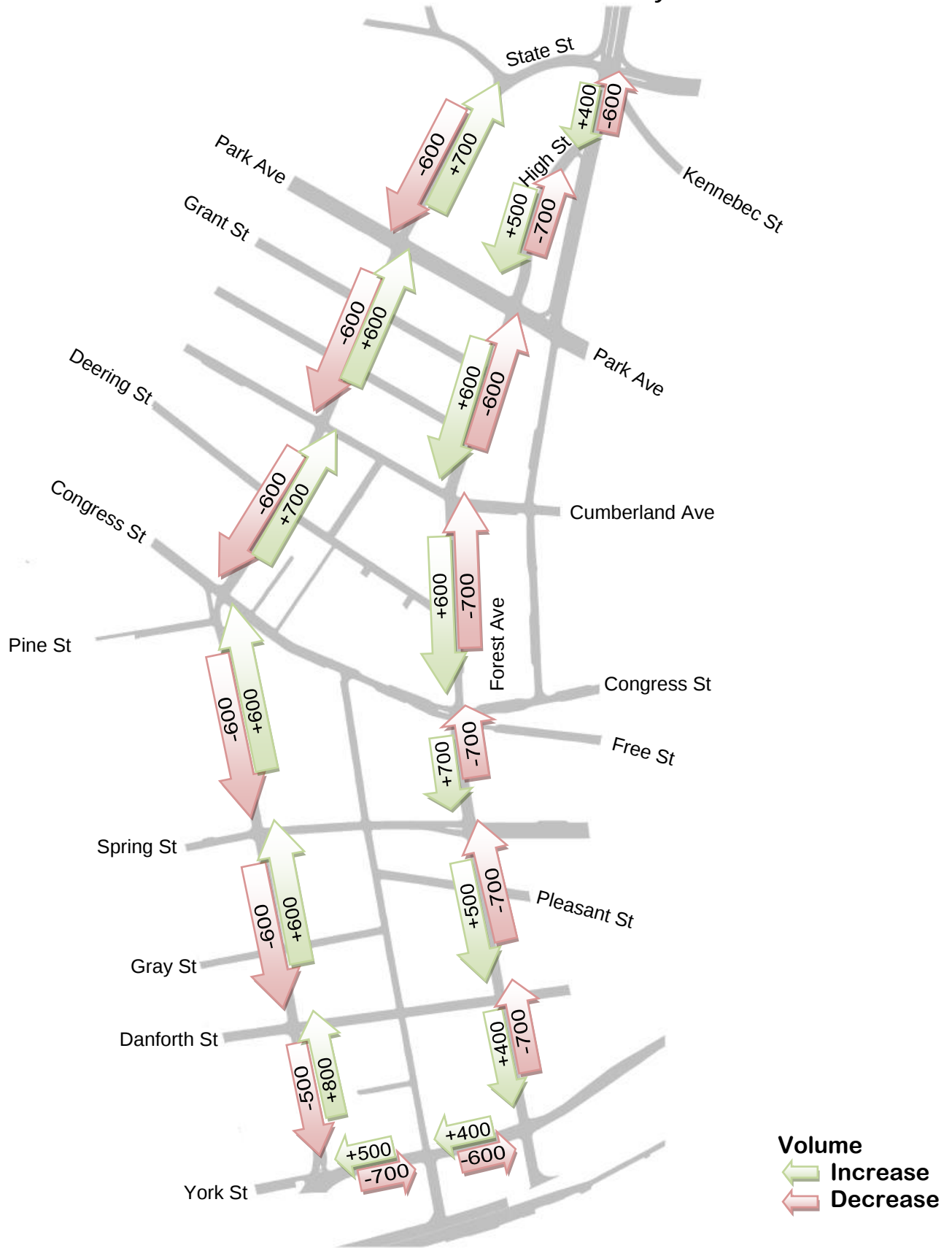


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Volume Change

2035 PM Peak Hour Two-Way



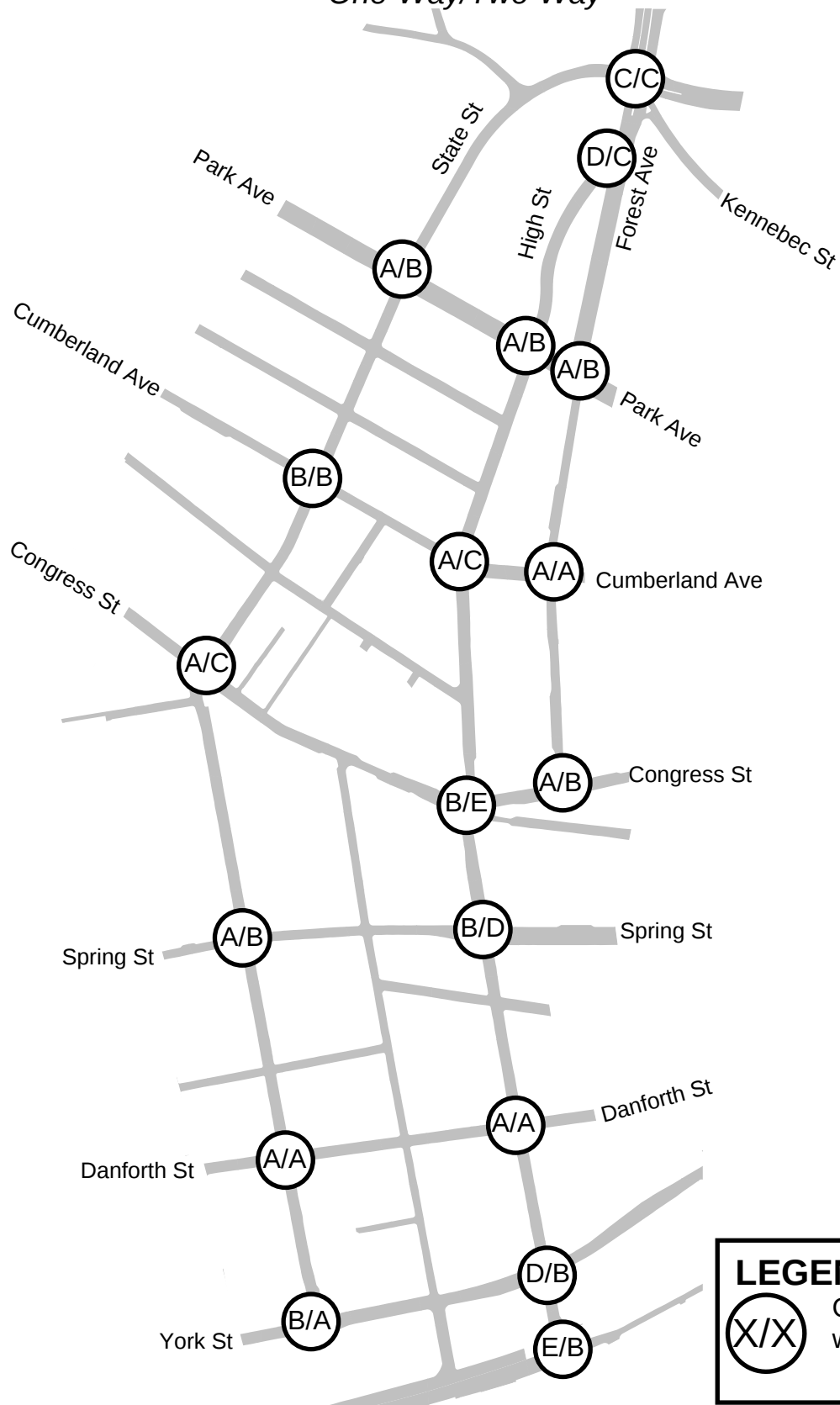
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SimTraffic Vehicular Level of Service

