1. Legal Ad

   Documents:

   PB LEGAL AD 4-25-17.PDF

2. Agenda

   Documents:

   PB AGENDA 4-25-17.PDF

3. Maine Medical Center IDP

   3.I. Memo And Attachments

   Documents:

   MAINE MED (MEMO AND ATTACHMENTS).PDF

   3.II. Applicants Submittal And IDP

   Documents:

   MAINE MED (APPLICANTS SUBMITTAL AND IDP).PDF

4. 58 Fore Street

   4.I. Report And Attachments

   Documents:

   FORE ST. - 58 (REPORT AND ATTACHMENTS).PDF

5. Emergency Shelter Amendments

   5.I. Report And Attachments

   Documents:

   EMERGENCY SHELTERS (REPORT AND ATTACHMENTS).PDF

6. 510 Stevens Avenue

   6.I. Memo And Attachments

   Documents:

   STEVENS AVE. - 510 (MEMO AND ATTACHMENTS).PDF

7. 5-7 Cumberland Avenue

   7.I. Memo And Attachments

   Documents:

   CUMBERLAND AVE. - 5-7 (MEMO AND ATTACHMENTS).PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will meet on **TUESDAY**, **April 25, 2017**, Council Chambers, 2nd Floor, City Hall, 389 Congress Street.

Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to planningboard@portlandmaine.gov

Workshop: 4:30 p.m.

i. Institutional Development Plan and Regulatory Framework; Maine Medical Center, City of Portland. (4:30 – 6:30 p.m. estimated time) The Board will hold an introductory workshop on Maine Medical Center's proposed Institutional Development Plan (IDP) and the draft Regulatory Framework, which guides the hospital's future development within the zoning code. The IDP is proposed under the Institutional Overlay Zone, which is pending before the City Council.

Dinner Break – 6:30 to 7:00 p.m.

Public Hearing - 7:00 p.m.

i. Traffic Movement Permit; 58 Fore Street; CPBS, LLC., Applicant. (estimated time 7:00- 7:45 p.m.). The Planning Board will hold a public hearing on the Traffic Movement Permit, which addresses estimated traffic impacts and mitigation measures for the approved Master Development Plan for 58 Fore Street. The proposed Traffic Movement Permit will be reviewed under the City's delegated review authority.

ii. Zoning Text Amendments for Emergency Shelters in B-4, B5, Il, Ilb, IM and IH zones, City of Portland, Applicant. (estimated time 7:45- 8:30 p.m.) The Planning Board will hold a public hearing on the proposed text amendments to the zoning ordinance to update the conditional use standards for emergency shelters, and to allow emergency shelters as conditional uses in the B-4, B-5, IL, IL-b, IM and IH zones. They are currently permitted as conditional uses in the B-3 zone and the proposed updated conditional use standards are proposed in the B-3 zone.

Evening Workshop (immediately following the public hearing)

i. R-5 to B-1b Map Amendment; 510 Stevens Avenue; Steven and Roberta Cope, Applicants. (estimated time 8:30- 9:00 p.m.) The Planning Board will hold a workshop on a proposed rezoning of 510 Stevens Avenue from R-5 to B-1b. The extension of the B-1b zone to incorporate the lot is proposed in order to develop a mixed-use project with residential and retail uses.

ii. Level III Site Plan and Subdivision Application; 5-7 Cumberland Avenue; Banner Properties, LLC., Applicant. (estimated time 9:00 p.m.) The Planning Board will hold a workshop on a proposed 4-story building with six (6) condominium units. The building footprint is 1,791 sq. ft. with a total square footage of 7,567 sq. ft. The site is in the residential R-6 zone.

ELIZABETH BOEPPLE, CHAIR - PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE
PLANNING BOARD

Elizabeth Boepple, Chair
Sean Dundon, Vice Chair
Carol Morrissette
David Eaton
Brandon Mazer
Maggie Stanley
Lisa Whited

AGENDA
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on **Tuesday, April 25, 2017**, Council Chambers, 2nd Floor, City Hall, 389 Congress Street.

Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to planningboard@portlandmaine.gov

WORKSHOP – 4:30 p.m.

i. Institutional Development Plan and Regulatory Framework; Maine Medical Center, City of Portland. (4:30 – 6:30 p.m. estimated time) The Board will hold an introductory workshop on Maine Medical Center's proposed Institutional Development Plan (IDP) and the draft Regulatory Framework, which guides the hospital's future development within the zoning code. The IDP is proposed under the Institutional Overlay Zone, which is pending before the City Council.

Dinner Break 6:30 – 7:00 p.m.

PUBLIC HEARING – 7:00 p.m.

1. ROLL CALL AND DECLARATION OF QUORUM
2. COMMUNICATIONS AND REPORTS
3. REPORT OF ATTENDANCE AT THE MEETING HELD ON APRIL 13, 2017:

Workshop: Boepple, Dundon, Eaton, Morrissette, Stanley and Whited. Mazer absent.
Public Hearing: Boepple, Dundon, Eaton, Morrissette, Stanley and Whited. Mazer absent.

4. REPORT OF DECISIONS AT THE MEETING HELD ON APRIL 13, 2017:

i. Amendment to Subdivision Plan; 749 Congress Street; Denovo, LLC., Applicant. Dundon moved and Morrissette seconded a motion to approve the amended subdivision plan with one condition of approval. Vote: 6-0, Mazer absent.

ii. Portland's Proposed New Comprehensive Plan, City of Portland, Applicant. Dundon moved and Morrissette seconded a motion to find the proposed Comprehensive Plan is in conformance with the State Growth Management Act and to recommend to the City Council adoption of the Comprehensive Plan. Vote: 6-0. Mazer absent.

5. NEW BUSINESS

i. Traffic Movement Permit; 58 Fore Street; CPBS, LLC., Applicant. (estimated time 7:00- 7:45 p.m.). The Planning Board will hold a public hearing on the Traffic Movement Permit, which addresses estimated traffic impacts and mitigation measures for the approved Master Development Plan for 58 Fore Street. The proposed Traffic Movement Permit will be reviewed under the City's delegated review authority.

ii. Zoning Text Amendments for Emergency Shelters in B-3, B-4, B5, Il, Ilb, IM and IH zones, City of Portland, Applicant. (estimated time 7:45- 8:30 p.m.) The Planning Board will hold a public hearing on the proposed text amendments to the zoning ordinance to update the conditional use standards for emergency shelters, and to allow emergency shelters as conditional uses in the B-4, B-5, IL, IL-b, IM and IH zones. They are currently permitted as conditional uses in the B-3 zone and the proposed updated conditional use standards are proposed in the B-3 zone.

6. EVENING WORKSHOP (Immediately following the public hearing)

i. R-5 to B-1b Map Amendment; 510 Stevens Avenue; Steven and Roberta Cope, Applicants. (estimated time 8:30- 9:00 p.m.) The Planning Board will hold a workshop on a proposed rezoning of 510 Stevens Avenue from R-5 to B-1b. The extension of the B-1b zone to incorporate the lot is proposed in order to develop a mixed-use project with residential and retail uses.

ii. Level III Site Plan and Subdivision Application; 5-7 Cumberland Avenue; Banner Properties, LLC., Applicant. (estimated time 9:00 p.m.) The Planning Board will hold a workshop on a proposed 4-story building with six (6) condominium units. The building footprint is 1,791 sq. ft. with a total square footage of 7,567 sq. ft. The site is in the residential R-6 zone.

Memorandum
Planning and Urban Development Department
Planning Division

To:	Chair Boepple and Members of the Portland Planning Board
From:	Jean Fraser, Planning Division
Date:	April 21, 2017 for meeting on April 25, 2017
Re:	**MMC request for IOZ designation: Draft Institutional Development Plan (IDP)**
Applicant:	Maine Medical Center (MMC)

I. INTRODUCTION

Maine Medical Center applied in January, 2017 for a zoning amendment to create an MMC Institutional Overlay Zone (IOZ) to allow MMC to modernize and expand their Bramhall Street campus. The ordinance that provides the framework for this zoning amendment was recommended by the Planning Board to the City Council in March 2017, and a City Council hearing on this broad "enabling" ordinance text will take place on May 1, 2017.

The process for designation of an IOZ requires the institution to prepare an Institutional Development Plan that is a proactive planning document for identifying and addressing anticipated change and growth by an institution. The IOZ also requires a Regulatory Framework be submitted, which would be included in the Land Use Code and identifies the land area to be included on the zoning map as the Institutional Overlay Zone with the associated requirements. The Planning Board is authorized to review and approve an Institutional Development Plan that is consistent with the standards of the enabling legislation for an IOZ. The Planning Board reviews and recommends to City Council the Regulatory Framework and the IOZ boundaries. Refer to Attachment 3 for the chart for the process and interrelationships of the Institutional Overlay Zone, Institutional Development Plan and IOZ boundaries for each institution.

MMC has recently submitted this first substantive draft Institutional Development Plan (IDP), along with a cover letter (Attachments A and B). A preliminary draft IDP was included in the January 10, 2017 workshop memo and informed the discussion of the IOZ enabling legislation. That early draft IDP was not formally reviewed, as it was still under development and the final requirements of the new IOZ Ordinance were also still in development.

Since January MMC has brought in additional consultants and met frequently with Planning and other City staff, as well as the public, to develop the IDP further and more fully address the Planning Board's recommended IOZ Ordinance requirements. The April draft IDP (Attachment B) represents a substantial expansion of the earlier draft and provides a strong basis for moving forward with the IOZ process of finalizing the IDP and Regulatory Framework.

MMC has indicated that this draft IDP (Attachment B) is not comprehensive in respect of the transportation and design sections, in part due to the need to re-consider where and how to address the potential parking demand related to future growth. Therefore, this workshop is an introductory workshop to provide the Board with an overview of MMC's short and long-term plans for their campus and an opportunity to comment on areas where further depth or reconsideration is appropriate. Subsequent workshops on specific topics are anticipated.

II. STATUS OF THE REVIEW

MMC's request for designation of their campus as an Institutional Overlay Zone (IOZ) is allowed by the enabling Institutional Overlay Zone Ordinance that was recommended by the Planning Board in March 2017 and is now being considered by the City Council for adoption. During the discussions on the new IOZ Ordinance a flow chart of the zoning process and the review process for a specific institution's IOZ was presented (Attachment 3). The first stage of the process is now almost complete and MMC's draft Institutional Development Plan (IDP) is within the second stage ie the submission and review of the required submittals for an institution-specific IOZ designation. The required submittals are:

- *Institutional Development Plan (IDP):* The IDP is a longer term development or master plan, to be developed by the eligible institutions, which would guide each institution's development over the life of the plan. The IDP is envisioned as the basic building block of the Institutional Overlay Zone. The IDP is intended as a stand-alone document. This would be approved by the Planning Board.
- *Regulatory Framework:* The Regulatory Framework is within the land use code as the ordinance requirements for each institution, and is intended to evolve from the IDP. The Regulatory Framework would establish the parameters to allow each institution to grow as envisioned in the IDP, yet also formalize requirements, guidelines, and performance measures that address the major ramifications of institutional growth and change. The Regulatory Framework would be adopted into the land use code by the City Council.
- *IOZ - Zoning Map:* The boundaries of each institution's IOZ would be defined as a geographic element represented as an amendment to the city's zoning map. This would be adopted by the City Council. [Prepared once the IDP and Regulatory Framework are finalized].

III. OVERVIEW OF MMC'S EXPANSION PROPOSALS AS PRESENTED IN THE INSTITUIONAL DEVELOPMENT PLAN

The MMC IDP outlines three "phases" of expansion:

- ***Short Term Development Plan (0-5 years)* (IDP pp 58-59):**
  - Total of 345,000 sq ft additional floorspace in a new Congress Street hospital building and in 2 added floors to East Tower
  - 1360 new parking spaces in 3 added floors to visitor garage and a new garage (indicated at Gilman Street though other options are under investigation) to replace the existing spaces in the demolished employee parking garage

Fig.3.3 Short-Term Development Plan (0-5 Years)

★ Alternative employee parking solutions are currently being investigated.

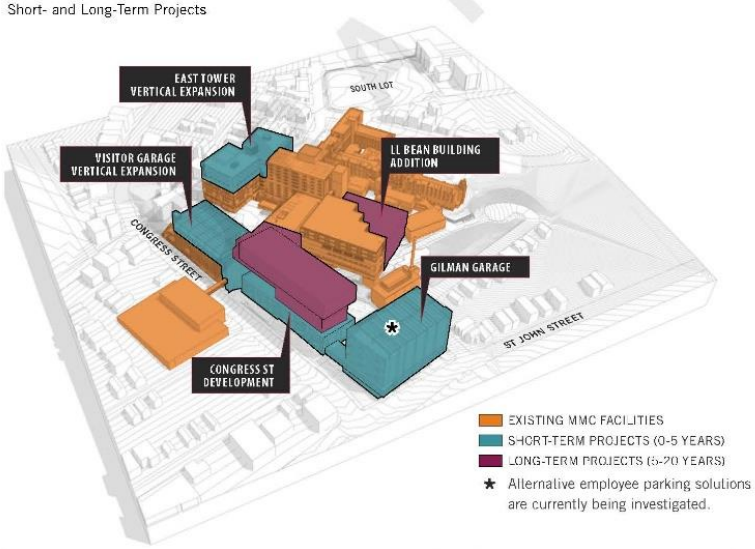
- ***Long Term Development Plan (5-20 years) (IDP pg 60)***
  - Additional 420,000 sq ft of floorspace added to Congress Street Phase 1 hospital and LLBean buildings

Long-Term Projects

Congress Street Development, Phases II and III (Vertical Expansion, Approx. 300,000 GSF)
Future vertical expansion to include additional private inpatient beds.

LL Bean Building, MFP Phase III (Addition, 120,000 GSF)
Expansion of diagnostics and treatment, and interventional platforms. If necessary, existing Laundry Building and Engineering Services Building may be modified or removed to facilitate expansion.

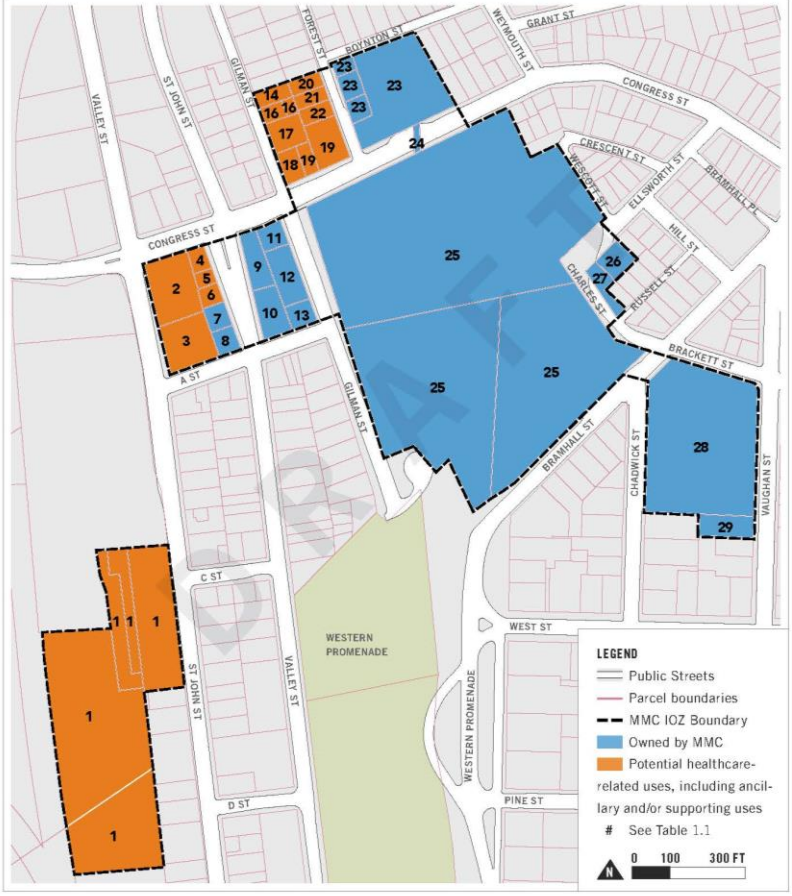
Fig.3.4 MMC Development Plan: Short- and Long-Term Projects



- ***Long Term Redevelopment Zones (IDP pg 110)***
  - Other sites, not all currently in MMC ownership, as shown in IOZ boundary to right, in the Table 1 below and on page 110 of the IDP

1. BOUNDARY

MAP 1.1 Maine Medical Center IOZ Boundary



IV BACKGROUND re ZONING

MMC has a Contract Zone that was finalized in 2005 (Attachment 1) that includes the MMC main campus on the south side of Congress Street. On the other side of Congress Street (887 Congress Street) MMC has a smaller Contract Zone dating from 1997 that generally changed the zoning from R6 to B2 (Att. 2).

The main campus Contact Zone allowed for specific developments within a defined area and included a number of other commitments such as a Transportation Demand Management (TDM), helipad management, snow-ban parking and public infrastructure improvements. Some aspects of the modernization and expansion currently proposed or under consideration by MMC could be implemented under the existing Contract Zones, but other elements would require an amendment to the Contract Zone(s). Planning staff have encouraged MMC to pursue the IOZ instead of amending the Contract Zone(s), and MMC began that process in January as outlined above.

The MMC IOZ *Regulatory Framework* and proposed boundaries would, once recommended by the Planning Board and adopted by the City Council, replace the two existing Contract Zone Agreements currently held by MMC. For any areas outside the Contract Zone boundaries that are included in the IOZ boundary, the *Regulatory Framework* would replace the underlying zoning in respect of specified MMC uses and development. The underlying zone would continue to apply to non-MMC properties. The table below illustrates what the proposed MMC IOZ designation (based on the draft MMC IDP in Att. B) would allow compared to what is allowed under current zoning, unless the Contract Zone Agreement(s) are formally amended:

Table 1: Zoning Comparison

Projects identified in Development Plan (within proposed IOZ boundary)	***What allowed by Contract Zone(s)[1.]***	***Allowed by Underlying Zone (outside Contract Zone)***	***Proposed to be allowed by MMC IOZ***
SHORT TERM (0-5 YEARS)			
Site of employee garage (to be demolished): New 6 story hospital (285,000 sq ft) building accessed from Congress Street	Expansion of MMC uses allowed[1] but no additional height allowed unless the Contract Zone is amended		225 ft height – no transition zone
Existing visitor parking garage: Addition of 3 floors to accommodate 225 parking spaces	70 ft height		100 ft height – no transition zone
East Tower: addition of 2 floors (60,000 sq ft) to accommodate 64 inpatient beds and relocated heliport	95 ft height		150 ft height – no additional transition zone
Gilman Street: new 13 story garage to accommodate 1135 parking spaces for employees (alternative employee parking currently being investigated)	Expansion of MMC uses allowed[1], but no additional height allowed unless Contract Zone is amended		150 ft height and narrow transition zone
122 St John Street (existing building and open area to rear)	Could be acquired by MMC and used for uses allowed by the underlying zone, except hospital uses, unless the Contract Zone is amended	B2: 45-65 ft.	65 ft height for building; 110 ft height for open area
LONG TERM DEVELOPMENT (5-20 YEARS)			
Congress St new hospital building (on site of former employee garage): to be expanded vertically to add 300,000 sq ft (appears to bring to a total of 12 stories)	Expansion of MMC uses allowed[1], but no additional height allowed unless contract Zone is amended.		225 ft height- no transition zone
LL Bean building: infill expansion (120,000 sq ft)	111 feet high (vertical expansion anticipated)		225 ft height – plus transition zone towards Gilman St

Projects identified in Development Plan (within proposed IOZ boundary)	***What allowed by Contract Zone(s)[1.]***	***Allowed by Underlying Zone (outside Contract Zone)***	Proposed to be allowed by MMC IOZ
LONG TERM CONCEPTUAL (NO SPECIFIC PROPOSALS)			
South Parking lot (existing surface lot)	Expansion of MMC uses allowed[1] but no additional height limit allowed unless the Contract Zone is amended.	(Underlying zone is R6)	75 ft in height plus transition zones on 3 sides
Existing MMC building 887 Congress	Allows 72 feet in height and general, business and professional offices and parking unless Contract Zone (Att 2) is amended		100 ft height plus one transition zone to north
Sportsman Club	Could be acquired by MMC and used for uses allowed by the underlying zone, except hospital uses, unless the Contract Zone is amended	Congress St: B2 45-65 ft. North side: R6 45 ft height	75 ft height plus one transition zone to north
Greyhound Terminal Block	Could be acquired by MMC and used for uses allowed by the underlying zone, except hospital uses, unless the Contract Zone is amended	B2: 45-65 ft.	75 ft height- no transition zone

[1.] **Note: As qualified by this annotated quote from Main Campus (2005) Contract Zone: "***MMC will restrict any further expansion of uses (*defined as *new construction of building(s) and or conversion of existing uses (including residential uses) into hospital related uses and the like. It shall not mean the occupancy of an existing building which contains legally confirming medical related use) in the Western Prom/Parkside/Gilman Street neighborhoods to the property specifically included in the following defined* Campus [main campus; existing medical office building opposite main campus; Vaughan Street parking lot and McGeachey Hall; West Street medical Office building; block bounded by Congress Street, Gilman street, Valley Street, and A Street] (qualified by *"this provision shall not prohibit MMC from expanding or building in other areas of the City if permitted by zoning)*

V. STAFF ANALYSIS

A. IDP Development Process

The IOZ process requires the following actions by the institution that requests an IOZ designation and MMC have met the requirements as follows:

- *Application:* Submitted
- *Required Public Involvement*: Two meetings for the wider neighborhood were held in January and March regarding the IDP/IOZ
- *Required Scoping meeting*: At the time the IOZ designation was requested the required contents for the IDP/Regulatory Framework had not been finalized. The content was discussed at frequent meetings with the Planning Board and staff. The Planning Board confirmed that these meetings would constitute the "Scoping meeting" and provided comments indicating that the emphasis should be on identifying the implications/impacts of the expansion proposals, and to clarifying transportation (including TDM) and transition/edge treatments.