2035 AM Peak Hour

One-Way/Two-Way



LEGEND:



One-Way/Two-way LOS



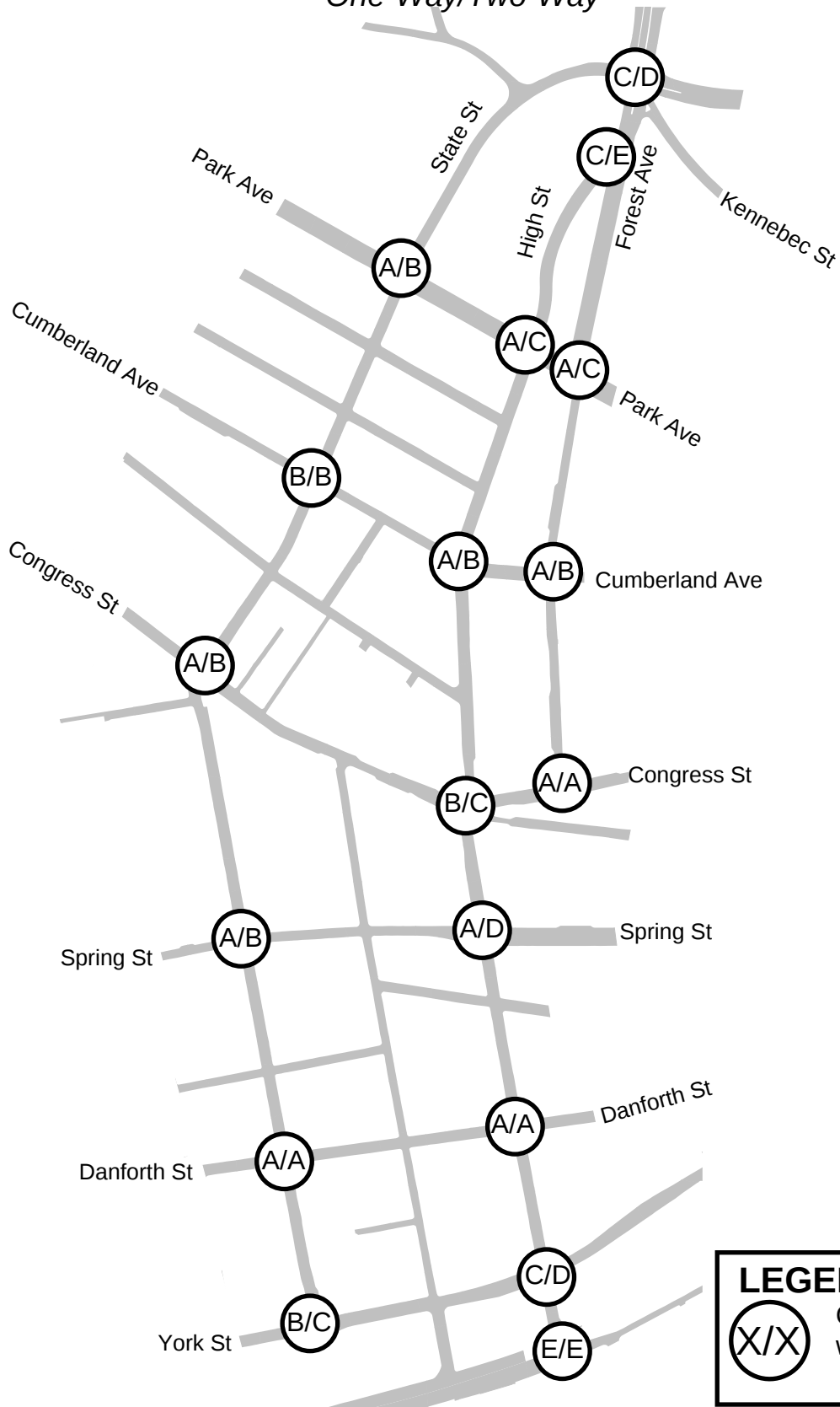
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SimTraffic Vehicular Level of Service

2035 PM Peak Hour

One-Way/Two-Way



LEGEND:



One-Way/Two-way LOS

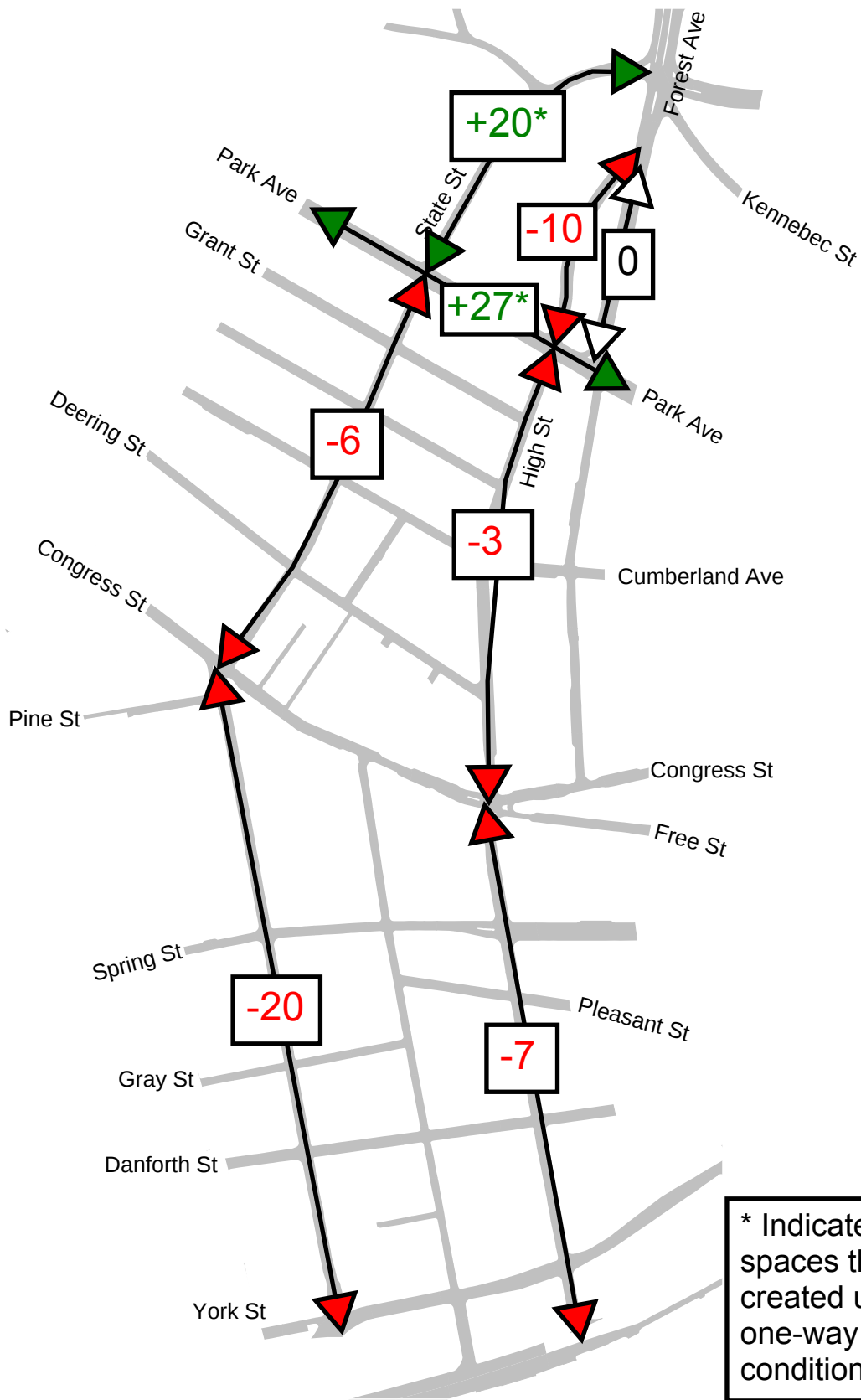


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On-Street Parking

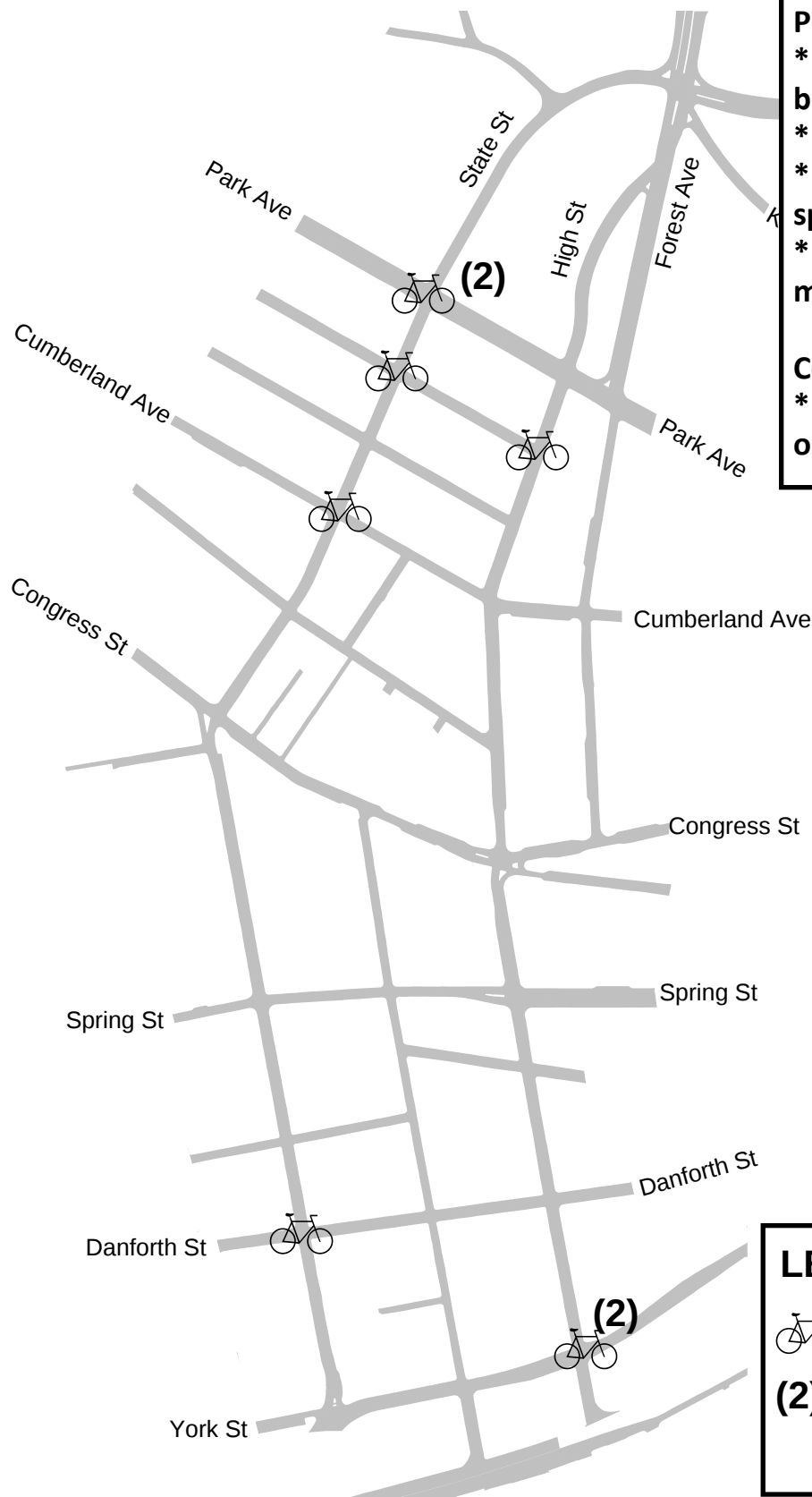
Change in Parking Between One-Way and Two-Way Conditions



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Two Way Conversion Study
May 2015

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**Figure: Bicycle Crash History
(2011-2013)**



Pros:

- * Eliminates one way bicycle crashes
- * More direct routing
- * Reduced vehicle speeds may occur
- * Safer left-turn movements

Cons:

- * Vehicle passing option reduced

LEGEND:

 Bicycle Crash

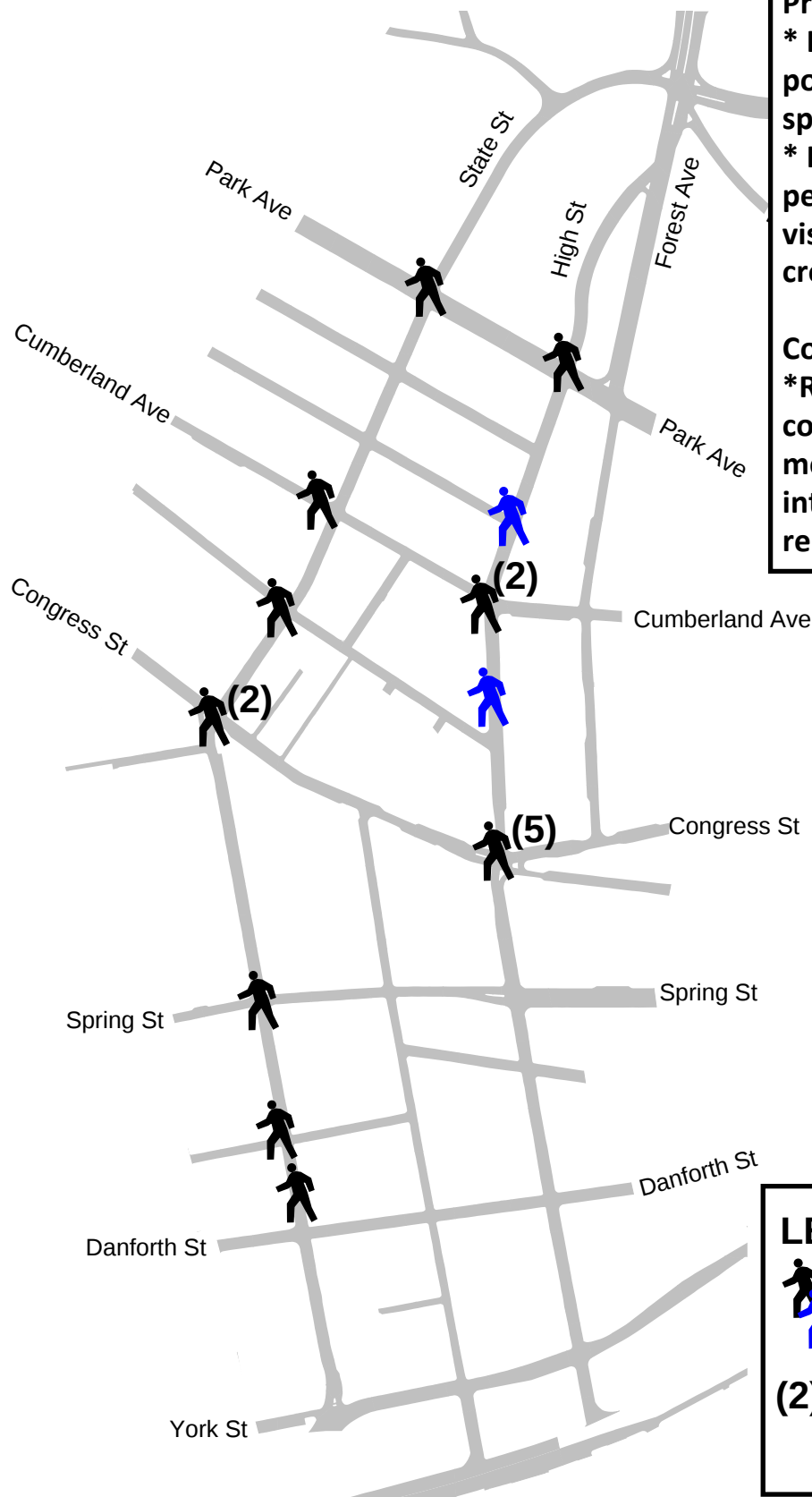
(2) # Crashes (no # indicates 1 crash)



**State and High Street
Two Way Conversion Study
May 2015**

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**Figure: Pedestrian Crash History
(2011-2013)**



Pros:

- * Improved safety with possible slower vehicle speeds
- * Improved pedestrian/vehicle visibility at unsignalized crossings

Cons:

- * Results in more conflicting vehicular movements at intersections (LOS remains unchanged)

LEGEND:

- Pedestrian Crash
- (Blue indicates midblock)

(2) # Crashes (no # indicates 1 crash)



**State and High Street
Two Way Conversion Study**
September 2014

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PORTLAND
STATE AND HIGH STREET
CONVERSION STUDY

PROJ. MANAGER	T. Errico	BY	DATE
CHECKED-REVIEWED			
DESIGNS DETAILLED			
DESIGNS DETAILLED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE	P.E. NUMBER	DATE



CITY OF PORTLAND

What We Heard at Public Workshops

- Most attendees and comments were residents of study area or its surrounds
- Comments were mixed, but weighted somewhat toward the positive
- Biggest concerns overall were loss of parking. Potential increased congestion and effect of winter conditions also issues
- Biggest positives were safer, more historic and pedestrian-friendly atmosphere; ability to divert through-traffic



DISCUSSION



VOTE

“Given that the findings of the study indicate that a two-way conversion is feasible, does the committee support taking steps to move forward in implementing the conversion?”



Next Steps

1. Take findings and committee vote to Transportation, Sustainability & Energy Committee Meeting.
2. Take findings, committee vote and TS&E vote to City Council Meeting



**State and High Streets Two-Way Conversion Feasibility Study
Public Advisory Committee/Community Advisors Meeting Report
Portland Public Library
June 3, 2015**

In attendance:

PAC Members: David Marshall, Kevin Donoghue, Steve Landry, Ian Jacob, Anne Pringle, Ron Spinella, Michael Connolly, William Barry, Carl Eppich, Lauren Wayne, Rosanne Graef

CA Members: Chris O'Neil, Damon Yakovleff, Ben Shambaugh, Chris Cantwell, Bill Bray

City Staff: Mike Bobinsky, Alex Jaegerman, [Christine Grimando](#), [Bruce Hyman](#)

Consulting Staff: Tom Errico, TY Lin: Carol Morris, Scott Hastings; Morris Communications

Meeting started at 6 pm

Carol Morris opened the meeting and reviewed the agenda and the process for the evening. She noted that this was the last meeting, and the Advisory Committee would be asked to vote at the end as to whether to recommend moving to the next step. She said that in this study, it was particularly challenging for the committee because there were clearly pros and cons on both sides – making the change back to two-way or leaving things the way they are now. Their role was to set a clear direction for the City Council.

Tom Errico then provided a brief history of the corridor. It had been designated as a state route in 1955 before being converted to one-way streets in 1972. In 1999, PACTS conducted a study of traffic around Deering Oaks Park that began to look into the idea of restoring the roads to two-way traffic. The 2005 Portland Peninsula Transportation Study also included a chapter on the potential for restoring two-way traffic. This directly led to the current effort via a 2012 preliminary study.

Tom then reviewed the Purpose and Need statement to remind the committees what the study outcomes were trying to achieve.