B. IDP Content

The draft IDP (Attachment B) was received on April 7, 2017. Staff has not prepared detailed comments; the following represents a preliminary analysis.

- *IOZ Content Requirements:*
  It is noted above that the Transportation and Design sections are still being developed. Otherwise the content broadly addresses the IDP content sections of the IOZ ordinance (sections headed "Context Information" and "Assessment of Future Institutional Growth and Change"). Staff have met with MMC to discuss transportation aspects where further information is requested, and similar meetings regarding design have been arranged. The staff and reviewers from other departments are reviewing the IDP and will have comments at a subsequent workshop.

  The content headings for the Regulatory Framework are "if applicable" and many of these have not yet been addressed.

- *Presentation:*
  The draft IDP (Attachment B) has a significant amount of data and information which is presented in an easily readable and accessible document, using charts, tables, maps, and graphics to visually display data in an effective way. It provides a comprehensive context for consideration of MMC's proposed changes and development, and represents a major undertaking and a successful step in developing the IDP and Regulatory Framework.

- *Level of Detail:*
  The broad approach is excellent although all sections would benefit from additional detail. There some parts of the "needs analysis" that are fairly general, as are the plans for addressing potential impacts. It is understood that additional material is being prepared and staff suggest that additional narrative, tables, and graphics would be helpful to demonstrate both the analysis of needs/impacts and clearly translate these needs into plans for future growth/change. It also would be helpful to have a clearer idea of how proposals have addressed public comments and concerns.

- *Linkage between IDP and Regulatory Framework:*
  The Regulatory Framework is intended to clearly relate to and derive from the IDP. For example, in locations where the Regulatory Framework specifies particular heights, the plan would be expected to include massing diagrams or conceptual plans that provide the rationale for the heights requested. Similarly, sidewalk material changes requested in the Regulatory Framework should be firmly grounded in the IDP.

- *Relationship between Regulatory Framework and Site Plan Review:*
  Generally, the Regulatory Framework leaves many elements to site plan review (e.g. building envelope design and landscape and public realm design). The site plan review process will follow the approval of the IDP and will implement the hospital's Regulatory Framework. Thus the Regulatory Framework should articulate development parameters regarding campus-wide strategies that balance the large building envelopes, increased intensity of use, and local impacts of proposed institutional growth and change.

  One option might be to add further detail to the Regulatory Framework to establish clear standards or requirements that are over and above those which would be applied to any site plan. The IDP analysis and assessment sections refer to a number of potential impacts and/or proposals to minimize impacts, but these are not reflected in the Regulatory Framework.

VI. PUBLIC COMMENT

During the development of the IOZ Ordinance text (November 2016- March 2017) the Planning Division received many comments that related to the MMC IDP and related IOZ designation process. The Board has previously seen these comments, but they have been brought forward to ensure the Board is aware of the detailed MMC comments that relate to the current review (PC1-PC22).

Since MMC submitted the draft Institutional Development Plan (IDP) on April 7, 2017 the Planning office has received one written comment (PC1 MMC-IOZ). This is from the St John Valley Neighborhood Association, who have prepared extensive comments on the content of the IDP and on how it complies with the new IOZ Ordinance.

Staff are aware that MMC has invited neighborhood representatives to give them comments on the draft IDP and understands that MMC is arranging further public meetings on the IDP.

VII. NEXT STEPS

- MMC to submit additional material
- Clarify subsequent workshop(s) and topics to be covered at these workshop(s)

VIII. ATTACHMENTS

Memo Attachments from staff

1. 2005 Contract Zone for Maine Medical Center
2. 1997 Contract Zone for 887 Congress Street
3. Flowchart for IOZ ordinance and designation process

Public Comments

PC 1- PC22 - (Brought forward) Public Comments from IOZ Ordinance review
PC1 MMC-IOZ - St John Valley Neighborhood Association 4.18.17 on 4.7.17 MMC IDP

Applicants Submittal

A. MMC Cover letter to Planning Board 4.7.17
B. Draft MMC Institutional Development Plan submitted 4.7.17

Order 172-04/05
Given 1st reading: 2/23/05 Postponed on 3/7/05
Public Hearing & postponed on 4/4/05
Amended & Passage: 4/25/05 9-0

JILL C. DUSON (MAYOR)(A/L)
PETER O'DONNELL (A/L)
JAMES F. CLOUTIER(A/L)
NICHOLAS M. MAVODONES (A/L)

CITY OF PORTLAND

IN THE CITY COUNCIL

WILLIAM R. GORHAM (1)
KAREN A. GERAGHTY (2)
DONNA J. CARR (3)
CHERYL A. LEEMAN (4)
JAMES I. COHEN (5)

AMENDMENT TO CITY CODE
SEC. 14-49 (ZONING MAP AMENDMENT)
RE: CONDITIONAL REZONING FOR PROPERTY
IN VICINITY OF WESTERN PROMENADE/ MAINE MEDICAL CENTER

ORDERED, that the Zoning Map of the City of Portland, dated December 2000 as amended and on file in the Department of Planning & Development, and incorporated by reference into the Zoning Ordinance by Sec. 14-49 of the Portland City Code, is hereby amended to reflect a conditional rezoning as detailed below:

CONDITIONAL ZONE AGREEMENT
MAINE MEDICAL CENTER

AGREEMENT made this ____ day of _____, 2005, by **MAINE MEDICAL CENTER**, a Maine corporation with a principal place of business located in the City of Portland, County of Cumberland and State of Maine, its successors and assigns ("**MMC**").

WITNESSETH:

WHEREAS, MMC is the owner of land and buildings located in Portland at Map 53, Block D, Lots 1, 2 and 7; Map 53, Block E, Lots 1, 2, 10 and 13; Map 53, Block G, Lots 1 and 13; Map 54, Block H, Lot 1; and Map 64, Block C, Lots 1 and 2; and Map 55, Block B, Lot 13 (the "**PROPERTY**"); and

WHEREAS, MMC is the largest provider of obstetrical services in Maine and provides the only statewide fulltime maternal fetal medicine service serving women and newborns at high risk and **MMC** has the only Level III neonatal intensive care unit in Maine; and

WHEREAS, in order to respond to the changing professional and clinical standards for the care of sick infants within the neonatal intensive care unit and to meet the spatial requirements of today's routine and high risk obstetrical and newborn care, **MMC** must build an addition comprised of 192,000 square feet (the "Charles Street Addition"); and

WHEREAS, MMC proposes to construct the Charles Street Addition by expanding vertically, on the site of an existing medical building bounded generally by Charles Street, Wescott Street, Ellsworth Street and Crescent Street; and

WHEREAS, in order to avoid a substantial expansion of the footprint of the buildings at **MMC** and, instead, to construct the Charles Street Addition by vertical expansion, it is necessary to modify the otherwise applicable height requirement in the R-6 Zone; and

WHEREAS, in order to accommodate the needs of the Charles Street Addition and to improve parking and traffic circulation on the **MMC** campus, **MMC** proposes to construct a new 512 car capacity parking garage along Congress Street (the "New Parking Garage"); and

WHEREAS, in order to achieve the requisite parking capacity within the available space, **MMC** needs to build the New Parking Garage at a height taller than the currently applicable height limit in the R-6 Zone and also to locate the New Parking Garage closer to Congress Street than the currently applicable setback requirement in the R-6 zone; and

WHEREAS, in order reduce transport time for critical patients coming to **MMC**'s emergency department, **MMC** proposes to construct a helicopter landing pad on top of the

existing parking garage which fronts on Congress Street (the "Helicopter Landing Pad" also occasionally referred to as "Heliport or Helistop"); and

WHEREAS, in order to replace currently fragmented heating and cooling systems throughout its campus, **MMC** intends to construct a central utility plant, built into the hillside between the hospital and Gilman Street (the "Central Utility Plant"); and

WHEREAS, the Central Utility Plant will be built at a proposed height of 45 feet but is also designed to accommodate a future vertical expansion of two additional floors, with a maximum future height of 70 feet; and

WHEREAS, MMC currently has operating rooms, intensive care beds, and adult and pediatric beds in an existing building constructed in 1985 (expanded in 1998) and referred to as the "L. L. Bean Wing;" and

WHEREAS, MMC has no current construction plans for the L. L. Bean Wing, but anticipates that the L. L. Bean Wing will need to be expanded vertically at some time within the next decade; and

WHEREAS, the L. L. Bean Wing was designed structurally to accommodate such vertical expansion by an additional two stories; and

WHEREAS, MMC desires to provide for such eventual vertical expansion within this Agreement and additional vertical expansions, except as noted below, are not included within the scope of this Contract and will be subject to negotiation and approval in the future, when presented; and

WHEREAS, by expanding vertically for the Charles Street Addition rather than horizontally, **MMC** will need to remove only two residential buildings, and will do so in full

compliance with the housing replacement requirements of section 14-483 of the Portland Code of Ordinances; and

WHEREAS, in addition to such required replacement, **MMC** will divest itself of ownership of nine other buildings (two on Crescent Street, two on Ellsworth Street, one on Hill Street and four on Bramhall Street), enabling others to return them to residential use; and

WHEREAS, **MMC** has requested a rezoning of the **PROPERTY** in order to permit the above-described improvements; and

WHEREAS, the **CITY** by and through its Planning Board, pursuant to 30-A M.R.S.A. §4352(8) and Portland City Code §14-60, *et seq.*, and §14-315.3, after notice and hearing and due deliberation thereon, recommended the rezoning of the **PROPERTY** as aforesaid, subject, however, to certain conditions more specifically set forth below; and

WHEREAS, the **CITY** has determined that because of the unique circumstances of the location of an urban medical center campus in close proximity to historic and densely populated neighborhoods within the R-6 Zone, and in order to balance the interests of **MMC** and its residential neighbors, it is necessary and appropriate to impose the following conditions and restrictions in order to ensure that the rezoning is consistent with the City's Comprehensive Plan; and

WHEREAS, on April 25, 2005, the **CITY** authorized the amendment to its Zoning Map based upon the terms and conditions contained within this Agreement, which terms and conditions become part of the zoning requirements for the **PROPERTY**;

NOW THEREFORE, in consideration of the rezoning, **MMC** covenants and agrees as follows:

1. **MMC** will restrict any further expansion of its uses[1] in the Western Prom/ Parkside/ Gilman Street neighborhoods to the property specifically included in the following defined Campus[2]:

(a) The main campus, bounded by the north side of Bramhall Street, the western side of Wescott Street, a portion of the northern side of Crescent Street terminating with the proposed end of the new garage, and the south side of Congress Street between the existing and proposed new garage, and the eastern side of Gilman Street;

(b) The existing medical office building located on Congress Street across from the main campus;

(c) The Vaughn Street parking lot and McGeachey Hall;

(d) The existing West Street Medical Office Building located behind the row houses at the eastern end of West Street (CBL 55-B-13);

(e) The block bounded on Congress Street, Gilman Street, Valley Street and A Street.

2. The following exhibits are incorporated into and made a part of this Agreement:

Exhibit A: Helistop Overlay Zone Map

Exhibit B: Site Plan

1. Sheet C050: Campus Plan, Revision date: 9/16/04
2. Sheet C100: Site Plan, Revision date: 9/16/04
3. Sheet C101: Site Plan, Revision date: 9/16/04
4. Sheet C102: Site Plan, Revision date: 9/16/04
5. Sheet C103: Site Plan, Revision date: 9/16/04
6. Sheet C400: Landscape Plan, Revision date: 9/16/04
7. Sheet C401: Landscape Plan, Revision date: 9/16/04
8. Sheet C402: Landscape Plan, Revision date: 9/16/04

[1] "Future expansion of its uses" shall mean new construction of building(s) and or conversion of existing uses (including residential uses) into hospital related uses and the like. It shall not mean the occupancy of an existing building which contains a legally conforming medical related use.

[2] This provision shall not prohibit **MMC** from expanding or building in other areas of the City if permitted by zoning.

9. Sheet C403: Landscape Plan, Revision date: 9/16/04
10. Landscape Plan at Existing Garage, See sheets 401 & 402
11. Pedestrian Connection to Congress Street, 4/14/04
12. Parking Garage Rendered Elevation, North, (Option 1; Exhibit B, p.12, April 25,2005)
13. Parking Garage Rendered Elevation, (Option 1, Exhibit B, p. 12, perspective; April 25, 2005)
14. Parking Garage Rendered Elevation, South, 1/27/05
15. Central Utility Plant Rendered Elevation, 1/27/05
16. Charles Street Addition Rendered Elevation, South 1/27/05
17. Charles Street Addition Rendered Elevation, East 1/27/05
18. Charles Street Addition Rendered Elevation, North 1/27/05
19. Charles Street Material Board 1/27/05

20. Street Vacation/Acceptance and Land Transfer Plan (Sheet 1)
21. Street Vacation/Acceptance and Land Transfer Plan (Sheet 1)
22. Concrete Sidewalk Plan

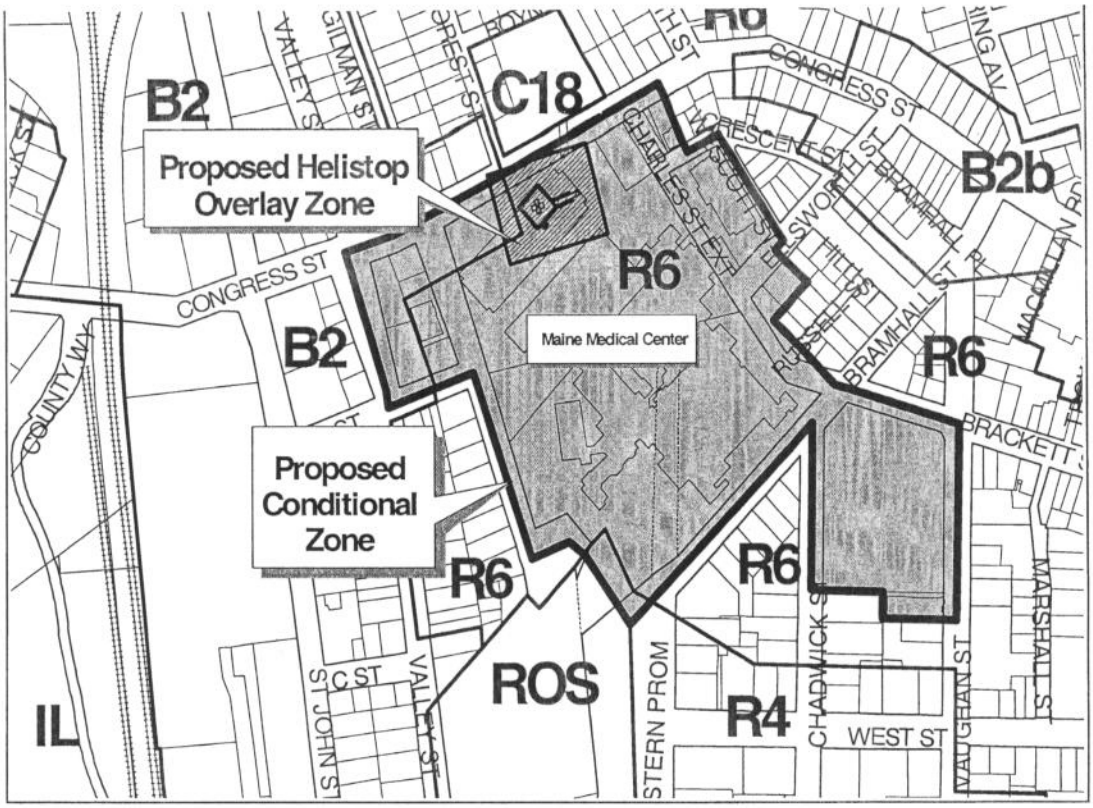
Exhibit D: Miller Memo 01/06/05 and MMC Helipad Flight Paths, Harris Miller Miller & Hanson Inc., 9/16/04

Exhibit E: Helipad Operating Guidelines (2 pages); source, Lifeflight of Maine

Exhibit F: Helipad Plans
1. Heliport Plan, 1/27/05
2. Heliport Elevation, 1/27/05
3. Heliport Perspective, 1/27/05

Exhibit G: Vaughan Street Parking Lot Landscaping Plan
1. Landscape Plan, 7/8/04
2. Wall Treatment
3. Fence Detail
4. Landscape Section

3. The **CITY** shall amend the Zoning Map of the City of Portland, dated December 2000, as amended from time to time and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by Portland City Code §14-49, by adopting the map change amendment below, which map change includes a Helistop Overlay Zone as more particularly depicted on Exhibit A.



Proposed Rezoning for Maine Medical Center from R6 & B2 to Conditional with Helistop Overlay Zone

January 2005

100 0 100 200 Feet

Map prepared by the City of Portland's Department of Planning & Development and the GIS Workgroup

4. The **PROPERTY** and site improvements shall be developed and operated substantially in accordance with the site plan shown on Exhibit B (the "Site Plan"), which Site Plan includes but is not limited to street layouts, landscaping, and building elevation drawings for initial construction, subject to the approval of the Site Plan by the City's Planning Board in compliance with the requirements of Chapter 14, Article V. The architectural treatment of the façade of the New Parking Garage may be revised during site plan review and shall meet the site plan standards of 14-526(16). Minor revisions to the Site Plan in the nature of field adjustments may be approved by the Planning Authority, without the need for amendment of this Agreement or further approval by the City Council.

5. No building permits shall be issued unless and until **MMC** receives conditional use approval pursuant to section 14-474 (Expansion of Institutional Use) and section 14-483 (Housing Replacement), site plan approval pursuant to section 14-483(e) of the City Code, approval under the Site Location of Development Act and an MDOT traffic movement permit, if required. No occupancy of the newly constructed buildings shall be permitted unless and until all site plan conditions of approval have been satisfied and the City Council has taken final action on the street discontinuances and street acceptances required for the realignment of certain streets, as shown on the Site Plan (Exhibit B).

6. **MMC** shall provide to the **CITY** a performance guarantee covering all required site improvements under section 14-525(j) of the City Code and the two replacement dwelling units provided under paragraph 6(d) of this Agreement.

7. The **PROPERTY** shall be governed by the zoning provisions, as such may be amended from time to time, applicable in the zoning districts underlying the Conditional Zone except as follows:

(a) Height Limits. The maximum structure height (measured according to the definition of "building, height of" in section 14-47) shall be:

- 95 feet for the Charles Street Addition, as depicted on the Site Plan
- 70 feet for the New Parking Garage, as depicted on the Site Plan
- 45 feet for the Central Utility Plant, as depicted on the Site Plan
- 111 feet for the L. L. Bean Wing, as already constructed.

(a) Setbacks.

- The minimum setback of the New Parking Garage shall be zero (0) feet from the right of way line of Congress Street.
- The minimum setback of the southeast corner of the Charles Street Addition shall be five (5) feet from the relocated right of way line of Ellsworth Street, as depicted on Exhibit B.
- The minimum setback of the Central Utility Plant shall be five (5) feet from Gilman Street.

(d) Replacement Housing. The replacement of the two existing residential structures at 33 Crescent Street (identified as Map 53, Block E, Lot 2) and 37 Crescent Street (identified as Map 53, Block E, Lots 1, 10 and 13) containing a total of seven dwelling units and two single-room occupancies by a portion of the New Parking Garage shall be deemed to meet the requirements of section 14-137(c), provided that **MMC** shall comply fully with the requirements of section 14-483 (Preservation and Replacement of Housing Units). Specifically, **MMC** shall comply with section 14-483 by (i) converting the building at 325-329 Brackett Street identified as Map 54, Block D, Lot 7 (the last approved use of which was office space) into two dwelling units prior to the issuance of a certificate of occupancy for the New Parking Garage and then divesting itself of ownership of the building prior to the issuance of a certificate of occupancy for the Charles Street Addition and (ii) paying Three Hundred Fifteen Thousand Five Hundred Eighty dollars ($315,580.00) into the **CITY**'s Housing Development Fund (representing five dwelling units and two single-room occupancies) upon

approval of the Site Plan by the **CITY**'s Planning Board. The deadline for divestiture may be extended by the Planning Authority if **MMC** demonstrates that reasonable good faith efforts to market the property instituted at least 6 months prior to the deadline have failed to produce a bona fide offer at or above fair market value and on commercially reasonable terms.

(e) Sidewalks. **MMC** shall comply with the **CITY**'s Brick District Policy Plan, except that, at the time of final site plan review, the Planning Board may approve the use of concrete sidewalk materials , as shown on Exhibit B 22, because of the particular needs or requirements of the hospital use.

(f) Street level uses in garage. The street level of the new parking garage may be used for any use allowed in the B-2 zone.

8. The Helicopter Landing Pad shall not be subject to the provisions of section 14-409 (Heliports), but shall be governed by the provisions of the Helistop Overlay Zone, sections 14-325 through 14-327), except as follows:

(a) Setbacks. Because it is to be located on the roof of an existing structure, the landing pad shall not be required to meet the setback requirements of Section 14-327(3) or the fencing requirements of Section 14-327(4).

(b) Flight routes. **MMC** shall identify preferred flight routes, to be approved by the **CITY**, designed to minimize noise impact of helicopter flights on surrounding residential areas, shall notify all flight providers likely to use the Helicopter Landing Pad of such preferred routes, and shall take the following measures to ensure that such preferred routes are utilized whenever weather conditions, safety considerations and the best interests of the patient being transported permit, with the expectation that this will be the usual case. **MMC** will instruct all providers which regularly use the Helicopter Landing Pad that pilots must file an exception report with the Air Medical Provider Administration of Lifeflight of Maine or its successor entity for operations modified for safety considerations or at the direct request of Approach Control at the Portland International Jetport. Logs of these exception reports will be made available to **MMC** and to the **CITY** every six months. When and if the Portland Jetport has the capacity to maintain and preserve data which specifically identifies flight routes actually taken by aircraft using the Helicopter Landing Pad, the **CITY** shall consult such data to review compliance with this paragraph, and **MMC**, upon request of the **CITY**, will be responsible for the **CITY**'s reasonable costs of translating such data into useable form, but not for the costs of the flight monitoring. Initially, such preferred flight routes shall be as shown on the map attached to this Agreement as Exhibit D. At the initiative of either the **CITY** or **MMC**, the map of preferred flight routes may be amended from time to time by agreement between **MMC** and the City Council. The City Council shall consult with the Portland International Jetport and shall convene a neighborhood meeting to obtain input from residents of any affected residential areas before agreeing to any such amendment. An agreement between the parties to change preferred flight routes under this paragraph shall include noise mitigation measures in addition to those described in paragraph 7(g) below provided the noise mitigation measures are recommended by

an independent noise consultant. In addition, after one full year of operation of the Helicopter Landing Pad (measured from the date of the first patient transport flight to use the Helicopter Landing Pad), the City Council shall review the operation of the preferred flight routes and may initiate amendments to the map of preferred flight routes, following the procedures specified above. In connection with review or amendment of flight routes under this paragraph, the **CITY** may engage the services of an independent consultant and **MMC** will reimburse the **CITY** for its reasonable costs of obtaining such consulting services provided that the **CITY**, in advance of engaging the consultant, affords **MMC** an opportunity to comment on the scope of the consultant's engagement.

(c) Fly Neighborly. In negotiating any contract or agreement with any provider of emergency medical transport by helicopter, **MMC** will require the provider to operate in compliance with the "Fly Neighborly Guide" revised February 1993, (and any subsequent revisions) prepared by the Helicopter Association International Fly Neighborly Committee and published by the Helicopter Association International. **MMC** shall establish a complaint number and a protocol for handling complaints, which shall be publicized within the neighborhood, and the complaints will be reviewed no less than quarterly by the Maine Medical Center Neighborhood Council, noted below.

(d) Helipad operating guidelines. Helicopter landings on the Helipad are approved for emergency patient care only. Any use of the Helicopter Landing Pad for other than emergency patient care transport shall be deemed a violation of this Agreement and shall result in the termination of the Helicopter Overlay. The following standard practices will be incorporated as general policy for operations in and out of the Maine Medical Center Helipad and shall be communicated by **MMC** to providers. At all times, the Pilot in Command (PIC) will determine safety of operations as a first consideration. Under normal operating circumstances, take-offs, landings and standing-by on the Helicopter Landing Pad shall be conducted according to the Operating Guidelines, attached hereto as Exhibit E, subject at all times to the judgment of the helicopter pilot concerning safety and to the judgment of the emergency medical personnel concerning the health of the patient.

(e) Equipment. In generating any specifications in connection with the negotiation of any contract or agreement with any provider of emergency medical transport by helicopter, **MMC** will specify that helicopters utilizing the Helicopter Landing Pad (with the exception of U.S. military or government aircraft) are relatively new turbine powered aircraft meeting requirements under ICAO Annex 16 Chapter 8 for in-flight noise levels and complying with FAA airworthiness standards, 14 CFR part 36.11 and 14 CFR 21 Sub-part D, or any amended or successor requirements or standards.

(f) Design and construction. The Helicopter Landing Pad shall be constructed as shown on Exhibit A.

(g) Mitigation. **MMC** will pay for the installation costs associated with the full installation of soundproofing improvements contained within Exhibit D, except in lieu of central air conditioning MMC will also pay for the installation of ventilation improvements to one or more rooms within each such dwelling unit as reasonable and appropriate as determined by the

CITY. The **CITY** shall contract for such work and **MMC** shall be responsible for the costs associated therewith, plus a 10% administrative fee to be paid to the **CITY**. Before entering into any contract for such work, the CITY shall notify MMC and give MMC the opportunity to comment on the scope of the proposed work and the estimated cost thereof. The properties to be included under this provision are as follows: 879 Congress Street (Map53, Block I, Lot 16), 921 Congress Street (Map 65, Block D, Lot 17), 925 Congress Street (Map 65, Block D, Lot 16) and 929 Congress Street (Map 65, Block, D, Lot 14). Such funds shall only be expended if the present owners of such buildings request such improvements no earlier than six months and no later than eighteen months after commencement of the operation of the Helicopter Landing Pad. For a period of five years from the date of this Agreement, any new owner of the aforementioned properties may request such improvements no later than eighteen months after purchase of said property(s).

(h) Accreditation. The principal provider of air medical transport to MMC shall be accredited by the Committee on Accreditation of Medical Transport Systems or its successor agency. Providers using the helicopter landing pad shall be accredited by the Committee on Accreditation of Medical Transport Systems or its successor agency, unless special circumstances warrant a non accredited provider such as the Air National Guard, the U.S. Coast Guard or other users.

9. Signage shall comply with the requirements of sections 14-336 through 14-372.5 of the City Code, except as otherwise approved by the Planning Board under Chapter 14, Article V.

10. For the purpose of keeping surrounding residential areas apprised of its future development plans, and to address any neighborhood issues related to the operations of the **MMC** campus (including but not limited to complaints or operating issues with respect to the helipad and future planning and development programs associated with **MMC**), **MMC** shall, no less than quarterly, and with two weeks written notice, invite representatives of the Maine Medical Center Neighborhood Council to meet with designated representatives of **MMC**. For purposes of this requirement, the Maine Medical Center Neighborhood Council shall consist of two representatives of the Parkside Neighborhood Association, , two representatives of the Western Prom Neighborhood Association, and two representatives of the Gilman/Valley Streets neighborhood. The neighborhood organizations shall designate the persons who shall serve on the Maine Medical Center Neighborhood Council. In the event there is no formal neighborhood organization, the City Council District Councilor shall designate the persons to serve on the Maine Medical Center Neighborhood Council.

11. **MMC**, prior to occupancy of the Charles Street Addition, shall relocate the sewer serving 31 Crescent Street, as depicted on the Site Plan (Exhibit B). In addition, **MMC** shall provide two off-street parking spaces for use by the tenants of 31 Crescent Street for so long as 31 Crescent Street serves as a residential structure.

12. **MMC** agrees that it will make the parking garage contemplated within this Agreement available for use by the public for snow ban purposes in a fashion similar to that

required in its Congress Street/Forest Street parking garage. In addition, **MMC** shall require all of its vendors, contractors and subcontractors to utilize a parking garage or other approved parking area/facility for vehicles and truck parking during construction.

13. **MMC** agrees to divest itself of ownership of the following existing structures owned by **MMC** according to the following schedule:

Prior to the issuance of a certificate of occupancy for the Charles Street Addition:

15 Crescent Street (Map 53, Block F, Lot 6)
25 Crescent Street (Map 53, Block E, Lot 5)
25 Ellsworth Street (Map 53, Block H, Lot 2)
32 Ellsworth Street (Map 54, Block C, Lot 5)
20 Hill Street (Map 54, Block C, Lot 1)

No later than January 1, 2010 or the issuance of a certificate of occupancy for any of the future expansions described in Section 6(b) above, whichever is earlier:

19 Bramhall Street (Map 63, Block A, Lot 4)
23 Bramhall Street (Map 63, Block A, Lot 3)
25 Bramhall Street (Map 63, Block A, Lot 2)
31 Bramhall Street (Map 63, Block A, Lot 1)

The deadline for divestiture of any of such property may be extended by the Planning Authority if **MMC** demonstrates that reasonable good faith efforts to market the property instituted at least 6 months prior to the deadline have failed to produce a bona fide offer at or above fair market value and on commercially reasonable terms.

14 **MMC** agrees that it will remove the existing building located at 261-269 Valley Street (formerly the "Eagles Club") within 12 months after the effective date of this Agreement and that the site of the removed building will be loamed and seeded unless and until otherwise developed pursuant to an approved site plan.

15 **MMC** shall provide landscaping of the area surrounding its Vaughn Street parking lot as shown on the landscaping plan attached hereto as Exhibit G and shall construct, maintain and continue to own the "pocket park" located at Ellsworth and Charles Streets as shown on the Site Plan (Exhibit B). The improvements to the Vaughn Street parking lot shall be completed within 12 months of the effective date of this Agreement.

16. **MMC** agrees to allow public pedestrian access between its campus and Congress Street through a new enclosed stairway to be constructed adjacent to the New Parking Garage, as depicted on Exhibit B.

17.. **MMC** shall contribute $800,000 to the **CITY** to use for public improvements in the general vicinity of Maine Medical Center.

18.. MMC agrees that it will encourage its employees and visitors to use alternatives to single-occupant automobiles when traveling to and from the PROPERTY. In its application under the Site Plan Ordinance, MMC agrees to include among its written statements an Alternative Transportation Plan. The Alternative Transportation Plan will propose strategies to reduce single-occupant automobile trips to the PROPERTY. Such strategies shall include, but not be limited to, subsidies and other incentives for employees and visitors to use local and regional mass transportation, share rides (carpools and vanpools), ride bicycles and walk. The Planning Board will include the Alternative Transportation Plan in its consideration of sections 14-526(a)(1) and (2) of the City Code. In addition, an analysis of effectiveness and functioning of the Alternative Transportation Plan shall be provided to the City Council's Transportation Committee on an annual basis.

20.. The above restrictions, provisions and conditions are an essential part of the rezoning, shall run with the **PROPERTY**, shall bind and benefit **MMC**, its successors and assigns, and any party in possession or occupancy of the **PROPERTY** or any part thereof, and shall inure to the benefit of and be enforceable by the **CITY,** by and through its duly authorized representatives. Within 30 days of approval of this Agreement by the City Council, **MMC** shall record a copy of this Agreement in the Cumberland County Registry of Deeds, along with a reference to the book and page of the deeds to the property underlying said **PROPERTY**. Unless otherwise stated within this Agreement, this Agreement governs only the **PROPERTY** expressly covered by this Agreement and applies only within the boundaries of the rezoned area as shown on the map. Nothing in this Agreement shall have any effect on or be construed as having any bearing on the use or development of any other properties owned by **MMC** or its affiliates, all of which shall continue to be governed by the applicable provisions of the Portland Land Use Code, without regard to this Agreement.

21.. If any restriction, provision, condition, or portion thereof, set forth herein is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct and independent provision and such determination and shall not affect the validity of the remaining portions hereof.

22.. Except as expressly modified herein, the development, use, and occupancy of the **PROPERTY** shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

23.. This conditional rezoning agreement shall be enforced pursuant to the land use enforcement provisions of state law (including 30-A MRSA 4452) and **CITY** Ordinance. No alleged violation of this rezoning Agreement may be prosecuted, however, until the **CITY** has delivered written notice of the alleged violation(s) to the owner or operator of the **PROPERTY** and given the owner or operator an opportunity to cure the violation(s) within thirty (30) days of receipt of the notice. Following any determination of a zoning violation by the Court, and in addition to any penalties authorized by law and imposed by the Court, either the Portland Planning Board on its own initiative, or at the request of the Planning Authority, may make a recommendation to the City Council that the Conditional Rezoning be modified or the **PROPERTY** rezoned.

24.. In the case of any issue related to the **PROPERTY** which is specifically addressed by this Agreement, neither **MMC** nor their successors may seek relief which might otherwise be available to them from Portland's Board of Appeals by means of a variance, practical difficulty variance, interpretation appeal, miscellaneous appeal or any other relief which the Board would have jurisdiction to grant, if the effect of such relief would be to alter the terms of this Agreement. In cases that fall outside of the above parameters (i.e., alleged violations of any provisions of Portland's Land Use Code, including, but not limited to, the Site Plan Ordinance, which were neither modified nor superceded by this Agreement), the enforcement provisions of the Land Use Code, including, but not limited to, the right to appeal orders of the Planning Authority, Building Authority and Zoning Administrator shall apply. Nothing herein, however, shall bar the issuance of stop work orders.

WITNESS **MAINE MEDICAL CENTER**

_____ _____

By:
Its:

STATE OF MAINE
CUMBERLAND, ss. Date: _____, 2005

Personally appeared before me the above-named _____, in his capacity as _____ of Maine Medical Center, and acknowledged the foregoing instrument to be his free act and deed in his said capacities and the free act and deed of Maine Medical Center.

Before me,

_____
Notary Public/Attorney at Law

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ORDER 021

ORDER AUTHORIZING AMENDMENT TO CITY CODE SECTION 14-49 (ZONING MAP AMENDMENT) AND CONTRACT FOR REZONING FOR OFFICE BUILDING AND PARKING GARAGE AT 883-903 CONGRESS STREET - SPONSORED BY THE PLANNING BOARD, CYRUS HAGGE, CHAIR.

IN THE CITY COUNCIL

JUNE 16, 1997

Attest: Nadeen M. Daniels

Nadeen M. Daniels, City Clerk

Yeas **Nays**

June 16, 1997: This Order received a first reading.

July 7, 1997: Motion made by Councilor Leeman to accept this Order; seconded by Councilor Rickett. Roll call vote, passed 6-2 (Councilors Geraghty and Kane).

C18

Att. 2

Order 21
Tab 17 6-16-97

City of Portland, Maine

IN THE CITY COUNCIL

ORDER AUTHORIZING AMENDMENT TO CITY CODE §14-49 (ZONING MAP AMENDMENT) AND CONTRACT FOR REZONING FOR OFFICE BUILDING AND PARKING GARAGE AT 883-903 CONGRESS STREET

ORDERED, that the Zoning Map of the City of Portland, dated March 1958, as amended, on file in the Department of Planning & Urban Development and incorporated by reference into the Zoning Ordinance by §14-49 of the Portland City Code, is hereby amended as shown on Attachment 1 of Attachment A hereto to allow an office building and parking garage at 883-903 Congress Street;

BE IT FURTHER ORDERED, that the amendment of the City's Zoning Map is conditioned upon execution of the contract for rezoning attached to this Order as Attachment A;

BE IT FURTHER ORDERED, that the City Manager is hereby authorized to execute the contract attached hereto as Attachment A.

883CONG.REZ
06.11.97

SITE DEVELOPMENT

DATE	BUILDING SQ. FOOTAGE	IMPERVIOUS SURFACE RATIO
Workshop I	26,760 SF	70%
Workshop II	22,800 SF (85%)	60.8%
Workshop III	19,800 SF (75%)	58.7%
Workshop IV	16,800 SF (63%)	58.3%
I~L Allowable		65%

DRAINAGE

The reduced scope has allowed for site runoff in a more environmentally friendly manner. Roof drainage will be guttered and run underground to city storm sewer located beneath Rand Road. Parking Lot sheet run off will be contained by level spreader landscape depressions which provide a natural filtration system for any minor contaminants deposited in parking and circulation areas. Any overflows will be directed to existing drainage courses along Rand Road and the railroad tracks.

SITE LIGHTING

We will employ cut off wall packs exclusively, no pole mounted lighting will be used. Special wall packs will be provided at the rear of Building A to minimize light spillage onto adjacent residential neighbors.

LANDSCAPING

This revised proposal will Allow many of the existing apple, maple, and willow trees to remain. Mr. Holmes already holds 50 certificates for 6' White Pines which he intends to stagger along the residential periphery to create a dense screen. When these trees reach approximately 12' the center growth will be topped to ensure a dense screen. Further, residential neighbors along the North and East sides will have 245 LF of 6' high Cedar stockade fence to create an immediate screen. Keep in mind the eve height of these buildings at 14'-0' and you can imaging a project which virtually disappears from the residential point of view.

CIRCULATION

The reduced space has allowed semi tractor trailer access to the front of each proposed unit. The 25' entrance drive has been repositioned to allow for a 50' turning radius from Rand Road. The new layout has no overlap and therefore clear circulation for vehicles. Light trucks, and plowing. We have located screened dumpsters for ease of access.

SETBACKS

We have repositioned the building eliminating front yard encroachments. Further with the cooperation of The Portland Water District we have eliminated the rear yard encroachment by the Church. The side yard and rear yard setbacks closest to the residential abutters have been respected with the

exception of a reduction at the tail end of Webb Street and a small area at the Rail Road Tracks.

CENTRAL SITE DEVELOPMENT

Mr. Holmes is convinced that the Rand Road interchange with the Maine Turnpike forming Exit 8A will become a reality in the next 5-10 years due to increased activity at Exit 8. Currently at 4 p.m. traffic is backed up to Home Depot. A zone change to a restricted I-L contract zone will create new jobs, add to the tax base and act as a buffer for the existing residential neighborhood.

The careful placement of staggered white pines in front of the 6' cedar stockade fence and the existing apple, maple, and willow trees will soften the impact of this project on the residential neighbors. Further the project will buffer the residential neighbors from semi truck brake and pounding noises when crossing the RR tracks.

A development of this nature will maintain existing property values from the abutters while buffering then from the industrial park. The revised layout faces onto Rand Road with no Webb street access now or in the future. All in all this project is the best possible solution for this sensitive transitional site..

Sincerely,
PORT CITY ARCHITECTURE, PA

Andrew C. Hyland, R.A.
Principal

AH/js

encl. Site Plan J-1

CITY OF PORTLAND, MAINE
CITY COUNCIL AGENDA REQUEST FORM

TO: Nadeen Daniels, City Clerk/Assistant City Manager
Elizabeth Boynton, Associate Corporation Counsel

FROM: Joseph E. Gray, Jr., Director of Planning and Urban Development

DATE: May 30, 1997

SUBJECT: City Council Agenda Request

1) Council Meeting at which action is requested: June 16th (first reading); July 7th (final action)

2) Can action be taken at a later date? _X_ YES __ NO

I. **SUMMARY OF ISSUE**

The Planning Board is forwarding a recommendation to the City Council to approve a contract zone for Maine Medical Center to accommodate a 50,000 sq. ft. office building and 430 space parking garage in the vicinity of 883-903 Congress Street.

II. **REASON FOR SUBMISSION** (What issue/problem will this address?)

The Maine Medical Center development proposal does not meet all of the R-6 zoning requirements for the project site.

III. **INTENDED RESULT** (How does it resolve the issue/problem?)

The intended result of this process is to enact a contract zone recommended by the Planning Board which will address the zoning issues of the Maine Medical Center proposal.

IV. **FINANCIAL IMPACT**

Condition #12 of the contract addresses property tax concerns by requiring a payment in lieu of taxes if portions of the building become tax exempt.

V. **STAFF ANALYSIS & RECOMMENDATION**

See attached Planning Board report.

Attachment A

MMCCONGRESSREZ.CONPB.FIN
06.11.97

AGREEMENT BETWEEN

CITY OF PORTLAND

AND

MAINE MEDICAL CENTER

AGREEMENT made this day of , 1997 by and between the **CITY OF PORTLAND,** a body corporate and politic, located in Cumberland County and State of Maine (hereinafter the **"CITY"**) and **MAINE MEDICAL CENTER**, a Maine Corporation (hereinafter **"MAINE MEDICAL"**).

W I T N E S S E T H:

WHEREAS, MAINE MEDICAL did request a rezoning of property located at 883-903 Congress Street, in Portland, in order to permit the establishment and operation of professional office space, clinics and parking; and

WHEREAS, the Planning Board of the City of Portland, pursuant to 30-A M.R.S.A. §4352(8), and after notice and hearing and due deliberation thereon, recommended the rezoning of the property as aforesaid, subject, however, to certain conditions; and

WHEREAS, the **CITY** by and through its City Council has determined that said rezoning would be pursuant to and consistent with the **CITY'S** comprehensive land use plan and consistent with the existing and permitted uses within the original zone; and

WHEREAS, the **CITY** has determined that because of the unusual nature of the proposed development it is necessary or appropriate

to impose by agreement the following conditions or restrictions in order to insure that the rezoning is consistent with the **CITY's** comprehensive land use plan; and

WHEREAS, the **CITY** authorized the execution of this Agreement on , 1997;

NOW, THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The **CITY** shall amend the Zoning Map of the City of Portland, dated March 1958, as amended and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by §14-49 of the Portland City Code, by adopting the map change amendment shown on Attachment 1.

2. The property shall be developed substantially in accordance with the conceptual site plan and elevations shown on Attachment 2; provided, however, that such plan and elevations shall be subject to full site plan review by the Planning Board and approval of this Agreement shall not imply any approval of any element that must be reviewed pursuant to §14-526 of the Portland City Code.

3. **MAINE MEDICAL** shall be authorized to establish and maintain general, business and professional offices, as defined in section 14-47 of the Portland City Code, for use by **MAINE MEDICAL** and related medical professionals, clinics, as defined in the same section of the Code, and parking on the site.

4. Setbacks shall be as delineated on Attachment 2, but shall in no event exceed ten (10) feet for the front yard and shall not be less than seven (7) feet for the rear yard. The westerly side yard shall be at least ten (10) feet, except the ventilation shaft and the exterior stair tower. The easterly side yard shall be at least fifteen (15) feet, except the ventilation shaft and the exterior stair tower.

5. The maximum height of any structure on the site shall not exceed seventy-two (72) feet.

6. The lease for the proposed skywalk shall be approved by the Portland City Council and the Maine Department of Transportation.

7. **MAINE MEDICAL** shall replace all curb and sidewalks abutting the site on Congress Street, Forest Street, and Boynton Street, as required by the Public Works Department.

8. Signage on the site shall comply with the requirements of the B-2 zone, as set forth in Division 22 of Chapter 14 of the Portland City Code.

9. Development on the site shall comply with the requirements of sections 14-186 and 14-187 of the Portland City Code.

10. **MAINE MEDICAL** shall submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project.