Tom presented additional data that had been collected in response to questions brought up by the committees. The city conducted an additional speed study in the spring of 2015 to augment the original study done by the consulting team in the summer of 2014. The data from this study confirmed the earlier one, with average, peak, and 85th percentile speeds being very similar to the findings of the original study. The consulting team took a closer look at off-peak hours in response to concerns raised by the committees and the public. They found that a small percentage of vehicles were traveling above 35mph and that the 85th percentile speed was above the posted speed limit for the entire corridor. The team also collected speed data from Washington Ave. between Cumberland and Oxford Sts. This data was used to evaluate the

potential effects on speed in a similar road that is now two-way. They found similar speeds to those currently seen on State and High, possibly indicating a minimal decrease in speeds under a two-way scenario. Tom cautioned though that their case study research had seen lower traffic speeds post-conversion in almost all cases.

The team also took a closer look at the intersections that would not be signalized under the two-way scenario, taking spot counts for am and pm peaks to augment the previous traffic counts. The model showed that these intersections would still work under a two-way scenario, though there may be some acceptable loss of service.

The team also undertook a detailed look at truck deliveries throughout the corridor. They found most businesses already took deliveries from side streets and so would see minimal impact from a change in traffic flow on State and High. The State Theatre was the primary concern. They currently block traffic on High Street when trucks are maneuvering to access the loading dock there. Tom felt that this is already a complicated process and so would not be made much worse by a change in traffic flow. He added that making the roads two way would provide an easier detour to traffic unable to use the road during such events.

A representative of the State Theatre agreed that it was not impossible, but added that there would be increased costs for them as they would need additional staff to block traffic in both directions.

Winter snow removal had been a big question at previous meetings and the consulting team worked with city staff to determine what impacts a change would have. Currently snow is often left on the streets as one-way traffic is more forgiving of a narrowing of the road. In a two-way scenario, it would have to be completely cleared after every storm. This would add an estimated \$72,000-\$91,000 a year to the city's ~\$1.2 million annual snow-removal budget.

Tom went on to present the most recent cost estimate. The entire project was projected to cost around \$3.2 million, with signal upgrade making up \$2 million of that cost. Tom noted that the signals in the corridor were old and would need upgrading soon anyway so much of this cost would be required even if the road were to stay in a one way configuration. This makes the actual cost of conversion \$1.2 million.

There was some discussion over when State and High would be repaved for regular maintenance and it was determined that they were not in MaineDOT's long range plan for paving.

Tom went on to conduct a quick review of the previous findings.

Traffic volumes are not expected to change significantly. They would distribute about evenly over the two roads.

Level of service would remain about the same, with some losses and some gains. Congress St. intersections and the intersection of Spring and High would all see a loss in level of service while York at High would see a gain.

Overall the corridor would see a loss of about 31 on-street parking spots. This could be offset by a gain of as many as 20 spots on State Street through Deering Oaks. There are currently 327 on-street parking spaces on State and High Streets together.

The team has reviewed the plan with the Bicycle Coalition of Maine (BCM) and found them favorable to it. BCM did suggest improved signage and pavement markings along the corridor.

A modeling of pedestrian conditions found minimal change in level of service but the consulting team felt that model used was not fully able to fully evaluate the relatively low traffic volumes.

There was some discussion over the safest pedestrian situation and whether a protected phase would remove car/pedestrian accidents.

Tom reviewed an example of the geometry change diagrams that were provided for each intersection. He noted that some intersections did assume encroachment from trucks making turns but that in these instances truck volumes were low enough that it would not be a significant issue. The team had shown the plan to Deb Andrews, City of Portland, and she had seen no issues with the changes in terms of historic preservation standards.

Carol took the floor and reviewed some of the feedback they received at the two public workshops. They had been well attended, primarily by residents of the immediate area, and opinions were mixed on whether to convert the streets or not. Loss of parking was the biggest stumbling block for people, followed by congestion and snow removal. A more comfortable residential neighborhood, including safer walking conditions, was the biggest attraction.

Carol then asked for questions from the committees.

A committee member asked what the next steps were.

Tom explained that the study findings would go to the City Transportation, Sustainability and Energy Committee and then the City Council. If they approved it, a design phase would happen to layout the pavement markings, signs, signals, and geometries. With this done, once funding is found, construction could begin.

A question was asked if there would be much diversion to the Fore River Parkway. Tom replied that their models did not show a significant diversion.

A question was asked about how the double issue of the State Theatre and the Westin Hotel was being handled.

A representative of the State Theatre stated that they and the Westin had recently worked out a system with the city to improve operations on that stretch of road. This would have to be reworked if the roads were converted.

A question was asked about whether the traffic volume assumptions took into account the potential for people to move to other transportation modes as those modes improved under a two-way scenario.

Tom responded that the models did not include any mode shift assumptions.

A committee member asked if there was room for wider climbing lanes to accommodate bikes. Tom replied that the team had looked at this a few times and found that there just wasn't room for that. In talking with BCM they agreed that it was a shared lane situation and that clear signage and markings would have to be provided.

A committee member said that the space constraints were based on the turn lanes, which were designed for the predicted traffic volumes and wondered if initially some of the turns could be left out until they were truly needed.

Tom replied that it was a fair point that projects can be done incrementally to build to future growth but that in this case current traffic volumes would require turn lanes in a two-way scenario. This was reinforced by the representative from MaineDOT. The project was not assuming very larger growth in traffic volumes so there is not a lot of room to be gained.

There was some discussion on this point.

A committee member noted that the number of pedestrian crashes going down was not the only safety metric. Lowering speeds would in turn lower the severity of any crashes. They also felt the change would have additional stimulus benefits both in terms of pedestrian use and economic activity. The current situation is not inviting and has a cooling effect on the corridor. The quality of life improvements stemming from this change would be significant.

A committee member asked if it was necessary to hold a vote that day. They felt that there was more information that was needed to make an informed decision. Further they said that they had asked for this information and had not been given it.

Carol replied that a member of the team had specifically talked to them about their information requests and all the information that it was possible to provide had been provided.

Tom added that the committee member's comments had directly led to portions of the updated data that Tom had presented earlier. The team had gone through all of the information requests with city staff and determined what data collection could feasibly be done based on scope and funding. They may not have personally responded but the comments directly influenced the work that was done.

A committee member stated that they felt the annual snow removal cost was significant. Upfront numbers for construction were one thing but the city was having trouble coming up with funds for the annual budget as it was.

Another committee member noted that annual cost may be notable but it was a small portion of the total snow removal budget, which was in turn a small portion of the total budget. They felt that extra snow removal was already warranted on the corridor in light of last year's winter and in that case some of the money would be spent anyway. They also noted that with the assumption that the traffic signals would need to be done anyway, the remaining \$1.2 million was a small portion of the city's total annual budget.