11. **MAINE MEDICAL** shall provide a landscaped/open space area between the parking garage and Boynton Street. This area shall be reviewed as part of the site plan approval process.

12. In the event that any portion of the premises becomes subject to taxation under the decision in City of Lewiston v. Marcotte Congregate Housing, Inc., 673 A.2d 209 (Me. 1996), or any successor legislation, then **MAINE MEDICAL** or any successors in interest shall be liable for a payment in lieu of taxes if such portion later becomes exempt from taxation. The payment in lieu of taxes shall be in the amount of the taxes that would be assessed in the absence of such exemption.

The above stated restrictions, provisions and conditions are an essential part of the rezoning, shall run with the subject premises, shall bind **MAINE MEDICAL,** its successors and assigns, as permitted by this Agreement, of said property or any part thereof or interest therein, and any party in possession or occupancy of said property or any part thereof, and shall inure to the benefit

of and be enforceable by the **CITY**, by and through its duly authorized representatives.

If any of the restrictions, provisions, conditions, or portions thereof set forth herein is for any reason held invalid or unconstitutional by any Court of competent jurisdiction, such portion shall be deemed as a separate, distinct and independent provision and such determination shall not affect the validity of the remaining portions hereof.

Except as expressly modified herein, the use and occupancy of the subject premises shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

In the event that **MAINE MEDICAL** or any successor fail to continue to utilize the property in accordance with this Agreement, or in the event of a breach of any condition(s) set forth in this Agreement, the Planning Board shall have the authority, after hearing, to resolve the issue resulting in the breach or the failure to operate. The resolution may include a recommendation to the City Council that the site be rezoned to R-6 or any successor zone and that this Agreement be terminated, requiring a cessation of the general, business and professional offices, clinics and parking uses permitted under this terms of this Agreement.

MMCCONGRESSREZ.CONPB.FIN
06.11.97

WITNESS:

_____

CITY OF PORTLAND

By_____
Robert B. Ganley
Its City Manager

WITNESS:

_____

MAINE MEDICAL CENTER

By:_____

Its:

STATE OF MAINE
CUMBERLAND, ss. , 1997

Personally appeared the above-named Robert B. Ganley, in his capacity as City Manager, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the City of Portland.

Before me,

_____
Notary Public/Attorney at Law

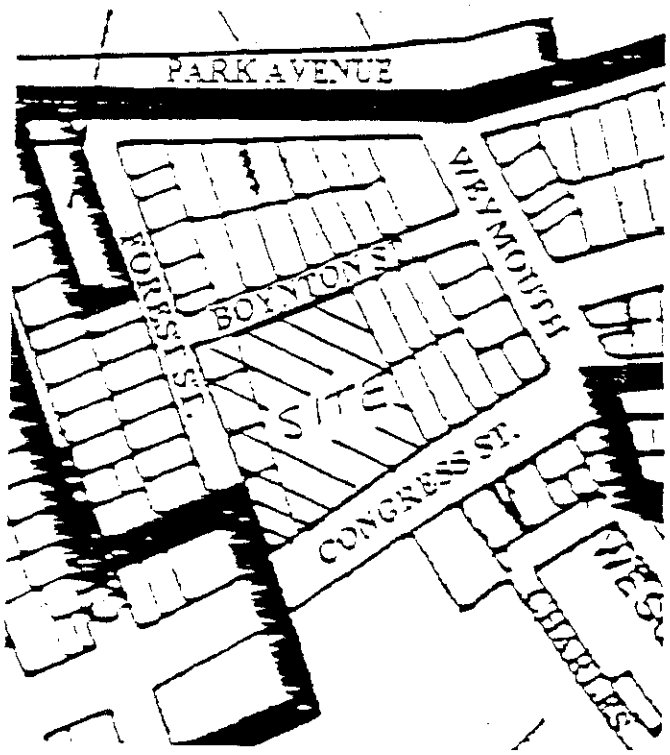
STATE OF MAINE
CUMBERLAND, ss. , 1997

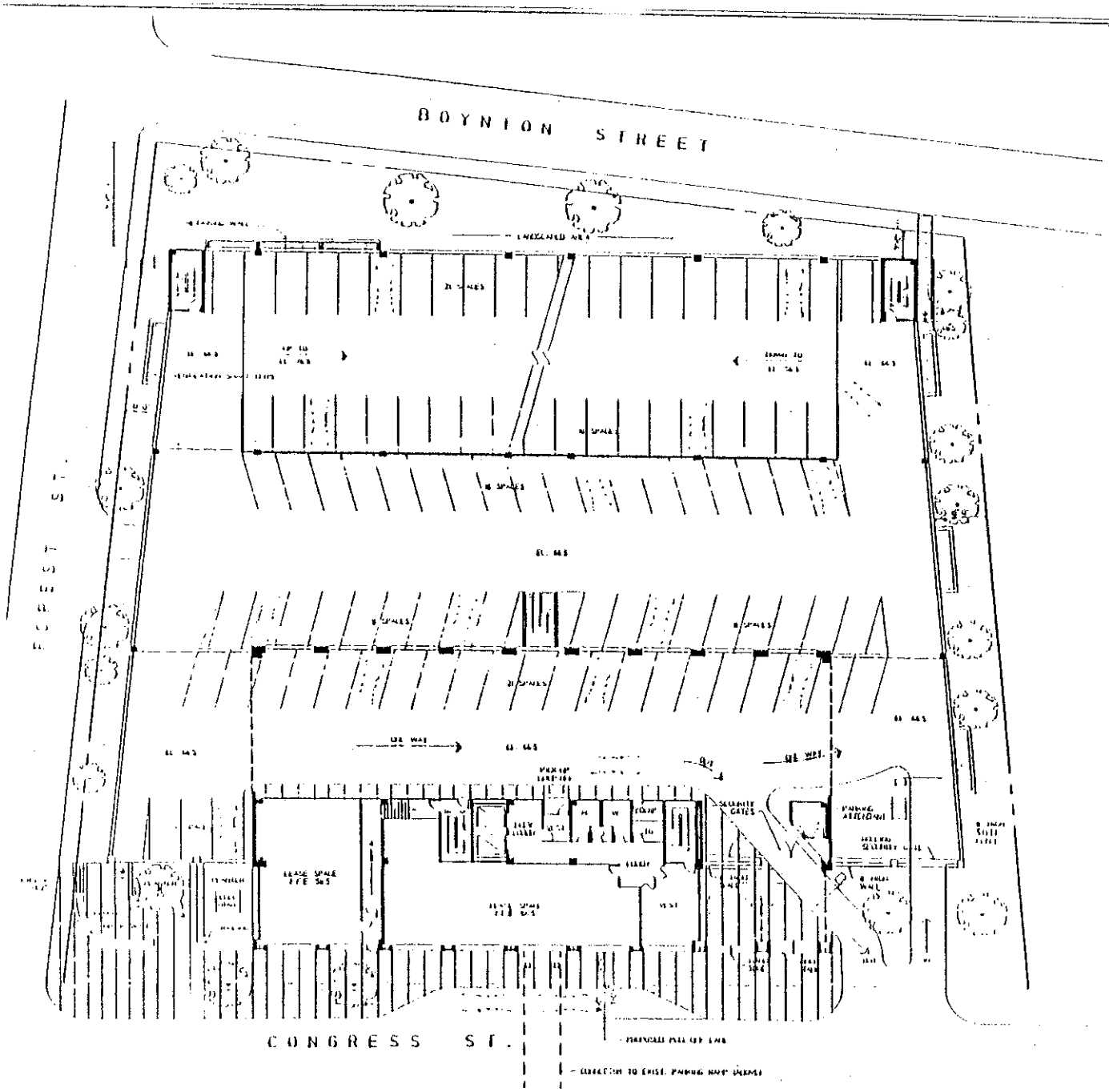
Personally appeared the above-named , in his/her capacity as of Maine Medical Center and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of Maine Medical Center.

Before me,

_____
Notary Public/Attorney at Law

SITE OF PROPOSED CONTRACT ZONE





MEDPLEX

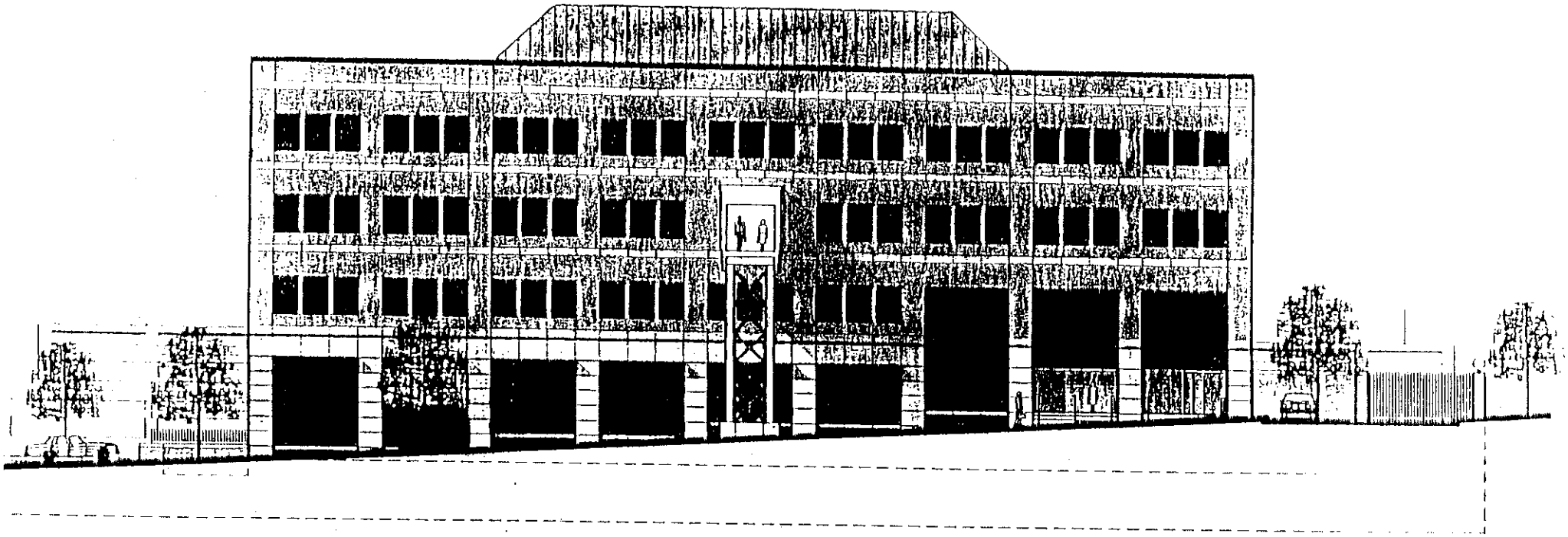
PROPOSED MEDICAL OFFICE BUILDING & PARKING GARAGE FOR MAINE MEDICAL CENTER

DEERING MAINE

DATE

SHEET NO.

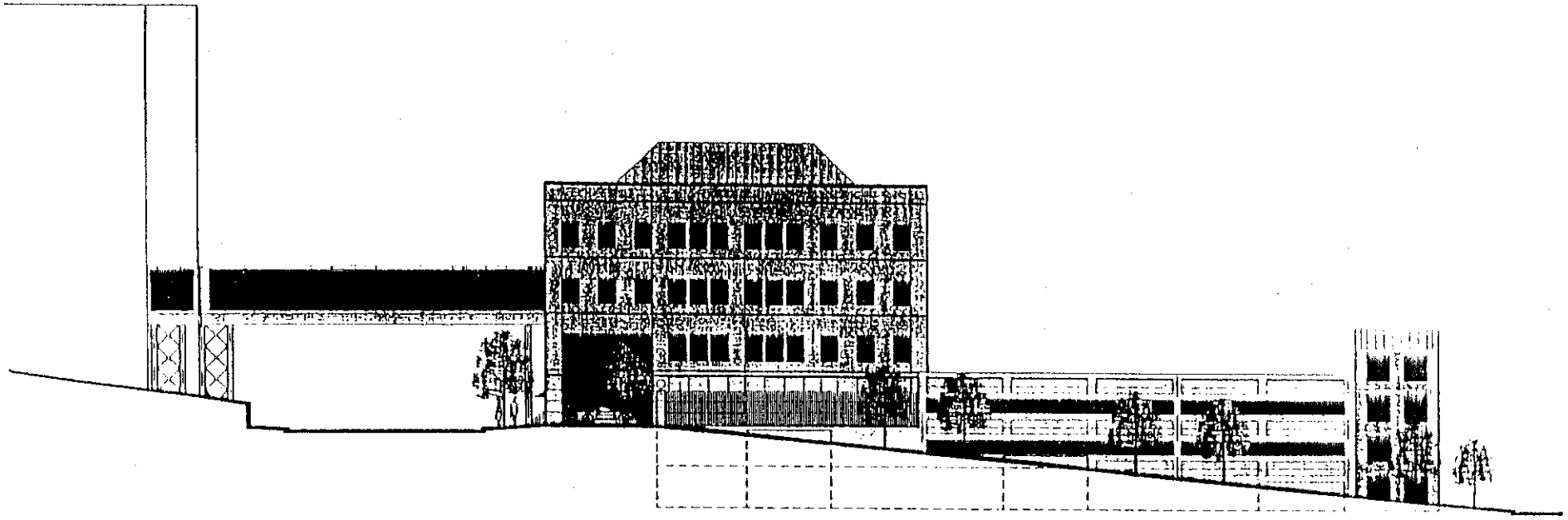
EXHIBIT 2-A



SOUTH ELEVATION

0 8 16 32 48

1/16" = 1' 0"



EAST ELEVATION

PLANNING REPORT #18-97

MAINE MEDICAL CENTER CONTRACT ZONE

VICINITY 883-903 CONGRESS STREET

Submitted to:

Portland City Council
Portland, Maine

June 16, 1997

I. INTRODUCTION

The Planning Board is forwarding a recommendation to the City Council to approve a proposed contract zone for Maine Medical Center (MMC) in the vicinity of 883-903 Congress Street to accommodate an office building and parking garage. The zone change is across the street from the MMC parking garage on Congress Street.

II. FINDINGS

Existing Zone:	R-6 Residential
Land Area:	60,665 sq. ft.
Existing Use:	Parking lot, vacant
Proposed Uses:	General, business and professional offices, clinics and parking
Proposed Office Building:	50,000 sq. ft. (floor area); 15,051 sq. ft. (footprint)
Impervious Surface:	80% (total building coverage 45,768 sq. ft.; paved surfaces 2,862 sq. ft.)
Proposed Parking Spaces:	430 spaces
Height:	Varies, high point 72 feet (Forest Street side) low point 32 feet (Boynton Street side)
Nearby Uses:	The zone change site is adjacent to an area of commercial and residential uses. A variety of commercial uses are located along both sides of Congress Street in the vicinity of the site. The project site is on the easterly side of Forest Street where the R-6 begins. Residential uses exist adjacent to the site along Boynton Street and Congress Street. The existing MMC parking garage is across the street (R-6). To the west along Congress Street is a B-2 zone (starting with the Sportsman's Grill) that extends to Valley Street and St. John Street from Forest Street.

III. PROPOSED DEVELOPMENT

MMC is proposing this zone change in order to accommodate an office building and parking garage. As proposed, the development would not allow the building setbacks, building height and general offices being proposed under the R-6 zone. The office space will be occupied by physicians practicing or employed at MMC and private medical offices. Certain diagnostic services may also be provided such as radiology and laboratory.

The office building is four stories high on Congress with two additional levels below grade. The slope of the property masks the apparent size and height of the parking garage by accommodating six levels of parking. At the low point of Boynton Street, only four levels of the garage will be visible. A depiction of the exterior facade of the building is starting on Attachment B-3.

A skywalk is proposed above Congress Street connecting the office building to the MMC parking garage and the main campus. The skywalk is located on the third floor of the building, a height of 26 feet above Congress Street. The total length of the skywalk is about 200 feet. The skywalk will require separate approval by the City Council and Maine Department of Transportation for lease of air rights above the street.

Access to the parking garage will be from Congress Street and Forest Avenue. A traffic impact study and a parking demand study was submitted to the Planning Board. Traffic and parking issues will be reviewed in more detail as part of the site plan review process. The traffic study concludes that the "level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system." The report does recommend restriping some street lanes to improve traffic circulation movement in the vicinity of the site. A traffic signal is also recommended at Park Avenue and Forest Street.

The parking demand study reviewed the new building and the overall parking demand of MMC. The study forecasts a parking demand of 2,140 spaces upon completion of the office building and full operation of the Scarborough and John Roberts Road facilities. A parking supply of 2,373 spaces is listed which is 233 spaces above the forecasted demand. Condition #10 of the contract requires that the applicant submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project. Parking related information and related staff comments are shown starting on Attachment E.

IV. PROPOSED ZONE CHANGE

The contract rezoning would allow the construction of a building for uses described in the contract below. The development would include a 50,000 sq. ft. building for offices and clinic space. A 430 space parking garage would also be constructed. The site is currently zoned R-6 The conditions of the contract zone are summarized below. The full text of the contract zone and map are shown on Attachment C.

1. The City shall amend the zoning map of the City of Portland, by adopting the map change amendment below.
2. The property shall be developed substantially in accordance with the conceptual site plan and elevations but is subject to Planning Board site plan approval.
3. Maine Medical Center is authorized to establish general, business and professional offices, clinics and parking on the site.
4. Building setbacks . . . Front yard shall not exceed 10 feet. [This setback encourages a building close to the street but accommodates a drop off area along Congress Street.] Westerly side yard and easterly side yard shall be a minimum of 10 feet and 15 feet respectively, except the ventilation shaft and exterior stair tower. Rear yard setback shall be a minimum 7 feet. [The rear setback varies from 7 feet to 30 feet.]
5. Building height shall not exceed 72 feet.
6. Portland City Council and Maine Department of Transportation shall approve the lease for the skywalk.
7. Applicant shall replace all curb and sidewalks abutting the site.
8. Signage shall comply with the requirements of the B-2 zone.
9. Development shall comply with sections 14-186 and 14-187 of the City Code.

[Development standards and external effects standards of the B-2 zone.]

10. Applicant shall submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project.
11. A landscaped/open space area shall be provided between the parking garage and Boynton Street and will be reviewed as part of the site plan for the project. . . This condition was added as a mitigation measure for the surrounding residential properties.
12. Addresses property tax concerns by requiring a payment in lieu of taxes if portions of the building become tax exempt.

V. LAND USE POLICY CONSIDERATIONS

The zone change site is adjacent to an area of commercial and residential uses. A variety of commercial uses exist along both sides of Congress Street from Forest Street to St. John Street. This is part of a larger B-2 corridor zone that extends along the commercial areas of St. John Street and Valley Street. A second B-2 zone east of the site (three buildings away) extends from Weymouth Street along Congress Street (both sides) to the B-3 downtown zone.

The property site is on the easterly side of Forest Street where the R-6 begins, across from the Sportsman's Grill. Residential uses exist adjacent to the site along Boynton Street and Congress Street (easterly).

MMC's more recent development proposals have creatively used their campus to accommodate facility expansion needs by either rehabilitating existing buildings or adding upper floors to buildings (i.e. parking garage, Bean Building). In this way, MMC has avoided expansion into residential areas. This proposal represents a logical progression of that policy. The amount of space on campus to accommodate this current proposal with its associated parking would seem very limited. The current proposal utilizes an existing vacant parcel in an area of Congress Street having a commercial character while integrating it with the main campus.

Most of the site has been vacant or has been used as a parking lot by MMC. As indicated in Attachment A-1, MMC removed three residential structures from the site (9, 15 and 19 Forest Street) with a total of 13 units in 1993. MMC states that the buildings "were old, difficult to maintain and approaching a substandard condition." If this project were judged under R-6 zoning criteria, the development would need to meet the institutional standard which require that "the proposed use will not cause significant displacement or conversion of residential uses existing on June 1, 1983."

The Portland Neighborhood Economic Development Study which was adopted as part of the comprehensive plan (1988) reviewed the St. John Street/Congress Street commercial area. Policy #3 stated "permit the conversion of the existing deteriorated residential area in the immediate area of this commercial center to office and other business use." Although the study recommended that the B-2 zone stop at Forest Street along Congress Street; it does raise the issue of underutilized properties in this area and the opportunity for reuse.

To summarize, the vacant site is located adjacent to a B-2 zone that extends along the St. John Street and Valley Street business corridor. It is across the street from the 10 story MMC parking garage. The project is integrated with the MMC campus by the proposed skywalk. MMC has limited space

on their existing campus to accommodate the proposed development. Congress Street in the vicinity of the site has benefited from the redevelopment of several properties into medical offices.

VI. PLANNING PROCESS

The Planning Board held two workshops and one public hearing on this proposal. On May 13, 1997, the Board held a public hearing and voted 4-2 (Caron, Carroll opposed, Cole absent) that the proposed contract zone was consistent with the policies of the comprehensive plan and therefore recommended to the City Council approval of the zone change.

The Planning Board believes that the zone change is appropriate based on the land use policy discussion of section V of this report. The zone change recognizes land use changes in this area of Congress Street and establishes through the contract reasonable limits on the development. Condition #10 requires that a parking management plan be submitted for all of its parking facilities for Planning Board review and approval as part of the site plan review of this project. As a mitigation effort towards the neighborhood, a landscaped open space area will be provided between the parking garage and Boynton Street. During site plan review, specific issues such as traffic circulation, the parking management plan, and site design issues can be addressed.

The Board had considerable discussion on an amendment proposed by Mr. Carroll that would have required MMC to fund $500,000 in housing improvements as a condition in the contract. This condition was proposed as a measure to address the previous loss of housing on this site in order to address the City's policy toward institutional expansion and encroachment in residential areas. The amendment failed by a 2-4 (Caron and Carroll in favor; Cole absent.) A minority opinion on the zone change has been submitted by Mr. Carroll and Mr. Caron (see Attachment F.)

Public comment on the proposed was mixed. See Attachment G for written comments.

Notices were sent to all property owners for all workshops and public hearings.

Attachments:

A. Proposed Contract Zone and Map Change
B. Site Plans/Building Elevations
C. Background Information
D. Parking Report
E. Staff Comments on Parking
F. Planning Board Minority Opinion on Zone Change (Carroll and Caron)
G. Written Public Comment

ATTACHMENT 7-1

MMCCONGRESSREZ.CONPB.FIN
06.11.97

AGREEMENT BETWEEN

CITY OF PORTLAND

AND

MAINE MEDICAL CENTER

AGREEMENT made this day of , 1997 by and between the **CITY OF PORTLAND,** a body corporate and politic, located in Cumberland County and State of Maine (hereinafter the **"CITY"**) and **MAINE MEDICAL CENTER**, a Maine Corporation (hereinafter **"MAINE MEDICAL"**).

W I T N E S S E T H:

WHEREAS, MAINE MEDICAL did request a rezoning of property located at 883-903 Congress Street, in Portland, in order to permit the establishment and operation of professional office space, clinics and parking; and

WHEREAS, the Planning Board of the City of Portland, pursuant to 30-A M.R.S.A. §4352(8), and after notice and hearing and due deliberation thereon, recommended the rezoning of the property as aforesaid, subject, however, to certain conditions; and

WHEREAS, the **CITY** by and through its City Council has determined that said rezoning would be pursuant to and consistent with the **CITY'S** comprehensive land use plan and consistent with the existing and permitted uses within the original zone; and

WHEREAS, the **CITY** has determined that because of the unusual nature of the proposed development it is necessary or appropriate

to impose by agreement the following conditions or restrictions in order to insure that the rezoning is consistent with the **CITY's** comprehensive land use plan; and

WHEREAS, the **CITY** authorized the execution of this Agreement on , 1997;

NOW, THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The **CITY** shall amend the Zoning Map of the City of Portland, dated March 1958, as amended and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by §14-49 of the Portland City Code, by adopting the map change amendment shown on Attachment 1.

2. The property shall be developed substantially in accordance with the conceptual site plan and elevations shown on Attachment 2; provided, however, that such plan and elevations shall be subject to full site plan review by the Planning Board and approval of this Agreement shall not imply any approval of any element that must be reviewed pursuant to §14-526 of the Portland City Code.

3. **MAINE MEDICAL** shall be authorized to establish and maintain general, business and professional offices, as defined in section 14-47 of the Portland City Code, for use by **MAINE MEDICAL** and related medical professionals, clinics, as defined in the same section of the Code, and parking on the site.

4. Setbacks shall be as delineated on Attachment 2, but shall in no event exceed ten (10) feet for the front yard and shall not be less than seven (7) feet for the rear yard. The westerly side yard shall be at least ten (10) feet, except the ventilation shaft and the exterior stair tower. The easterly side yard shall be at least fifteen (15) feet, except the ventilation shaft and the exterior stair tower.

5. The maximum height of any structure on the site shall not exceed seventy-two (72) feet.

6. The lease for the proposed skywalk shall be approved by the Portland City Council and the Maine Department of Transportation.

7. **MAINE MEDICAL** shall replace all curb and sidewalks abutting the site on Congress Street, Forest Street, and Boynton Street, as required by the Public Works Department.

8. Signage on the site shall comply with the requirements of the B-2 zone, as set forth in Division 22 of Chapter 14 of the Portland City Code.

9. Development on the site shall comply with the requirements of sections 14-186 and 14-187 of the Portland City Code.

10. **MAINE MEDICAL** shall submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project.

11. **MAINE MEDICAL** shall provide a landscaped/open space area between the parking garage and Boynton Street. This area shall be reviewed as part of the site plan approval process.

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of and be enforceable by the CITY, by and through its duly authorized representatives.

If any of the restrictions, provisions, conditions, or portions thereof set forth herein is for any reason held invalid or unconstitutional by any Court of competent jurisdiction, such portion shall be deemed as a separate, distinct and independent provision and such determination shall not affect the validity of the remaining portions hereof.

Except as expressly modified herein, the use and occupancy of the subject premises shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

In the event that **MAINE MEDICAL** or any successor fail to continue to utilize the property in accordance with this Agreement, or in the event of a breach of any condition(s) set forth in this Agreement, the Planning Board shall have the authority, after hearing, to resolve the issue resulting in the breach or the failure to operate. The resolution may include a recommendation to the City Council that the site be rezoned to R-6 or any successor zone and that this Agreement be terminated, requiring a cessation of the general, business and professional offices, clinics and parking uses permitted under this terms of this Agreement.

WITNESS: CITY OF PORTLAND

A-5

MMCCONGRESSREZ.CONPB.FIN
06.11.97

_____

By_____
Robert B. Ganley
Its City Manager

WITNESS:

MAINE MEDICAL CENTER

_____

By:_____

Its:

STATE OF MAINE
CUMBERLAND, ss. , 1997

Personally appeared the above-named Robert B. Ganley, in his capacity as City Manager, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the City of Portland.

Before me,

_____
Notary Public/Attorney at Law

STATE OF MAINE
CUMBERLAND, ss. , 1997

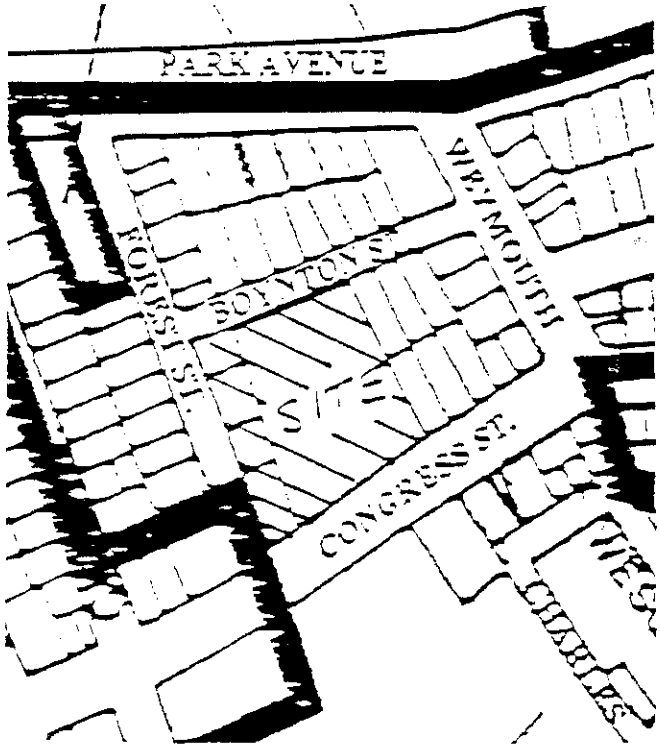
Personally appeared the above-named , in his/her capacity as of Maine Medical Center and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of Maine Medical Center.

Before me,

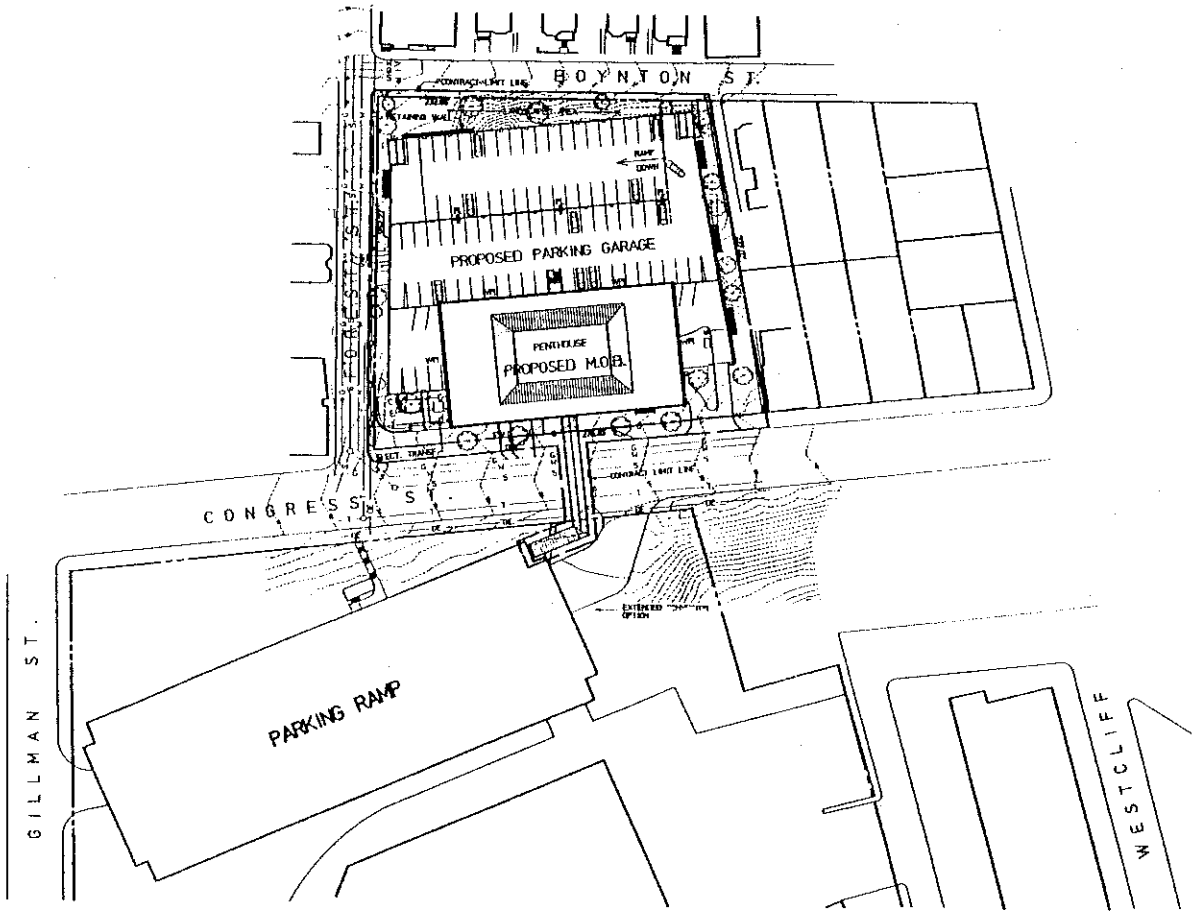
_____
Notary Public/Attorney at Law

Attachment 1

SITE OF PROPOSED CONTRACT ZONE



Attachment B-1



PROJECT STATISTICS

BUILDING SUMMARY

BUILDING ZONING	RESIDENTIAL (R-6)
BUILDING SIZE	175,000 SQ. FT. (4.02 AC.) (R-6) 75 SQ. FT. (50.07 AC.)

PARKING SUMMARY

TOTAL CARS PROVIDED	410 CARS

UTILITY LEGEND

	EXISTING UTILITIES
	PROPOSED UTILITIES
C	CABLE
DW	DOMESTIC WATER
E	ELECTRICAL
FW	FIRE WATER
G	NATURAL GAS
OE	OVERHEAD WIRES
S	COMBINATION STORM / SANITARY
SS	SANITARY SEWER
ST	STORM SEWER
T	TELEPHONE
W	WATER

NOTES

1. REFER TO SHEET 3 FOR ADDITIONAL UTILITY INFORMATION
2. REFER TO SHEET 4 FOR BUILDING SETBACK DIMENSIONS

LOT COVERAGE RATIO

BUILDING AREA	45,768.72 SQ. FEET
IMPERVIOUS AREA	2,662.71 SQ. FEET
TOTAL LOT AREA	60,865.83 SQ. FEET

$$L.C.R. = \frac{\text{BLDG. AREA + IMPER. AREA}}{\text{TOTAL LOT AREA}} = 80\%$$

SITE PLAN

0 20 40 80 120 1" = 40'

N

MEDIPLEX
MEDICAL BUILDING CORPORATION
DALLAS, TEXAS

REVISIONS		
NO.	DATE	BY
1	2/18/97	RF
2	2/24/97	RF
3	3/7/97	RF
4	4/28/97	RF

PROPOSED MEDICAL OFFICE BUILDING & PARKING GARAGE FOR
MAINE MEDICAL CENTER
PORTLAND, MAINE

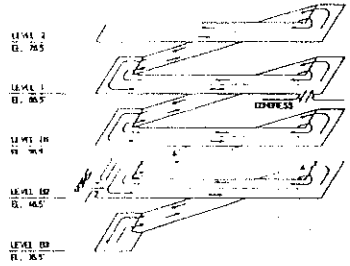
DATE 2/10/97
DRAWN BY RF
APPROVED BY

PROJECT NO. 5195

SHEET NO.

OF

MAINE MEDICAL CENTER PARKING GARAGE



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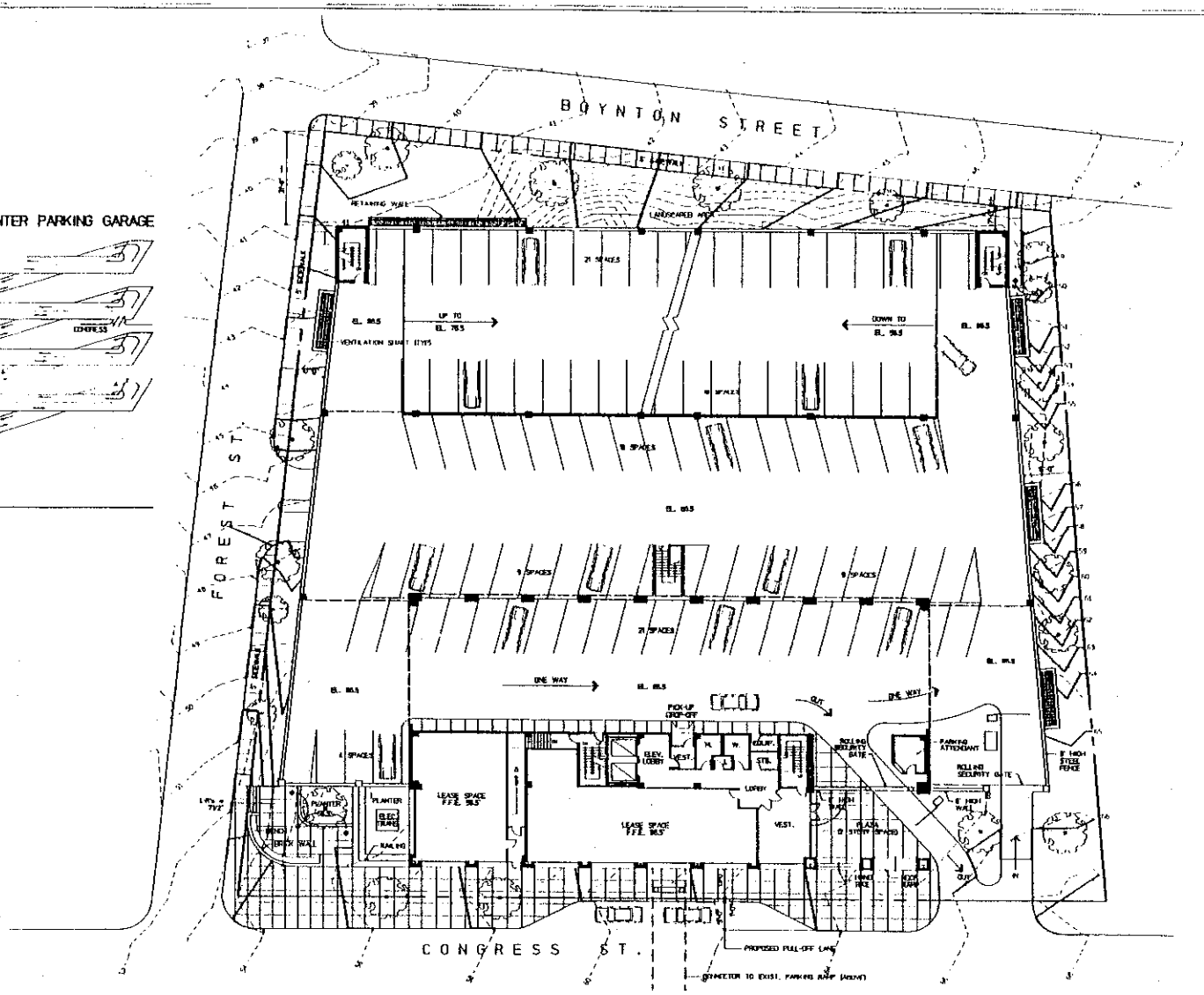


FIRST FLOOR PLAN

0 8 16 32 48

1/16" = 1'-0"

MEDIPLEX
MEDICAL BUILDING CORPORATION
DALLAS, TEXAS

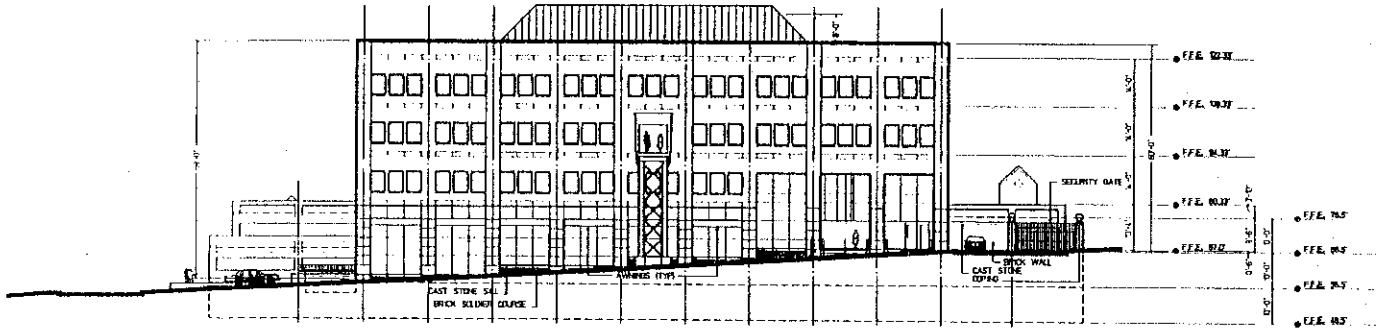
REVISIONS		
NO.	DATE	BY
1	10/20/96	
2	2/10/97	
3	2/18/97	
4	2/24/97	
5	3/10/97	
6	6/18/97	

PROPOSED MEDICAL OFFICE BUILDING
& PARKING GARAGE FOR
MAINE MEDICAL CENTER
PORTLAND, MAINE

DATE: 10/29/96
DRAWN BY: N
APPROVED BY:

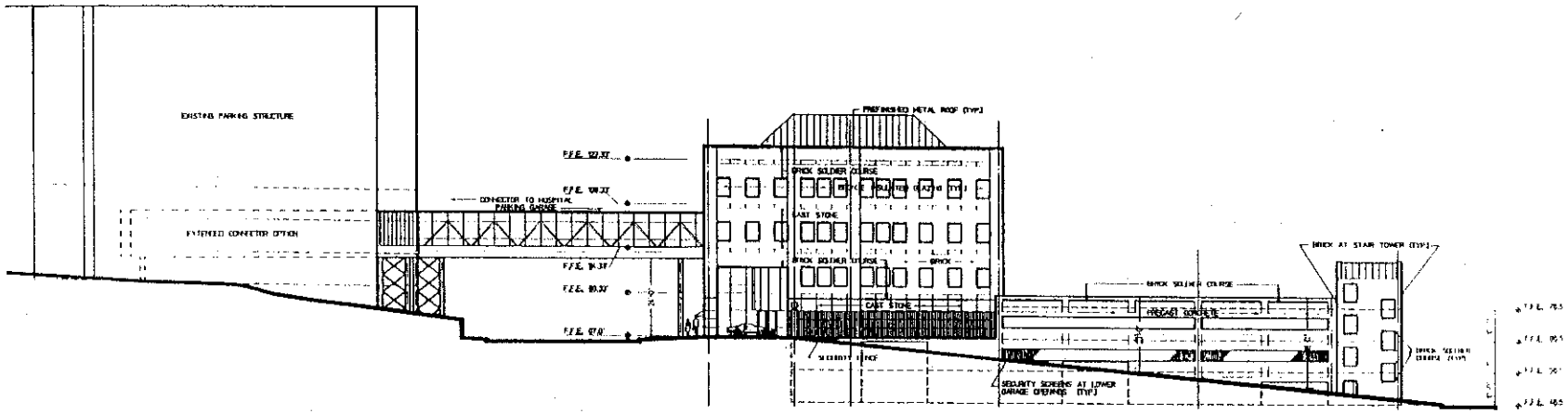
PROJECT NO.
5195

SHEET NO.
4
OF



SOUTH ELEVATION

1/16" = 1'-0"



EAST ELEVATION

MEDIPLEX
MEDICAL BUILDING CORPORATION
DALLAS, TEXAS

REVISIONS		
NO.	DATE	BY
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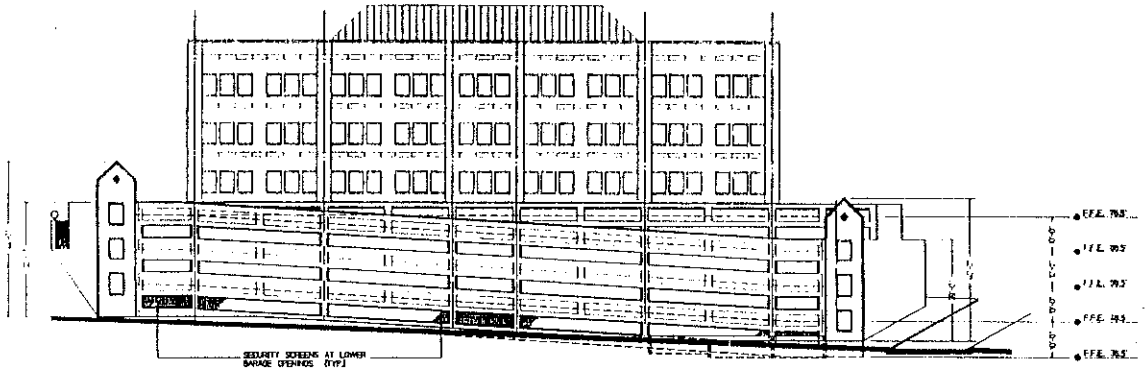
2	2/10/97	[illegible]
3	2/21/97	[illegible]
4	2/24/97	[illegible]
5	3/17/97	[illegible]
6	4/16/97	[illegible]