A committee member said that the economic benefits of undertaking the conversion had been mentioned before and that they would like to see more language on that potential in the report. The case studies claimed increased economic activity. That combined with storefronts on the corridor having increased access and visibility and the benefits to quality of life, could mean significant gains for the city that could offset the costs. They felt that the study was too focused on the conflicts between cars and other modes and did not consider the wider ramifications.

A committee member asked whether MaineDOT could deny the project if the City Council approved it.

Steve Landry of MaineDOT said that it was a state road and MaineDOT would have to sign off on any changes. This was why he is on the Advisory Committee. The roads have to get vehicular traffic across the peninsula. He also questioned the assumption that the change would lead to economic benefits. There was no way to know for sure and he felt that some of the scenarios used in the case studies were very different from the situation at hand. The project would have to show a clear benefit to warrant funding. The dollar investment of \$3 million may not be a lot for a road project, but in concert with the other projects the city is working on it adds up to a lot of money.

A committee member noted that the vote today would then send the project to City Council, which would then decide whether or not to put it in the hopper with the other capital improvement projects. The council would hash out priorities as they saw fit.

Carl Eppich of PACTS agreed that this is a feasibility project. Funding and implementing would be further down the road. He noted that PACTS has money to aid in projects and had already discussed doing a peninsula-wide signal study that could help inform the next steps of this project.

Another committee member said that all of the other major arterials such as Forest and Washington are two way and wondered why these roads were under so much scrutiny.

A committee member said that he felt that this had been an informative exercise and that it will have done the city good regardless of the outcome. He felt that some of the problems and solutions that were discussed were not particularly solid and instead the study had been looking to justify them. He didn't feel that a consensus was reached on what the problems were or even if the status quo was bad. Of the pros offered in favor of the change, He felt only two were actionable; vehicular mobility and access. He did not feel the safety and economic vibrancy points were reliable. He said that in a feasibility study, it was on the study to prove that such a change was needed or warranted and he did not see a clear benefit to outweigh the potential risks.

Carol noted that from a process perspective, while he may not have perceived the original list of problems generated by the committees as problems, many people did perceive them as such, and that was also validated in the public meetings.

There was some discussion about the nature of the vote to be held. An example vote statement, which had gone out to the committee prior to the meeting, was presented.

A committee member said that he personally supported the change on the merits of the transportation improvements it would involve. Any other benefits would be welcome but unnecessary to debate as the transportation benefits were sufficient to warrant support.

Another committee member agreed and added that costs of the project were tiny compared to most infrastructure projects.

A committee member said that as things stood at the time, she was a no vote. She did not care what the cost was but did need assurance that if they were to make changes it would result in a better user experience.

Another committee member agreed, saying that additional information was needed. He saw the conversion as a dramatic change and while there was opportunity for improvement, he needed to be convinced that this would result in something better.

Another committee member felt that the project was a bit of a wash. There were some improvements but not in everything he wanted to see and there were some drawbacks as well.

There was some discussion over whether the vote should be restricted to whether the committee found the project "feasible" and not include any judgment on whether it was "advisable".

A committee member said that he lived and worked in the corridor and he saw clear and actionable benefits in terms of livability and improvements to non-vehicular transportation. He wanted to make sure that any vote taken today would further the conversation and worried that a no vote would end any further discussion. He wanted to retain the ability to address the concerns that people had raised.

There was discussion of the exact wording of the vote to be held. Ultimately the following language was decided upon:

"The committee finds that the findings of the study indicate a two-way conversion is feasible and that the changes to the transportation infrastructure will support the existing mix of land uses and neighborhoods in the area."

A committee member commented that purpose and needs statement had included language that indicated a desire to see improvements to livability and other non-transportation aspects. They felt that these aspects were not being adequately addressed.

Another committee member agreed and said that that was why there was push back occurring at this stage.

Alex Jaegerman, City of Portland's Planning Director, said that the purpose and needs statement said that they would evaluate whether a two-way conversion would be an improvement to the neighborhood. This was ultimately a qualitative statement. The study team had quantified everything they could and people seemed to have those measurements in mind as they were approaching the vote. Livability is why they were there and why the project was undertaken. The data was by nature imperfect and he charged people to vote in favor of the project if they felt that it would improve the neighborhoods it affected.

The vote was called. 7 voted in favor, 2 voted against and 2 abstained.

Carol thanked everyone for their time, interest and patience, and the meeting was closed at 8:10 pm.



Michael J. Bobinsky
Director of Public Services

To: Transportation Sustainability and Energy Committee
From: Michael J. Bobinsky, Director of Public Services
Date: July 10, 2015
Subject: Warren Avenue Land Purchase

City staff has been in negotiations with the seller of the property located off of Warren Avenue for the purposes of protecting a large area of critical headwater wetlands within the Capisic Brook Watershed and for constructing important water quality improvements. Capisic Brook is one of five (5) impaired streams in the City of Portland, is our highest priority stream under the Municipal Separate Storm Sewer System (MS4) General Permit and continues to be a major focus of our water quality improvement efforts. Acquisition of the property will enable staff to complete the design and construction of a stormwater treatment system recommended in the Capisic Brook Watershed Management Plan, which was adopted by the City Council in 2012.

Our negotiations have been on going over the past year and we have now reached agreement on the purchase price for the property. Funds for the purchase of the property were approved in the FY14 CIP Sewer Fund. Staff arranged to have an appraisal for the property which came in at \$790,000. Following negotiations with the seller and recognizing the value expectations of the seller, the City agreed to a purchase price of \$800,000.

The property may also serve as a substitute open space-recreation parcel for the Hadlock Field property improvement that was funded nearly 20 years ago with a Land and Water Conservation Fund Grant from the State of Maine; the City received notice from the State that the City was out of compliance with the terms and conditions of the former grant for the Hadlock Field improvements, since the ball park is used more exclusively by the professional baseball team and no longer a "public park". The Warren Avenue property has a similar appraised value and the State has indicated that this substitution of property, with the pledge that the Warren Ave property would be made available to the public either through passive or active recreation use, would be acceptable and allow the City to return to compliance with the former grant.

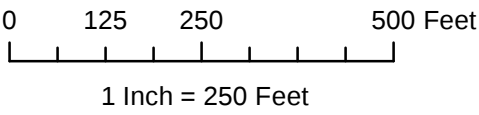
Staff recommends approval of the purchase and sales agreement for the Warren Avenue property and the TSE endorsement to the City Council. Attached are a copy of the purchase and sales agreement and a parcel map of the property for your information.



42.5 AC +/-
to City

Approx. location of
gravel wetlands
treatment system

6 AC to be
developed
303 A010



Warren Avenue Property Adjacent Capisic Brook

City of Portland
Department of Public Services
4-29-2013



 Property for Sale
 Brook

PURCHASE AND SALE AGREEMENT

THIS AGREEMENT for the purchase and sale of real estate made this _____ day of _____, 2015 (the "Effective Date") by and between the **CITY OF PORTLAND**, a body politic and corporate located in Cumberland County, Maine (hereinafter referred to as "Buyer"), and **PH WARREN AVE, LLC**, a Maine limited liability company with a mailing address of 401 Warren Avenue, Portland, Maine 04103 (hereinafter referred to as "Seller").