PROPOSED MEDICAL OFFICE BUILDING & PARKING GARAGE FOR
MAINE MEDICAL CENTER
PORTLAND, MAINE

DATE 12/20/96
DRAWN BY RF
APPROVED BY

PROJECT NO. 5195

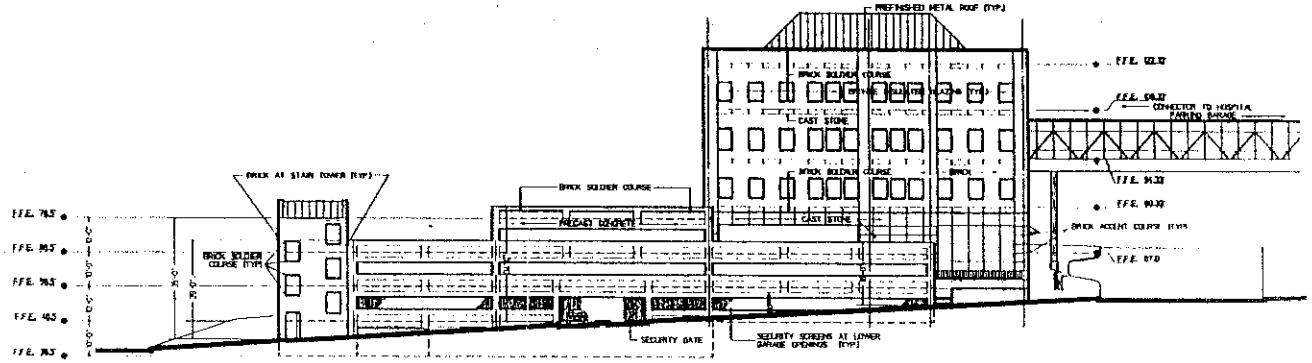
SHEET NO. 7A
OF



NORTH ELEVATION

1/8" = 1'-0"

0 8 16 32 48



WEST ELEVATION

MEDIPLEX
MEDICAL BUILDING CORPORATION
DALLAS, TEXAS

REVISIONS		
NO.	DATE	BY
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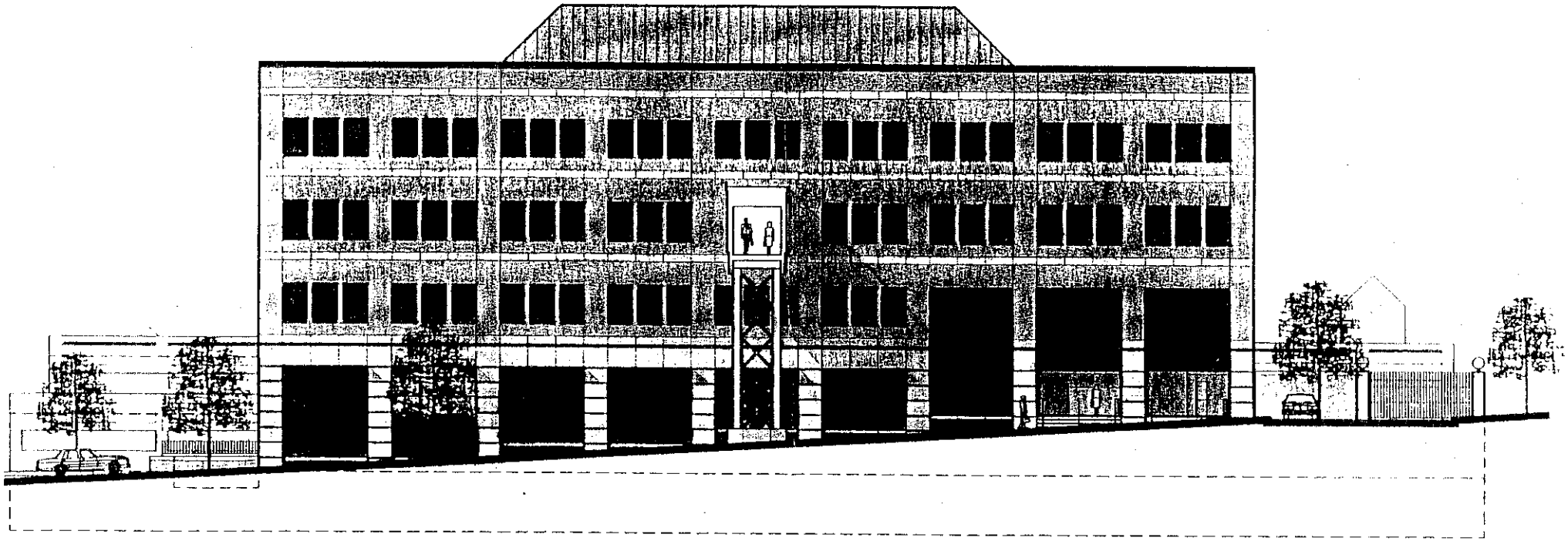
2	2/10/97	[illegible]
3	2/18/97	[illegible]
4	2/21/97	[illegible]
5	3/18/97	[illegible]
6	7/16/97	[illegible]

PROPOSED MEDICAL OFFICE BUILDING & PARKING GARAGE FOR
MAINE MEDICAL CENTER
PORTLAND, MAINE

DATE: 10/20/96
DRAWN BY: [illegible]
APPROVED BY:
PROJECT NO. 5195

SHEET NO. 8A
OF



SOUTH ELEVATION

0 8 16 32 48

1/16" = 1'-0"

EAST ELEVATION

ATTACHMENT C-1

MAINE MEDICAL CENTER

January 2, 1997

Portland Planning Board
4th Floor City Hall
389 Congress Street
Portland, Maine 04101

The Maine Medical Center (MMC) is proposing to construct an office building and parking structure on an MMC owned 1.4 acre tract of land bounded by Congress Street, Forest Street and Boynton Street. The site is in an R-6 zone and we are requesting a change to a contract zone. The contract zone will enable us to make the most efficient use of the site in terms of the structure and the parking garage. Currently a portion of the site is used for surface parking for MMC employees. In early 1993, three residential structures (9, 15 and 19 Forest Street) with a total of 13 units were removed from the site. The structures were old, difficult to maintain and approaching substandard condition. At that time, MMC relocated all the existing tenants, including one whom we placed in a nursing home. We believe this project represents a reasonable transition for the site and that the relevance of the housing change has faded with time.

Initially, the office space will be occupied by groups of physicians who practice at MMC: some employed by MMC and others in private practice leasing space. In addition, a portion of the training of the physicians in MMC's general surgery residency program will be in the building in our Surgery Clinic and in the offices of the physicians. Depending upon the ultimate complement of physicians, certain diagnostic services also may be provided, e.g., radiology and laboratory.

The 49,000 gross square foot building will front Congress Street and will have a pedestrian entrance at grade with 4 levels above grade. The 390 car garage will have access from Congress and Forest Streets. On Congress, the garage will be at grade and on Boynton Street three levels will be above grade. An enclosed above ground walkway will connect the building with the MMC parking structure across Congress Street. Total project budget is estimated to be $10-11 million.

This project is part of the overall MMC Master Facility Plan approved by the MMC Board of Trustees in August 1995. That plan included the expansion/renovation project at MMC (reviewed by the Planning Board in July 1996), development of facilities in Falmouth and Scarborough and long term strategies regarding parking. One of those parking strategies related to the continued use of the MMC Realty Corp., owned 650 space Gateway Garage.

22 Bramhall Street, Portland, Maine 04102 (207) 871-0111

Currently, MMC parks an average of 320 employees per day in that garage. Of those 200 are shuttled to MMC and the remaining 120 work in MMC Realty Corp. owned offices in the building's condominiums. With this project, we intend to relocate into the new parking facility those employees who park at the Gateway and shuttle to MMC. The relocation of these employees to the MMC campus will improve productivity by eliminating the shuttle time and free parking that is needed to meet downtown demands.

With respect to the contract zone, we would like to propose the following:

- permitted uses equivalent to the "business", "institutional" and "other" uses in a B-2 zone;
- building set backs, building height, site coverage and landscaping as set forth in the site plan;
- signage appropriate to the site, building size and surrounding area.

We believe this project will have significant, positive impact on the area, on patients, physicians and on MMC employees:

- Several of the physicians who will be in the building have offices in older, less accessible structures in the area surrounding the hospital. Patient access will be improved and demand for on street parking will be reduced.
- The project expands medical office space in Portland without adding traffic pressures to the Western Prom residential areas.
- Employee productivity is improved by eliminating the shuttle time and it eliminates the need for the shuttle buses.
- Physician response time and efficiency are improved by locating their offices close to the hospital.
- The quality of the general surgery residency is improved by clustering the teaching faculty, patients and resident physicians.

In addition, the project will free up parking at the Gateway Garage to serve the needs of downtown Portland.

We look forward to the opportunity to review this project with the Planning Board and staff.

Respectfully submitted,

Donald L. McDowell
President

/cyg

MAINE MEDICAL CENTER

MEMORANDUM

TO: Alex Jaegerman
Richard Knowland

FROM: Paul Gray, Vice President of Planning

DATE: March 12, 1997

RE: CONTRACT ZONE

This memorandum sets forth our thoughts regarding the contract zone for the medical office building and parking garage on Congress Street.

1) site development

The property shall be developed substantially in accordance with the site plan and elevations shown on Attachment ___.

2) uses

MMC will be authorized to establish and maintain the following uses:

- general, business and professional offices as defined in Section 14-47 of the Portland Land Use Code
- clinics as defined in Section 14-47 of the Portland Land Use Code

3) Site Plan Review and Contract Zone

In addition to the conditions set forth in this contract, any relevant conditions resulting from the Site Plan Review will be incorporated into the contract. The site plan includes the connector across Congress Street.

4) signage

Signage on the property shall conform with the sign regulations for B-2 Regional Business Zone in the Portland Land Use Code.

22 Bramhall Street, Portland, Maine 04102 (207) 871-0111

MAINE MEDICAL CENTER
OFFICE BUILDING AND PARKING GARAGE
PORTLAND PLANNING BOARD
March 25, 1997

Thank you Mr. Chairman.

I am Paul Gray, Vice President of Planning at Maine Medical Center. With me are Mr. Damian Donati and Mr. Ed Gazinski, Vice Presidents, Mediplex Medical Building Corporation, Dallas, Texas and Mr. Tom Gorrill, Vice President, DeLuca Hoffman Associates, South Portland, Maine. Mediplex has been retained by MMC to assist us in this phase of the project we are discussing today. The firm has significant experience nationally in the development of medical office buildings. You know Mr. Gorrill from his prior appearances before this Board on behalf of MMC and other clients.

On January 14, 1997, we presented to this Board our initial concept of this medical office building/parking garage complex. At that meeting, the Planning Board raised a number of issues and questions which we will be addressing in our presentation this evening. Since the January 14, 1997 meeting, we have had several meetings with City staff to discuss the site plan, parking, traffic and related matters.

Our objectives for this workshop are:

1) to provide an updated description of the project;
2) to address the issue and questions raised by the Planning Board at the January 14, 1997 meeting and by the staff since that meeting;
3) to discuss the series of conditions that are included in the contract zone we are requesting;
4) to answer any questions you have and to seek your guidance on how to proceed.

PROJECT SUMMARY

We are proposing to construct an office building and parking structure on a 1.4 acre tract of land across Congress Street from our existing parking garage. The site is bounded by Congress Street, Forest Street and Boynton Street. The site is an R-6 zone and we are requesting a change to a contract zone. The 49,150 gross square food building will front Congress Street with a pedestrian entrance at grade and four levels of office space starting at grade. Initially, the office space will be occupied by groups of physicians who practice at MMC... some employed by MMC and others in private practice leasing space. In addition, physicians in our general surgery residency program will receive a portion of their training in the offices of the physicians practicing in the building. We will also be moving our surgical clinic from MMC to the building. Depending on the complement of physicians, we may also provide radiology and laboratory services in the building.

The parking garage will have 430 spaces, an increase of 40 spaces since our last discussion. One entrance to the garage will be on Congress Street and one entrance will be on Forest Street. Because the site slopes almost 30 feet from the southeast corner on Congress Street to the northwest corner (intersection of Forest Street and Boynton Street), the garage is built into the slope. While there are five levels of parking, the parking stops approximately 3 feet below the second level of the building, i.e., the north side of the building looks out at the roof of the parking garage to Boynton Street and beyond to Hadlock Field. An enclosed walkway will connect the third level of the office building with the MMC parking garage across Congress Street. The project budget is estimated to be $10-$11 million.

This project address four important needs that we have:

- to provide better preoperative and postoperative experience for surgical residents;
- to provide additional parking for MMC employees on campus;
- to improve physician response time and efficiency by moving their offices closer to the hospital;
- to upgrade the facilities available for patients seen in our Surgery Clinic.

The project will have significant positive impact on patients, physicians and employees, and on downtown Portland:

- several of the physicians who may be in the building have offices in older, less accessible structures in the area surrounding the hospital; patient access will be improved and demand for on street parking will be reduced;
- the project expands medical office space in Portland without adding traffic pressures to the overburdened west end;
- employee productivity is improved by eliminating the shuttle time and it eliminates the need for the shuttle buses;
- physician response time and efficiency are improved by locating their offices close to the hospital;
- the quality of the general surgery residency is improved by clustering the teaching faculty, patients and resident physicians;
- the project will, with the sale of the Gateway Garage, make the facility available to serve the parking needs of downtown Portland.

This project is part of the MMC Master Facility Plan approved by the MMC Board of Trustees in August 1995. Major components of that plan are:

- expansion of the MMC Bean Building, adding two floors of inpatient beds, one for pediatrics (Barbara Bush Children's Hospital) and one for cancer patients (Gibson Oncology Pavilion)
- renovation of 70,000 sq.ft. of existing MMC space to upgrade the emergency department, inpatient psychiatry, clinics, pharmacy and blood bank;

- re-use of the Brighton Medical Center campus for ambulatory surgery, urgent care and a joint venture comprehensive rehabilitation center with New England Rehabilitation Hospital of Portland/HealthSouth;
- development of a 40,000 sq.ft. medical office building in Falmouth for primary care physicians and diagnostic radiology services;
- development of the Scarborough Campus for a series of programs for the care of patients with cancer, endocrinology/diabetes, consolidation of laboratory services from MMC, BMC and NorDx and diagnostic radiology services.

PLANNING BOARD ISSUES/CONCERNS

At the January 14, 1997 workshop, the Planning Board raised a series of issues and questions regarding the project including:

- can the building be pulled forward on the site?
- what are the setbacks of the structure?
- what will be the impact of the project on traffic in the area?
- what will be the impact of the project on the neighborhood in terms of shadows?
- what will be the height of the project at various points on the site?
- what impact will the project have on parking?
- what are the specifics of the contract zone?

Our presentation today will address each of those issues.

Can the project be pulled forward on the site?

We have moved the building structure forward on Congress Street to the sidewalk.

What are the set backs?

- Congress Street - none
- Forest Street - 10 ft.
- Boynton Street - 36 ft. on the northwest corner (intersection of Forest Street and Boynton Street) decreasing to 12 ft. on the northeast corner (on Boynton Street)
- East side - 15 ft.

What will be the impact of the project on traffic in the area?

Deluca Hoffman has prepared an extensive traffic study of the area. Mr. Tom Gorrill is prepared to review the results and recommendations of that study. Originally, we proposed two entry/exit points on Congress and one entry/exit point on Forest. We have modified that plan to provide one entry/exit point on Congress Street (southeast corner) and one on Forest Street (mid point of the site). The traffic study level of service analysis shows that the

project will not have a significant impact on the surrounding street system. The report recommends construction of left hand turn lanes on Congress Street at Forest Street and the Congress Street site entry. These left hand turn lanes require removal of parking on the south side of Congress Street which requires City Council approval. The study also recommends some specific changes for selected intersections which will be addressed by Mr. Gorrill.

What will be the impact of the project in terms of shadows?

A shadow study was prepared comparing existing shadows with the shadows cast by the project on 4 separate days: Winter Solstice (December 21), Vernal Equinox (March 21), Summer Solstice (June 21) and Autumnal Equinox (September 21); and at 3 times each day (9 am, 12 noon, and 3 pm). In summary, that study shows that the only time of year when the project has a significant shadow effect, compared with existing conditions, is around the Winter Solstice.

What will be the height of the project at various points on the site?

Before reviewing the actual heights, perhaps the most significant points are the distances between the office structure and the east side and Boynton Street neighbors. We have already discussed the set backs for the garage. The north side of the office building is approximately 145 feet from Boynton Street and approximately 40 feet from the east side property line.

What impact will the project have on parking?

DeLuca Hoffman prepared a detailed parking study for this Planning Board as part of our proposal to expand the Bean Building on the MMC campus. The attached letter from DeLuca Hoffman updates that study taking into consideration the impact of this project. In summary, that analysis shows:

MMC Inventory of Spaces	2,373
MMC Demand after Scarborough Campus is Operational	1,914
Medical Office Building Demand for patients and non MMC Employees	226
Total Demand	2,140
Surplus (Deficit)	233
Occupancy	90%

Mr. Gorrill is prepared to review the details as necessary. It is important to point out that the demand for the office building was based on a field study of area office buildings' parking.

CONTRACT ZONE TERMS

With regard to our proposal for a contract zone, the alternatives were the R-6 or B-2. The type of medical office building and parking garage we are proposing is not a permitted use or conditional use in an R-6 zone. The B-2 zone could be used for a parking garage, but not a parking garage and medical office building. The 45' height limit make developing an office building and parking on the scale we are proposing impossible. A lower rise building with parking for the building only does not meet an important objective of the project, i.e., bringing back to the MMC campus the employee parking currently at the Gateway Garage. As a consequence we have proposed the contract zone.

On March 16, 1997, Planning Department Staff provided us with a draft of the proposed contract zone for this project. We have reviewed the nine stated conditions in the contract on pages 2 and 3 and find them acceptable. Our only concern relates to the last paragraph of the contract which states:

> "In the event that Maine Medical or any successor fail to continue to utilize the property in accordance with this Agreement, or in the event of a breach of any condition(s) set forth in this Agreement, the Planning Board shall have the authority, after a hearing, to resolve the issue resulting in the breach or the failure to operate. The resolution may include a recommendation to the City Council that the site be rezoned to R-6 or any successor zone and that this Agreement be terminated, requiring a cessation of the general business and professional offices, clinics and parking use permitted under the terms of this Agreement."

Our concern is under what circumstances would the City determine that such a "failure to use" or "breach of the agreement" might have occurred that would necessitate a hearing to investigate the matter. We raise the issue only for clarification purposes.

Conclusions

We do not believe this project will have an adverse impact on this neighborhood. Rather, during working hours, it will bring to the area patients and their families and MMC employees who will patronize area businesses and eating establishments. The building will contribute to the city's tax base. We believe we can and will be a good neighbor. Between now and the public hearing, we will be meeting with area residents to discuss the project.

Thank you. Mr Chairman. I would be happy to answer any questions.

ATTACHMENT O-1

DeLUCA HOFFMAN ASSOCIATES, INC
CONSULTING ENGINEERS

779 MAIN STREET
SUITE 5
SOUTH PORTLAND, MAINE 04106
TEL 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

March 11, 1997

Mr. Paul Gray
Vice President Planning
Maine Medical Center
22 Bramhall Street
Portland, ME 04102-3175

Subject: Maine Medical Center Parking Demand

Dear Mr. Gray:

Per your request, DeLuca-Hoffman Associates, Inc. has completed a parking analysis for Maine Medical Center (MMC). This analysis has been based on the following conditions:

- Completion of the current expansion of the Bean Building and renovation of other portion of the MMC campus.
- Completion of the proposed 49,156 s.f. medical office building and related parking.
- Sale of the Gateway Garage reducing the available parking to MMC from 650 spaces (capacity of the garage) to approximately 120 spaces.

The purpose of this letter is to summarize the demand and supply with the above conditions in place.

Parking Supply

DeLuca-Hoffman Associates, Inc. completed a parking analysis in June 1996 for the proposed additions to the Bean building which showed a parking supply of 2,363 spaces. Based upon preliminary plans dated 2/10/97 prepared by Mediplex for the proposed 49,156 s.f. medical office building on Congress Street northerly of Sportsman's Grill, there are 430 spaces planned as part of the office building. The location of the office building is shown in Figure 1 following this page. The proposed office building will displace 52 spaces currently on the site for a net gain of 378 spaces (430-52) over MMC's current supply.

Two other factors which will affect the parking supply are MMC's planned sale of the Gateway Garage which has 650 spaces and the lease of 150 parking spaces on St. John Street. As a condition of the sale of the Gateway garage, 120 spaces will be reserved for MMC employees who currently work at the Gateway.

Based on these factors and supply data previously furnished by MMC, DeLuca-Hoffman Associates, Inc. has summarized the supply after the Gateway sale and completion of the proposed Medical Office Building in Table 1 as follows:

NOTE: GAY GARAGE IS NOT SHOWN
BACK PARKING LOT
MAINE MEDICAL CENTER
VAUGHAN ST
Portland, Maine

TABLE 1	
Location	**Number of Available Spaces**
Ramp Parking Garage	1,276
Congress Street Parking Lot by Sportsman's Grill	430
Admitting	9
Visitors Parking Lot	315
MRI	11
In back of Gilman Street	15
Emergency	10
Oncology	10
Gateway Garage (Not shown in Figure 1)	120
Diabetes Center	15
Spaces Leased on St. John Street	150
Spaces Reserved at Farmers Market Garage	12
Total Available Spaces	**2,373**

Parking Demand

Based on the "Parking Analysis for a Proposed Expansion to the Bean Building at Maine Medical Center" completed by DeLuca-Hoffman Associates, Inc. in June 1996, the estimated demand upon completion of the Bean addition and relocation of employees from MMC to the ambulatory care facility in Scarborough was anticipated to be 1,914 spaces.

Very little information exists through transportation technical publications such as the Institute of Transportation Engineers or the Urban Land Institute to establish the parking demand for a medical office building. Methodologies are set forth in these publications based on the number of employees, however the number of employees is not currently known. DeLuca-Hoffman Associates, Inc. conducted parking inventories at similar facilities on February 11, 1997 from 7:30 a.m. to 3:30 p.m. at the existing Stroudwater Crossing on Congress Street in Portland and on February 12, 1997 from 7:30 a.m. to 3:30 p.m. at the existing medical building on 1250 Forest Avenue in Portland which are very similar to the proposed facility. This information is summarized in the table below:

Use	Available	Size (s.f.)	Peak # of Vehicles Park at Any Time	Occupied Spaces/1,000 s.f.	Available Spaces/1,000 s.f.
Stroudwater Crossing	147	32,190	123	3.8	4.6
1250 Forest Avenue Medical Building	127	40,317	80	2	3.2

Based on this information, DeLuca-Hoffman Associates, Inc. has used a parking ratio of 4.6 spaces/1,000 s.f. to estimate the parking demand for the proposed 49,156 s.f. medical office building. Based on this rate, the proposed office building will require 226 spaces (4.6 x 49,156). Thus, the proposed medical office building will increase the total campus parking demand to 2,140 spaces (1,914 + 226).

Parking Demand Compared to Supply

Based upon the information presented previously in this letter, the parking supply will be 2,373 upon completion of the proposed 49,156 s.f. medical office building with its associated 430 space parking garage and the sale of the Gateway garage. This supply of 2,373 is 233 spaces in excess of the forecast demand of 2,140 spaces upon completion of the office building and full operation of the Scarborough and John Roberts Road facilities. Thus, the supply exceeds the demand by 11%.

Please review these findings and contact me if you have questions or would like to discuss these findings in more detail.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President of Transportation

TLG/ajm/1471/brem1-14

c: Robert Bremm

ATTACHMENT E-1

CITY OF PORTLAND - TRAFFIC SECTION
MEMORANDUM

Date: 03/18/97

To: Richard Knowland, Senior Planner

From: Thomas A. Errico, P.E., Traffic Engineer

Subject: Maine Medical Office Facility - Congress Street

In conjunction with the above project, I have reviewed the traffic impact study prepared by DeLuca-Hoffman Associates, Inc. dated March 1997. In addition, I have reviewed the Parking Analysis also prepared by DeLuca-Hoffman Associates, Inc. dated March 11, 1997. My specific comments are summarized below.

- The Parking Analysis performed indicates the parking supply will exceed demand following the construction of the proposed project. In reviewing the data available, the proposed parking garage supply will be absorbed by the parking requirements of the proposed 49,156 square feet medical office building, and the elimination of parking spaces at the Gateway Garage. As indicated by John Peverada, in his Memorandum to you dated March 11, 1997, parking availability in the vicinity of the Maine Medical Center is poor. If the conclusions of the Parking Analysis are in fact accurate, supply is greater than demand, than improvements in the management of parking should be considered. While this project should not worsen parking conditions, it is recommended that improved parking measures (i.e. increasing supply or improved management) be considered.

- According to the traffic impact study, 62% of the traffic will enter the parking garage via the Forest Street driveway. An explanation should be provided that supports the trip distribution assumptions.

- At the Congress Street/Bramhall Street/Deering Avenue intersection, it is recommended that a lead phase be provided from Bramhall Street and the signal timing revised. In conjunction with the lead phase, a five-section signal head will be required. In conjunction with the Holt Hall project, the installation of a five-section head was a condition of approval, and therefore may not be needed for this project. It is recommended that a proposed traffic signal timing plan be provided for implementation after build-out of the project.

- I concur with the recommendation to restripe the northbound Valley Street approach to consist of an exclusive right-turn lane and a shared left/through lane.

- At the Park Avenue/St. John Street intersection, northbound movements from St. John Street currently operate poorly, and will continue to operate poorly following build-out of the project. To help improve conditions, it is recommended that the cycle length be reduced form 90 to 60 seconds. It is recommended that a proposed traffic signal timing plan be provided for implementation after build-out of the project. It should be noted that while the intersection is expected to operate at an acceptable level of service following build-out of the project and revisions to the cycle length, movements from northbound St. John Street will continue to operate poorly.

- At the Congress Street/St. John Street intersection, improvements to the traffic signal phasing and timing are recommended to improve operating conditions. It is suggested that a traffic signal phasing and timing plan be prepared for implementation following build-out of the project. In addition, an assessment into the safety implications of eliminating the existing protected phases should be documented.

- An evaluation of signal warrants was performed at the Congress Street/Gilman Street and Forest Avenue/Park Avenue intersections. It appears that all eleven warrants were reviewed, although the study does not reference the data (i.e. delay, eight hour volumes, etc.) needed to evaluate all warrants. An explanation should be provided summarizing the data used in the evaluation of signal warrants.

- Poor levels of service were projected at the unsignalized intersection of Park Avenue and Valley Street. The study did not develop mitigation measures at this location.

- An evaluation of the need for left-turn lanes at the Congress Street/Forest Street and Congress Street/Proposed Project Driveway intersections were performed. Results indicate left-turn lanes are warranted. It is suggested that a conceptual sketch be prepared outlining the proposed roadway configuration. In addition. determination on the number of on-street parking spaces to be removed, as a result of the proposed left-turn lanes, should be estimated. Additionally, recommendations should be developed in respect to the existing Bus Stop located on Congress Street, and whether the proposed left-turn lanes will compromise safety and mobility.

- Although the intersections of Congress Street St. John Street and Congress Street/Valley Street do not meet the criteria for a potentially hazardous location, the frequency of accidents is significant. It is recommended that a detailed evaluation of accident conditions be performed at these locations.

- Significant pedestrian activity is expected between the proposed Medical Office Building and Maine Medical Center. Provisions should be investigated relative to the crossing of pedestrians on Congress Street.

- The traffic impact study recommends the installation of a traffic signal at the Park Avenue/Forest Street intersection. It is suggested that the intersection be monitored following build-out of the project, and if actual field conditions warrant, a traffic signal should be installed. Accordingly, funds should be provided in an escrow account to ensure a follow-up study is performed and installation of a traffic signal is accomplished , if necessary.

CC: Bruce Bell, Operation Manager of Public Works

Bill Bray, Deputy Director of Public Works

E-3

MEMORANDUM

TO: Rick Knowland, Planner
FROM: John Peverada, Parking Manager J.P.
DATE: May 15, 1997
RE: Proposed MMC Parking Garage and Office Building

I support the concept presented by Maine Medical Center to construct an office building and parking garage on the vacant lot at the corner of Congress and Forest Streets. In my opinion, aesthetically the proposed development will be an improvement to the area, however, there is a misconception. Whenever anyone hears about a parking garage associated with this project, they naturally assume that on-street parking in the area will be improved. The perception is that parking will not be an issue.

However, as I have previously stated, it is my opinion that the proposed parking garage associated with this project will not be large enough to handle the demand. In fact, after reading MMC's submission to the Planning Board, I believe that the figures quoted in the March, 1997 letter from Mr. Thomas Gorrill of DeLuca Hoffman, and the January 2, 1997 letter from Mr. Don McDowell support my assumptions. The following is my summary of the estimates provided by, or on behalf of, the hospital:

430	parking spaces proposed in the new garage
- 52+	spaces displaced from the existing lot (I'd say more)
- 228	spaces for the new building 4.6/1000 per Mr. Gorrill's letter
- 200+	spaces for vehicles relocated from the Gateway Shuttle, per Mr. McDowell (I'd say more)
- 27+/-	spaces on-street lost due to the proposed left turn lane on Congress St.
- 75	space shortfall

Correct me if you think that the above analysis is wrong, but I believe that everyone should be aware of this situation. Additional parking is needed for MMC visitors, patients and employees. Presently, the Bramhall lot is overflowing, with several cars stacked on the street waiting to get in to the lot on a regular basis. The Western Prom neighbors are complaining about on-street parking as are "customers of the hospital". I believe that unless the proposed garage at Forest and Congress Streets is enlarged, we will be duplicating the current problems at Bramhall St. / Western Prom in this neighborhood. The new garage should be larger, or the office building made much smaller.

If MMC proposes to offset the demand for parking by shuttling employees from an off-site lot, then they should present the City with a long-term lease, or verification of ownership of the lot. They should also assure the City that their employees will not be parking on the streets.

Finally, I quickly looked at the plans, and did not see a snow gate on the roof. How do they plan to dump and remove snow?

Please pass this memo on to the Planning Board and Council.

cc: Bob Ganley, City Manager
Joe Gray, Director of Planning
Alex Jaegerman, Chief Planner
Gloria Thomas, Department Head
Bill Bray, Deputy Director, Public Works

5-14M2.WPS

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Planning & Urban Development
FROM: John Peverada, Parking Manager J.P.
DATE: March 11, 1997
RE: Maine Medical Center Parking

Attached are copies of two orders that are tentatively on the March 17, 1997 Council agenda. As you can see, both orders deal with implementing two hour parking restrictions in the vicinity of Maine Medical Center (Thomas and Clifford Sts.), because of the unavailability of existing on-street parking due to the "all day parkers" who, I assume, are affiliated with Maine Medical Center.

Recently, I have been told by visitors of the hospital that there is a waiting line to get into the Bramhall St. parking lot between 11:00 am and 1:00 pm. People are forced to ride around the neighborhood looking for on-street spaces.

My purpose in bringing this to your attention is to let you know that parking is in very tight supply in the vicinity of Maine Medical Center, and each time unrestricted parking is taken off one street, those "all day parkers" are just moved another block away, putting a burden on another neighborhood.

In my opinion, Maine Medical Center should be encouraged to increase the size of the proposed parking garage at Congress and Forest Sts., so that their employees who currently park on the street will have an alternative. Mr. Carl Winslow, a landlord on Boynton St., has already inquired about having Boynton St. signed for two hour parking for the reasons outlined above.

cc: Bob Ganley, City Manager
Bill Bray, Deputy Director of Public Works
Joe Gray, Director of Planning
Alex Jaegerman, Chief Planner
Gloria Thomas, Department Head

E-4

ORDER (TAB) ORDER AMENDING TRAFFIC SCHEDULE RE: THOMAS STREET - SPONSORED BY ROBERT B. GANLEY, CITY MANAGER.

The Traffic Division has received a written request from the residents of Thomas Street to change the existing unrestricted on-street parking. The request is for a two-hour parking restriction for the entire street (Spring Street to Pine Street).

The unavailability of the existing on-street parking due to "All Day Parkers" is what ha prompted the residents to petition for the two-hour parking restriction. This action will allow Thomas Street residents use of the Residential Permit Parking Sticker Program.

The Traffic Division recommends approval of the proposed two-hour parking Traffic Schedule Amendment.

This item requires five affirmative votes for passage; after an opportunity for public comment has been given.

John - Fyl

ORDER (TAB) ORDER AMENDING TRAFFIC SCHEDULE RE: CLIFFORD STREET - SPONSORED BY ROBERT B. GANLEY, CITY MANAGER.

The Traffic Division has received a written request from the residents of Clifford Street to change the existing unrestricted on-street parking. The request is for a two-hour parking restriction for the entire street (Vaughn Street to Thomas Street).

The unavailability of the existing on-street parking due to "All Day Parkers" is what has prompted the residents to petition for the two-hour parking restriction. This action will allow residents use of the residential permit parking sticker program.

The Traffic Division recommends approval of the proposed Traffic Schedule Amendment.

This item requires five affirmative votes for passage; after an opportunity for public comment has been given.

<u>LICENSES:</u>

ORDER 221 (TAB) ORDER GRANTING MUNICIPAL OFFICERS' APPROVAL FOR NEW AND RENEWAL STATE LIQUOR LICENSES AND SPECIAL ENTERTAINMENT PERMITS - SPONSORED BY NADEEN M. DANIELS, CITY CLERK.

Alef

E-5

CITY OF PORTLAND

MEMORANDUM

TO: Joe Gray, Director of Planning
Rick Knowland, Planning
Tom Erico, Traffic Engineer
FROM: John Peverada, Parking Manager J.P.
DATE: March 19, 1997
RE: Maine Medical Center Parking

Please find attached a typical letter that I receive on a regular basis from the patrons of Maine Medical Center. Unfortunately, this individual felt compelled to write to the City Manager.

I am sending you this information to you in hopes that you will be able to persuade Maine Medical Center to increase the size of their proposed parking garage. Additional parking is definitely needed in this area, regardless of what Maine Med or their consultants state.

E-6

March 13. 1997

Mr. Robert Ganley
Portland City Manager
389 Congress Street
Portland, ME 04101

Dear Mr. Ganley,

Yesterday, my mother, Mrs. Anna Lyford (91) was in need of the Maine Medical Emergency Room services. In attempting to find parking, I discovered that the emergency room parking facility was under construction and so I frantically drove around the block to the main parking lot. Eight to ten cars were in line waiting to enter the parking lot and so I quickly diverted to the Western Promenade. It was clearly marked one hour parking. That is not my contention.

What troubles me is the seemingly capricious and callous issuance of tickets in that area in the first place. I would assume that most people parked in that area have concerns with the Maine Medical Center facilities. I was greatly concerned for my aged mother being left alone in the cubical of the emergency room due to a very difficult and similar situation about a year ago on March 2nd.

I was aware of the parking time limitation and was doing my best to comply with the time limit. However, circumstances prevented me from relocating my vehicle until 5:02pm. I know the issuing officer was performing his or her duty according to the city's rules, but I strongly feel that special situations regarding the construction and lack of parking in the Maine Medical Center vicinity need to be addressed more appropriately than just handing out tickets. It's an aggravation and insult to those of us concerned with ailing and seriously ill family.

I have inclosed a check for the imposed fine of $10. I am sending it to your office along with this letter. I am asking the City of Portland administration to either nullify the ticket and return the check to me or pass it on to the treasury department in blatant disregard for the circumstances surrounding the parking nightmare surrounding the Maine Medical Center facilities.

Sincerely yours,

W. G. Lyford

William G. Lyford
(207) 829-4401

8 Pinewood Drive
Cumberland Ctr., ME 04021

ATTACHMENT F

To: Mayor Campbell and Members of the City Council

From: Jaimey R. Caron and John H. Carroll, Portland Planning Board

Date: May 21, 1997

Subject: Maine Medical Center Contract Zone, Minority Opinion

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On May 13, 1997 the Portland Planning Board held a public hearing on a request by Maine Medical Center for contract rezoning of a property at the corner of Congress and Forest Streets. The board voted 4 in favor, 2 opposed to recommend a contract to the Council for approval. As the minority on that vote, we felt that the contract recommendation, as proposed, does not comply with clearly established city policy for this use in this location, and therefore, in our opinion, does not comply with the comprehensive plan. We would like to present our rationale for opposing the conditions in the rezoning contract.

The Planning Board reviews Contract Zone applications in two stages. The first review focuses on the policy issues associated with changing the allowable uses of the site. The board forwards its recommendation on a contract to the Council for enactment. The second stage, Site Plan Review, focuses on the technical issues associated with the development. At this point, the development does not seem likely to present any serious obstacles for the Planning Board's Site Plan review.

The Contract Zone review raised a more difficult question concerning the City's policy toward encroachment by institutions into residential areas and the displacement of housing. Several years ago, Maine Medical Center purchased the parcels on Congress and Forest Streets. In the early 1990's, they demolished the existing buildings, resulting in the loss of thirteen residential units. Maine Medical now proposes to expand across a major arterial to establish institutional uses within a residential neighborhood on land currently zoned for residential use.

In 1983 the City Council enacted the current ordinance provisions after careful analysis of the policy issues of encroachment and housing displacement by institutional uses in residential areas. Under existing standards for every residential zone, the Conditional Use Standards set criteria clearly intended to discourage institutional encroachment and residential displacement. Maine Medical Center's application conflicts with the intent of the ordinance in a way that the Planning Board encounters with increasing frequency. For example, on the day of the Maine Medical Center public hearing, the Board also reviewed a similar preliminary proposal from an institution seeking to demolish existing housing and expand into another residential area. In recent applications from Waynflete School, Mercy Hospital, and 75 State Street, the board consistently followed the City's policy of protecting residential areas from encroachment.

In our view, the zoning contract requested by Maine Medical Center and approved by the Planning Board on May 13 does not adequately address the City's policies toward this type of expansion and encroachment. It offers neither protection nor compensation to the City for either the loss of housing or the institution's encroachment into the neighborhood. In voting against the contract, we want the record to show that we did so because we could see no reason to set conditions that effectively pre-empt the Council's authority and prerogative to amend or waive these standards in the City's land use policies.

More appropriately, the Contract Zone process allows the Planning Board and a property owner to negotiate a land use contract that compensates for the "unusual nature or unique location" of a project without deviating from the overarching land use policies embodied in the City's comprehensive plan. Had the contract included a provision to improve or replace housing in the neighborhood, we would have concurred that Maine Medical had met its threshold obligation to the neighborhood and to City policies. Further, a contract provision to provide compensation for the encroachment and loss of housing would have established a good and useful precedent for the Planning Board's future administration of the City's land use ordinances while keeping the underlying policies intact. In its policy-making role, the Council could make the choice to strip that provision out of the contract by suspending the policy or exempting Maine Medical Center, however, the Planning Board would have met its obligation to honor existing land use policies.

Gordon D. Simonds

104 West Street
Portland, Maine 04102
(207) 874-6666
(207) 773-5574 fax

May 7, 1997

Portland Planning Board
City Hall
389 Congress Street
Portland, Maine 04101

Re: Maine Medical Center -Objections to Proposed Contract Zoning due to present zoning violations and Lack of Attempted Solution to West End Parking Nightmare

Gentlemen:

As you are aware by letter of April 28, 1997, I strongly objected to the consideration by the Planning Board of the proposed zoning contract which the Maine Medical Center (the "MMC") now seeks to enter with the City in the vicinity of 883-903 Congress Street.

I will be unable to attend the May 13, 1997 meeting at which the Council will consider this matter because of a longstanding prior commitment out of the country. I did not want my absence to be interpreted as a change in position. I strongly object to any further consideration of this contract zoning until the MMC fully complies with the current zoning laws with respect to its existing properties and agrees to a specific solution to the West End Parking Problem.

Furthermore, since my last letter I have read a decision of the Maine Supreme Court which I believe should also be considered by the Council. I am enclosing herewith a copy of a letter of even date to Gary Wood, Esq. pointing out the case and requesting that he and the appropriate City Officials investigate this matter and consider a retroactive revocation of the real property tax exemption for the MMC's real estate which is vacant or which is utilized in ways which violate the City Zoning Laws.

I believe that it is also now appropriate for the Board to inquire why the MMC continues to house its training personnel in Mansions which are ill-suited for that purpose and which cost the taxpayers of our city $35,000 per year. In addition an inquiry as to the purpose for the retention of vacant property by the MMC in R-4 Zone would also seem appropriate.

I believe it is the duty of the City to require that the MMC solve the West End parking problem which it created and cure its existing zoning violations before considering its requested zoning contract. How can the City enter a contract with an entity which is in violation of its laws when it proposes that contract?

Thank you for you attention to these matters.

Very truly yours

Gordon D. Simonds

cc: Robert Ganley, City Manager
Gary Wood, Esq.
Portland City Council

Gordon D. Simonds

104 West Street
Portland, Maine 04102
(207) 874-6666
(207) 773-5574 fax

May 7, 1997

Gary Woods Esq.
Corporation Counsel
City of Portland
City Hall
389 Congress Street
Portland, Maine 04101

Re: Maine Medical Center -
Request for Investigation
and retroactive removal of
real estate property tax
exemptions.

Dear Mr. Woods:

As you may be aware, I have complained of certain violations of the City zoning law by the Maine Medical Center (the "MMC"). These violations involve properties owned by the Maine Medical Center located at 110 - 120 West Street, 233 Western Promenade, and 98 Chadwick Street. I have summarized these violations on Exhibit A enclosed herewith.

Recently I chanced upon the case of City of Lewiston v. Marcotte Congregate Housing, Inc., 673 A 2d 209 (Me, 1996). It seems to me that in this case the Maine Supreme Judicial Court strictly interpreted 36 M.R.S.A. Sec. 652(1)(A). The Court found that because 18% of a piece of real property owned by an organization qualified for exemption was not owned and occupied or used solely for the exempt organization's charitable purposes, the entire real property and a tunnel incidental to it were not exempt from real estate taxation.

In Marcotte the issue before the Court was the use of part of the real property. However, it occurred to me that an exempt organization could not possibly be granted the power under its charter to use its real property in violation of zoning or other laws. To act in such a way would not be a use of its real property solely for a purpose related to its own defined charitable and benevolent objectives.

Similarly, when an exempt organization does not utilize real estate at all and permits it to stand vacant, it must demonstrate that has plans for the future use of that property in order for the property to be exempt from real property tax. Advanced Medical Research Foundation v. Cushing, 555 A. 2d 1040 (Me., 1989) and Osteopathic Hospital of Maine v. City of Portland, 139 Me. 24 (1942).