WITNESSETH:

WHEREAS, Seller owns an approximately 42.5 acre parcel of land located on Farnham Street and Iffley Street, City of Portland, County of Cumberland, State of Maine, being a portion of the land described in a deed to Seller recorded in the Cumberland County Registry of Deeds, Book 30781, Page 74, which portion is more particularly described in Exhibit A attached hereto and incorporated herein by reference (the "Property") and generally depicted on the sketch plan attached hereto as Exhibit B; and

WHEREAS, Seller intends to sell and Buyer desires to acquire the Property.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, hereby agree as follows:

1. SALE.

Seller agrees to sell the Property, and Buyer agrees to purchase the Property in accordance with the provisions hereof. It is hereby agreed and acknowledged that the actual description of the Property shall be determined based on the title and related due diligence work to be completed by Buyer pursuant to this Agreement and that such description shall be subject to Buyer's final review and approval before including the same in the Deed (as that term is defined below) to be delivered by Seller to Buyer as set forth and described below.

2. CONSIDERATION.

The consideration for the property shall be Eight Hundred Thousand and no/100 Dollars (\$800,000.00) (the "Purchase Price") payable as follows:

- (a) A deposit of Twenty Thousand Dollars (\$20,000.00) to be paid by Buyer within two (2) business days of the Effective Date and held in escrow by _____ until closing and applied to the Purchase Price (or, if applicable, until returned to Buyer pursuant to this Agreement) (the "Deposit"); and
- (b) The Purchase Price, less the Deposit, to be paid by Buyer to Seller at closing by

Buyer's check, subject to any adjustments provided for in this Agreement.

This is a cash purchase and no financing is required.

3. TITLE.

Title to the property shall be conveyed by good and marketable title acceptable to the Buyer evidenced by Quitclaim Deed with Covenant (the "Deed"), and shall be free of liens or other encumbrances and leases or other rights of occupancy, except for utility easements and other encumbrances that do not impair the value of the property. In the event Seller is unable to convey title as aforesaid, Seller shall be given a reasonable period of time, not to exceed sixty (60) days after receipt of written notice, in which to remedy any title defects at Seller's sole expense. In the event that any defects cannot be corrected or remedied within said period to Buyer's satisfaction, then Buyer may, at its option, receive back the Deposit, and Buyer and Seller shall be under no further obligation to one another hereunder. Buyer may elect to close this transaction notwithstanding said defects.

4. POSSESSION.

Full possession of the Property will be delivered to Buyer at the transfer of title free and clear of all tenancies or occupancies by any person or entity.

5. ADJUSTMENTS, PRORATIONS, CLOSING COSTS.

- (a) Real estate taxes and any other assessments that may be due on the Property shall be prorated as of the date of the closing.
- (b) The Maine real estate transfer tax shall be paid by Seller and Buyer in accordance with 36 M.R.S.A., §4641-A.
- (c) The recording fee for the deed of conveyance shall be paid for by Buyer.
- (d) A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A.

6. RISK OF LOSS.

Until transfer of title hereunder, the risk of loss or damage to the Property by fire or otherwise is assumed by the Seller. The Property is to be delivered in substantially the same condition as of the date of this Agreement unless otherwise stated. In the event Seller is not able to deliver the Property as stated, Buyer may terminate this Agreement and receive a refund of the Deposit.

7. INSPECTIONS; CONTINGENCIES.

Buyer may enter into any part of the Property at all reasonable times prior to the closing in order to inspect the Property, conduct surveys, test borings, engineering and environmental studies, and to do such other things as are reasonably necessary with respect to the acquisition and development of the Property (collectively, the "Inspections"). In the event that any of the

Inspections reveals defects or conditions that are unacceptable to Buyer, as determined by Buyer in its sole and absolute discretion, Buyer shall have the option of terminating this Agreement and receiving back the Deposit

Seller shall have no obligation to close on this transaction until Seller has received all City of Portland approvals for and building permit to construct a 28,000 square foot commercial building on Warren Avenue, Portland, Maine which is adjacent to this Property. Seller has received to date site plan approval from the City of Portland Planning Board (Portland Planning Board Project ID 2014-016) for said project. In the event that Seller has not received said approvals and building permit prior to the Closing Date and elects not to close, Buyer shall be entitled to the return of its deposit and reimbursement of its costs and expenses as set forth in section 10(a) below.

8. REPRESENTATIONS AND WARRANTIES OF SELLER.

Seller represents and warrants to Buyer that to its knowledge, the following are true as of the date of this Agreement and will be true as of the closing:

- (a) There are no outstanding pending or threatened liens, claims, rights of first refusal, licenses or encumbrances against or affecting the Property.
- (b) All outstanding bills and/or accounts payable concerning the Property are either paid or will be paid prior to or at the time of closing.
- (c) There are no outstanding claims, losses or demands against Seller by any person respecting Seller's ownership, use or occupancy of the Property.
- (d) The Property has not been used for any dumping of waste materials or landfilling and is free of special wastes, underground storage tanks, radon, asbestos, lead substances, and any hazardous, biomedical, radioactive or toxic, substances, materials or wastes. The terms used in the foregoing sentence shall include, without limitation, all substances, materials, etc., designated by such terms under any laws, ordinances or regulations, whether federal, state or local.
- (e) Seller has no knowledge of any boundary disputes or encroachments affecting the Property.
- (f) There are rights of ingress and egress in perpetuity from the Property to Warren Avenue from Newcastle Street and Saville Street and to Verrill Street, Iffley Street, and Sarsfield Street for vehicular and pedestrian traffic and utilities.

9. CLOSING.

The closing of this transaction shall take place on or before that date which is sixty (60) days after the Effective Date (the "Closing Date"), at a time agreeable to the parties, at the offices of the Corporation Counsel, Room 211, City Hall, 389 Congress Street, Portland, Maine. Time is of the essence in the performance of this Agreement.

Seller further agrees to execute and deliver to Buyer at the closing such affidavits and certificates as are reasonably necessary for Buyer's acquisition of the Premises including without limitation a certificate of non-foreign status (as required by Internal Revenue Service regulations), an affidavit regarding underground storage tanks (as required by Maine Law) and a standard title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession and, if Seller is a corporation, partnership or other legal entity, satisfactory evidence of authority to convey and good standing.

10. DEFAULT AND REMEDIES.

- (a) In the event Seller defaults under this Agreement, and if Buyer is not then in default hereunder, Buyer shall have the right to pursue specific performance, but at all times may elect in substitution therefor, as its sole remedy, the right to a return of its deposit, together with reimbursement, in an amount not to exceed Fifteen Thousand Dollars (\$15,000.00) of reasonable, documented, out-of-pocket costs or expenses incurred by Buyer in connection with its purchase of the Premises, including fees of inspectors, engineers, attorneys, or other professionals engaged by Buyer in connection with its purchase of the Premises.
- (b) In the event Buyer defaults under this Agreement, for a reason other than the default of Seller, Seller's sole remedy shall be the right to retain the Deposit and any interest accrued thereon as liquidated damages for the breach and not as a penalty therefor and this contract shall be deemed terminated.

11. CONDITIONS PRECEDENT.

Buyer's obligation to close hereunder is subject to Buyer's full and complete satisfaction with all of the following:

- (a) There shall have been no material adverse change in the condition of the Property occurring after the conclusion of Buyer's inspections under Section 7 above, and the Property shall be substantially in the same condition as they were at the time of the inspections;
- (b) Title to the Property shall be good and marketable; and
- (c) As of the date hereof, and as of the Closing Date, all of Seller's representations and warranties shall be true and correct in all material respects.
- (d) If the conditions described in subsections (a) through (c) above are not satisfied as of the dates specified, or if no date is specified, by the Closing Date, then Buyer shall have the option of terminating this Agreement in writing and receiving back the Deposit, excepting that issues related to title shall be addressed as provided in Section 3 above.

12. BINDING EFFECT.

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, administrators, successors and assigns.

13. ENTIRE AGREEMENT.

This Agreement represents the entire and complete Agreement and understanding between the parties and supersedes any prior Agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of the property hereunder. This Agreement cannot be amended except by written instrument executed by Seller and Buyer.

14. HEADINGS AND CAPTIONS.

The headings and captions appearing herein are for the convenience of reference only and shall not in any way affect the substantive provisions hereof.

15. GOVERNING LAW.

This Agreement shall be construed in all respects in accordance with, and governed by, the laws of the State of Maine. All parties hereto hereby consent to the exclusive jurisdiction of the Superior Court for the County of Cumberland in the State of Maine, for all actions, proceedings and litigation arising from or relating directly or indirectly to this Agreement or any of the obligations hereunder, and any dispute not otherwise resolved as provided herein shall be litigated solely in said Court.

16. NOTICE.

Any notice required or permitted under this Agreement shall be deemed sufficient if mailed with first class postage affixed or delivered in person to:

FOR THE BUYER: City of Portland
 Attention: City Manager
 389 Congress Street
 Portland, ME 04101

With a copy to: City of Portland
 Attention: Office of The
 Corporation Counsel
 389 Congress Street
 Portland, ME 04101

FOR THE SELLER: PH Warren Ave, LLC
 401 Warren Avenue
 Portland, ME 04103
 Attn: Peter Holmes

With a copy to: Richard H. Spencer, Jr., Esq.
 Jensen Baird Gardner Henry
 10 Free Street

P.O. Box 4510
Portland, ME 04112-4510

Any notice so mailed shall be deemed delivered and received 3 days after mailing. Either party may change its address for purposes of this paragraph by giving the other party notice of the new address in the manner described herein.

17. SIGNATURES; MULTIPLE COUNTERPARTS.

This agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement. A signature in a faxed, pdf or other reproduced or electronic document shall be considered the equivalent of an original signature.

18. BROKERS.

Seller and Buyer each represents and warrants that neither has dealt with a real estate broker in connection with this transaction, other than Garrett Adams and Daren Hebold of LUX Realty Group ("LUX"), whose commission will be paid by Seller pursuant to the terms of a separate agreement between Seller and LUX. Seller agrees to indemnify, defend, and hold Buyer harmless from any claims made by any broker should Seller's representation in this paragraph be false. The foregoing indemnities shall include all legal fees and costs incurred in defense against any such claim, and shall survive closing.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals on the day and year first above written.

CITY OF PORTLAND

WITNESS

By:_____
Jon Jennings
Its: City Manager

PH WARREN AVE, LLC

WITNESS

By:_____
Peter Holmes
Its: Manager

Exhibit A

Exhibit B

P:\RHS\Spencer\Holmes, Peter\ACQUISITION OF 40 ACRES WARREN AVE 2013\SALE ON INTERIOR PORTION\CITY CONTRACT\REVISED FEB 9\Purchase and Sale Agr - RHS - RL - 03-20-15.docx

**CITY OF PORTLAND
MEMORANDUM**

TO: Transportation Committee
Councilor David Marshall, Chair
Councilor Jon Hinck
Councilor Kevin Donoghue
Councilor Justin Costa

FROM: John Peverada, Parking Manager

DATE: July 13, 2015

RE: **Two Parking Meters on Commercial St. @ Long Wharf**

Each fall we remove the two parking meters in front of the Portland Lobster Company @ Long Wharf on Commercial St. for the months of September and October to accommodate the increased number of tour busses in the area. This year, David Pulido, the owner of Portland Lobster Company and Bill Frappier, the owner of Portland Discovery Tours are asking for the removal of the 2 parking meters outside of the Portland Lobster Company as soon as possible due to the heavy bus loads already arriving on Commercial Street.

“They state” that since this is such a major drop-off/pick up point for the summer as well, they are requesting that those meters actually be removed as soon as possible and in the future from 5/15 through 10/31 of next year, which will definitely facilitate easier drop off/pick up and mitigate what could be a dangerous situation right now with buses sometime dropping off and picking up passengers in the traffic lane on Commercial Street. In addition the Commercial Street road construction is adding even more to this precarious situation.

Thank you in advance for taking time to consider this request.



Michael J. Bobinsky
Director of Public Services

To: Chair Marshall & members of the Transportation, Sustainability and Energy Committee
From: Troy Moon, Parks & Environmental Programs Manager
Re: Pesticide Ordinance Drafting
Date: 7/10/2015

During your May meeting committee members and staff discussed how to best advance work on a City ordinance regarding the use of chemical pesticides. Recognizing that the TS&E Committee has a very ambitious work plan, members expressed concern about our staff's ability to support a task force while continuing work on other projects. During the conversation staff indicated that it would not be feasible to begin work on a task force until at least September and even then it could be challenging given current assignments. The committee then tabled the issue to the July meeting in order discuss balancing priorities against existing staff resources.

In order to maintain momentum on this issue that is of great concern to many members of the community we propose that staff develop a draft ordinance over the summer and present it to the committee for review and discussion in the fall. We would propose the September or October meeting, depending on the timing of other items that may require space on your agenda. As part of our drafting process we will seek input from stakeholders and incorporate their comments before presenting a working draft ordinance to your committee. Members of the public would then have an opportunity for formal comment when we present the draft ordinance and then again before the full council should you recommend it.

We feel this approach makes efficient use of staff resources and allows us to make progress on an issue that has long been of interest to the committee.