So, in summary, I believe that the MMC is now either using certain of its properties in violation of the zoning laws or is not using them at all, and that these properties should not be exempt from real estate tax. The approximate annual tax loss is summarized on Exhibit B enclosed herewith and totals $37,700.00.

I have directed this letter to you because I was not certain to whom it should be directed. I trust that you will see that it reaches the appropriate department to investigate these matters and take appropriate action.

Thank you for your attention to this matter.

Very truly yours

Gordon D. Simonds

Gordon D. Simonds

cc: Portland Planning Board

EXHIBIT A

112 - 120 West Street - The maintenance of a 4,000 square foot office devoted to fund raising (the "Development Office") which employs five or six people on a full time basis;

233 Western Promenade - The operation of a print shop in the Carriage House located behind 233 Western Promenade which employs approximately five people and which I have been told does most if not all of the printing for the MMC and its related entities.

233 Western Promenade - is supposed to contain 10 bedrooms to be used to house student and faculty coming to Portland from the University of Vermont Medical School and substantial instruction and teaching is supposed to take place within the house. I believe that there is no instruction taking place within the house.

98 Chadwick Street - The operation of a truck and equipment storage and repair facility along with two or three offices for maintenance personnel (the repair function terminated in January, 1997, but the office function seems to continue).

EXHIBIT B

SUMMARY OF REAL PROPERTY TAX LOSS

	APPRAISED VALUE	REAL PROPERTY TAX ON APPRAISED VALUE
UNUSED PROPERTY		
223 Western Promenade		
VACANT LAND.....	41,670.00	1,023.42
ZONING VIOLATIONS		
112-120 West St.		
THOMAS HOUSE.....	$684,360.00	$16,807.88
233 Western Promenade		
CHISOLM HOUSE AND CARRIAGE HOUSE.....	690,840.00	16,967.03
98 Chadwick Street*		
GARAGE	76,140.00	1,870.00
TOTAL.....	$ 1,450,810.00	$37,707.21

* Property may now be partially unused

Gordon D. Simonds

104 West Street
Portland, Maine 04102
(207) 874-6666
(207) 773-5574 fax

April 28, 1997

Portland Planning Board
City Hall
389 Congress Street
Portland, Maine 04101

Re: Maine Medical Center -Objections to Proposed Contract Zoning due to present zoning violations and Lack of Attempted Solution to West End Parking Nightmare

Gentlemen:

The Maine Medical Center (the "MMC") now seeks to enter a contract for zoning with the City in the vicinity of 883-903 Congress Street. I strongly object to any further consideration of this contract zoning until the MMC fully complies with the current zoning laws with respect to its existing properties. I believe that the MMC's zoning contract request cannot be equitably or legally considered until its existing violations are remedied.

This letter will explain the zoning violations and other problem matters to which the MMC has been either unresponsive or less than honest.

THE ZONING VIOLATIONS

The MMC has for many years used several of its properties in violation of the zoning laws. The properties are located on the block bounded by West Street, Chadwick Street, and the Western Promenade, within an R-4 Zone. My family owns 104 West Street, a property abutting each of the MMC's properties where there are zoning law violations. These violations are:

1. 112 - 120 West Street - The maintenance of a 4,000 square foot office devoted to fund raising (the "Development Office") which employs five or six people on a full time basis;

2. 233 Western Promenade - The operation of a print shop in the Carriage House located behind 233 Western Promenade which employs approximately five people and which I have been told does most if not all of the printing for the MMC and its related entities.

3. 233 Western Promenade - is supposed to contain 10 bedrooms to be used to house student and faculty coming to Portland from the University of Vermont Medical School and substantial instruction and teaching is supposed to take place within the house. I believe that there is no instruction taking place within the house.

4. 98 Chadwick Street - The operation of a truck and equipment storage and repair facility along with two or three offices for maintenance personnel (the repair function terminated in January, 1997, but the office function seems to continue).

THE REAL PROPERTY TAX LOSS

Ownership of these properties by the MMC deprives the City of in excess of $35,000 per year in real property taxes (See attached list of MMC properties, their assessed values, and property tax at $24.56 per Thousand). In other words, the taxpayers of the City of Portland are paying an additional $35,000 each year for the MMC to house thirty of its interns and residents, its print shop, its fund raising office, and certain of its maintenance offices.

Why should these activities be allowed to continue in West End mansions? It certainly would seem responsible and appropriate for the City and the MMC to review the utilization of these mansions to house interns and residents. The city is losing tax base and the MMC is tying up in excess of $1,000,000 to house 30 interns and residents in mansions which are ill suited for the purpose and which are extremely costly to operate. Surely, The MMC is under a duty to operate economically when it utilizes its exempt status to avoid the payment of property taxes.

THE PARKING NIGHTMARE

The MMC has created a parking nightmare in the West End and does not now propose to alleviate the problem. In fact the MMC refuses to admit that there is a parking problem and submits reports from its parking "consultants" which play "fast and loose" with the numbers of demand and supply. These reports always conclude that all demand is satisfied. One need only to walk the streets around the MMC to see the congestion and ticketed vehicles, not to mention the hundreds of parking signs designed to prevent parking for over one hour.

The MMC has recently increased the parking problem by ceasing to use the Gateway garage where it had represented that 700 of its cars were being parked.

While the parking problem in the West End is widely known, it is perhaps less widely known that in its effort to obtain approval of the new addition to the MMC itself, the MMC represented (incorrectly) to various City Boards in 1996 that its estimated need for parking spaces was satisfied when the 700 plus spaces which were located in the Gateway Garage were counted in the supply. Of course, this statement was premised on the representation that these 700 spaces were fully utilized by the MMC's employees who were shuttled back and forth. This representation was incorrect in that only approximately 150 spaces in the Gateway Garage were regularly used because most employees were reluctant to take the time to be shuttled between High Street and the Hospital. Surely the MMC knew of this underutilization, or should have known of it and should have informed the City.

In the proposed zoning contract, the MMC seeks additional covered parking, but has failed to address the existing parking problem in the West End. Surely the MMC Could add another 250 to 300 parking spaces to its Congress Street proposal AND/OR could just as easily add more than that number of spaces in a subterranean and low rise parking structure located at its existing parking facility between Brackett, Bramhall, Chadwick and Vaughan Streets. Entry lines at this parking lot frequently stretch from the middle of Chadwick Street past Brackett Street and down Bramhall Street toward Congress Street.

INSTITUTIONAL INATTENTION

I absolutely recognize the need for the MMC to be able to function effectively as it is "the" major health care provider in Southern Maine and a huge employer in Portland. I further recognize that the MMC is one of, if not "the" most powerful, active bureaucratic institutions in the Southern Maine and for that reason I am not thrilled by the prospect of opposing them.

That is why I have not formally complained until now. I felt that it was possible that the zoning violations and parking nightmare would be voluntarily and promptly remedied. However, this has not happened, and the institution itself is now seeking to expand its sphere of influence without responsibly dealing with the community and the current violations and problems which it has created.

My attempts to work privately with the MMC to remove its zoning violations and to restore the residential character to the neighborhood have been frustrating. The MMC has known of the zoning violations for at least eighteen months and after fourteen

months has finally partially remedied one (the truck repair facility); believes that a second (the print shop) will be remedied sometime this summer, but cannot (or will not) furnish a date or details; and has no plans to remedy the other two. A simple one minute telephone conversation frequently takes two days to arrange.

I am also enclosing herewith a summary, by property, of what I found in the City Zoning Microfilm in October, 1995 with respect to the 120 West Street, 233 Western Promenade, the Garage at 233 Western Promenade, the Garage at 98 Chadwick Street and the Parking Lot at 92 - 96 Chadwick Street.

This information was orally conveyed by me to the MMC in November, 1995 and submitted to the MMC in writing (along with photocopies of the Microfilm Documents) on January 6, 1996. In 1995 I was informed that the MMC was unaware that there were any violations of the zoning law and that they were unaware that they could not operate a truck repair garage, a 4,000 square foot office, or a print shop in an R-4 zone. At that time, I found their denial of knowledge to be very difficult to believe (as the MMC did know enough to apply for annual tent permits at 120 West Street). Their inaction since that time does demonstrate either a knowing disregard of what they know to be violations, or an institutional inertia which amounts to a knowing disregard.

On April 11, 1997 I faxed the Hospital and requested that they inform me how they were planning to deal with each of these matters. Having heard nothing, I again faxed on April 17, 1997. I was then telephoned by a secretary and informed that I would have a response on April 22, 1997. I was finally told on April 23, 1997 that the Hospital was going to move the Print shop sometime this summer and that they had long since spoken with Marge Schmuckal about getting a conditional use for the offices in 120 West Street and that she (not the MMC) was responsible for their inaction as she had not dealt with their request for over one year.

CONCLUSION

My conclusion is that the facts appear to support a disregard for the zoning regulations of the City of Portland by several property uses which could never be done without variances - which could not be granted in an R-4 Zone - even to the MMC and even if timely variances had been requested.

Further, the parking needs of the MMC are strangling the West End and it refuses to acknowledge the problem and has not now addressed or attempted to solve that problem.

Now the MMC seeks to further expand its power and economic base by "housing" doctors in its own building on Congress Street adjacent to the MMC without curing (or even addressing) the zoning violations or parking problems which it has created in the past and which continue.

Just as an aside, I recently attended one Historical Preservation Committee hearing at which the MMC stated that one supporting rationale for the bridge between the new Congress Street Building and the main MMC buildings was that the new building would house its residents and interns and they needed to go back and forth at all hours. However, when I subsequently inquired from the MMC whether it would be moving its interns and residents from the properties located at 120 West Street and 233 Western Promenade, I was told that there were no such plans.

I believe it is the duty of the City to require that the MMC solve the West End parking problem which it created and cure its zoning violations before considering its requested zoning contract. How can the City enter a contract with an entity which is in violation of its laws when it proposes that contract?

Thank you for you attention to these matters.

Very truly yours

Gordon D. Simonds

cc: Robert Ganley, City Manager
Gary Wood, Esq.
Mike Swan, Maine Medical Center
Portland City Council
Board of Trustees of the Maine Medical Center

SUMMARY OF CITY OF PORTLAND ZONING RECORDS

THE THOMAS HOUSE - 112 to 120 WEST STREET

FACTS

In May, 1961 the Hospital appealed the zoning inspector's denial of its request to change its use of the Thomas House from a Single Family House to a Hospital Dormitory. A hearing was held in June, 1961. There were only two opponents and every Doctor and every Payson who ever lived wrote supportive letters.

A permit for change of use was granted on July 7, 1961 subject to a lot of physical changes plus the condition that "five off-street parking spaces required by the Zoning ordinance are to be provided in the existing garage located on the same property". The Certificate of Occupancy was issued on October 16, 1961 with an accompanying letter about the parking spaces.

UNAPPROVED USAGE OR CONSTRUCTION

It should be noted that the Hospital never applied for the conversion of the entire ground floor of the Thomas House into offices, so in effect no variance has been requested for the use of 4,000 square feet on the first floor for offices or for any parking by the employees who work in that space.

It should also be noted that the file contained no application for or approval of the creation or paving of a driveway from the Chisolm House to the Thomas House. This driveway is approximately 15 feet wide and is tar (and pretty ugly).

THE THOMAS GARAGE (98 Chadwick Street)

FACTS

There is absolutely nothing in this file indicating any requested physical change to or altered usage of this property. As far as the zoning records are concerned, the use of this structure is approved for the parking of five autos belonging to the residents of the Thomas House.

UNAPPROVED USAGE OR CONSTRUCTION

I believe that this building is being used as the over night storage place for a few trucks or snow removal vehicles and appears to be a completely equipped repair shop for the repair of the Hospital's vehicles. Frequently hospital vans and busses have been left behind the building on unpaved areas (often for extended periods).

92-96 CHADWICK STREET - (The Parking Lot)

FACTS

On August 25, 1967 a Certificate of Occupancy was granted for the use of this property as a "Parking Lot Off Street Parking for twenty-two passenger cars."

UNAPPROVED USAGE

At least three trucks (larger than pick-up trucks) and a few pieces of snow removal equipment are parked in this lot on a regular basis. Snow plows are also stored here in the off-season.

THE CHISOLM HOUSE (233 Western Promenade)

FACTS

On April 24, 1980, Raynold R. Welch wrote a letter to the Building Inspector to provide him with "sufficient information" to issue a building permit for alterations to the Chisolm House to create 10 bedrooms to be used to house student and faculty coming to Portland from the University of Vermont Medical School. It was stated that substantial instruction and teaching would take place within the house. Parking was to be in the Hospital's Bramhall Street parking facilities.

The usage was approved as a school use with accessory rooming facilities.

No application for the use of the rear structure (the Chisolm Garage) as a "print shop" was ever made. However, on June 25, 1995, Edward Herbert, and Sons, a contractor, filed a building permit application to make interior renovations to the Chisolm Garage. This permit was altered by the contractor on June 27, 1995 to reflect only exterior renovations. The permit was granted on June 29, 1995.

UNAPPROVED USAGE OR CONSTRUCTION

It should be noted that the Hospital never applied for the conversion of the Chisolm House into a dormitory alone, so in effect no variance has been requested for the present use of this house.

It should also be noted that the file contained no application for or approval of the creation or paving of a driveway from the Chisolm House to the Thomas House.

It should be noted that the Hospital never applied for the conversion of the entire Chisolm Garage into a print shop or for

the addition of parking spaces in front of that garage, so in effect no variance has been requested for the use of the Chisolm Garage as a Print Shop or for any parking by the employees who work in that shop.

So, in summary, by property, here is what seems to have happened:

120 West Street - The Thomas House:

Use of 4,000 square feet as offices not approved;
Parking on grounds not approved;
Driveway creation and paving not approved; and
Parking in Thomas Garage of five cars approved, but not done.

Thomas Garage

Use as fully equipped garage for vehicle repair not approved;
Use as storage building for snow removal equipment and trucks not approved; and
Use of rear as parking place for vans and trucks not approved.

Chisolm House and Garage

Use as dormitory alone, not approved;
Driveway (To Thomas House) creation and paving not approved;
Garage use as Print Shop not approved;
Addition of parking spaces not approved and conflicts with representation that parking would be in Bramhall Street Lot.

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Planner
FROM: John Peverada, Parking Manager J.P.
DATE: May 15, 1997
RE: Proposed MMC Parking Garage and Office Building

I support the concept presented by Maine Medical Center to construct an office building and parking garage on the vacant lot at the corner of Congress and Forest Streets. In my opinion, aesthetically the proposed development will be an improvement to the area, however, there is a misconception. Whenever anyone hears about a parking garage associated with this project, they naturally assume that on-street parking in the area will be improved. The perception is that parking will not be an issue.

However, as I have previously stated, it is my opinion that the proposed parking garage associated with this project will not be large enough to handle the demand. In fact, after reading MMC's submission to the Planning Board, I believe that the figures quoted in the March, 1997 letter from Mr. Thomas Gorrill of DeLuca Hoffman, and the January 2, 1997 letter from Mr. Don McDowell support my assumptions. The following is my summary of the estimates provided by, or on behalf of, the hospital:

430	parking spaces proposed in the new garage
- 52+	spaces displaced from the existing lot (I'd say more)
- 228	spaces for the new building 4.6/1000 per Mr. Gorrill's letter
- 200+	spaces for vehicles relocated from the Gateway Shuttle, per Mr. McDowell (I'd say more)
- 27+/-	spaces on-street lost due to the proposed left turn lane on Congress St.
- 75	space shortfall

Correct me if you think that the above analysis is wrong, but I believe that everyone should be aware of this situation. Additional parking is needed for MMC visitors, patients and employees. Presently, the Bramhall lot is overflowing, with several cars stacked on the street waiting to get in to the lot on a regular basis. The Western Prom neighbors are complaining about on-street parking as are "customers of the hospital". I believe that unless the proposed garage at Forest and Congress Streets is enlarged, we will be duplicating the current problems at Bramhall St. / Western Prom in this neighborhood. The new garage should be larger, or the office building made much smaller.

If MMC proposes to offset the demand for parking by shuttling employees from an off-site lot, then they should present the City with a long-term lease, or verification of ownership of the lot. They should also assure the City that their employees will not be parking on the streets.

Finally, I quickly looked at the plans, and did not see a snow gate on the roof. How do they plan to dump and remove snow?

Please pass this memo on to the Planning Board and Council.

cc: Bob Ganley, City Manager
Joe Gray, Director of Planning
Alex Jaegerman, Chief Planner
Gloria Thomas, Department Head
Bill Bray, Deputy Director, Public Works

5-14M2.WPS

17 MAR 97

Portland Planning Board Members

I am writing to suggest that a greenspace be incorporated into the design of the proposed Maine Medical Center parking garage/office complex along Forest & Boyington Streets. Such a space could function to meet three basic needs of the residents [my neighbors] in the adjoining neighborhood. These needs are as follows: oxygen, preservation of property values, and reducing increased water run-off.

First, oxygen: a greenspace w/ trees would create a biological barrier to ensure that residents are not breathing auto fumes straight from auto exhaust pipes. It would help meet the most basic human need, oxygen. By the nature of their job, I'm sure that MMC would be pleased to help maintain this need.

Second, maintaining property values: this

need could be established should the current property owners be able to continue maintaining their residential properties as residential. A greenspace with tall trees would create a transitional space to better serve the separate functions of two separate zones.

Finally, water run-off: the increase of surface area to be asphalted will result an increase of water run-off. How is this to be handled? Environmental design incorporates greenspace to absorb excess run-off. This results in less water and pollution flowing directly into the drainage system and along the road. Having seen three accidents on Forest St. this past (icy) winter, I am concerned that more water run-off does not flow down the street - endangering more lives & property.

Well, that is about it. I'm realistic enough to know that the property is there it is and that it will be developed one way or another. However, as a resident of the neighborhood who has both lived and worked in the neighborhood for the past five years, I do desire that development be done right. If done properly, the MMC parking garage/office complex could be an exciting design incorporating the needs of multiple parties. Please respect the needs of my neighbors as well as the needs of Maine Medical Center.

Sincerely,

John R. Rancourt

JOHN R. RANCOURT
260 Park Ave, Apt 8
Portland, ME 04102
874-0898

January 13, 1997

Mr. Joseph E. Gray, Jr.
Director of Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Dear Sir:

As a taxpayer--albeit a modest one, a taxpayer nonetheless--who lives in a neighborhood zoned residential/commercial, I must comment about MMC's planned development of 883-903 Congress Street. I will try for brevity, although I have a lot to say.

At this point, I am very resistent to any further commercial development of my neighborhood. Over the past six years *all too much emphasis* has been placed on commercial development in this zone at the expense of its residential nature. Some of us fear that planners would like to see our homes turned into parking lots for the ballpark (a very intrusive element into a quiet neighborhood). I for one am bemused by the lack of concern for the stabilization and redevelopment of the housing stock in my neighborhood, especially given the housing shortage on the penninsula (ask a working class bloke or a student or a recent immigrant and they can tell you of enormous difficulties in finding a clean, safe home at a reasonable rent). There are lots of lovely buildings that might need a facelift on this end of town, but the new face on many Valley Street homes should suggest that this is still very much a neighborhood where "owner pride" is present.

As a taxpayer, I am concerned that while MMC does not pay taxes it has the city's ear simply because of its institutional force. I don't know that I'm too comfortable with that notion that a nonprofit institution can develop space for profitable motives. I realize that MMC by its very nature does much for the wellbeing of this community, but all of us who pay taxes know that we offset the tax loss of the nonprofits like MMC. I personally would like to see MMC give that lot to the city to be developed into a neighborhood park. Such an act would be perceived as doing something for my neighborhood besides take up more and more space, something nice. (The kids living here have already begun to use it as a sandlot ballpark in the summer months and as a sledding area now; they are going to be very disappointed once the bulldozers roll in.)

Although I am not such a Pollyanna that I expect that lot to become a park, I don't think we need another parking garage looming over us. And I don't think we need another set of medical buildings put up if very serious consideration has not been made about the impact this development could have on Mercy Hospital. After all, Mercy is a precious community asset. I do not want to see it go the way of Brighton Medical Center. As a taxpayer, I have a right to demand that you research this issue carefully. Have impact studies been made about potential pressures put on Mercy by the further capital development by MMC? If not, I would suggest that any change be tabled until Mercy's viability is assured.

Simply put, MMC is big enough. In this era of diminished resources it should learn to live within its current physcial constraints. It should strive to be a more efficient institution without eating up any more neighborhood space. After all,spatial scale is very important in any given area . . . MMC already looms large over my home. Any further development could become downright oppressive.

And finally, on a purely economic personal note, the large amount of construction over the past six years--not only the ballpark, but street replacement, etc--has begun to take their toll on the stability of my ceilings. However, I have been assured by my carpenter that five of the six plaster ceilings in my second floor apartment here at 28 Forest Street are in good, serviceable condition. One needs to be replaced, and I plan to do that. But if construction goes forward and bits of ceiling fall down in the other five rooms due to piling drivers or whatever vibrations may take place during construction, I would expect that MMC would pay the replacement costs for those ceilings. And I mean replacement of plaster ceilings--I love our home here on 28 Forest Street. We are proceeding slowly because we are working class, but we want to see it restored to its beauty of a hundred years ago.

I love what's left of the residential part of this end of town. I would hope to see a little support from city hall in retaining that ambience.

Sincerely,

Loraine Lowell

Loraine Lowell

ATTACHMENT 7

Bill and Kim Sproull of 502 Stevens Avenue are requesting a zoning change that would allow them to use one room of their single family cape for an antique/gifts/crafts shop. Please sign below if you support this idea. Thank you!

	NAME	ADDRESS	SIGNATURE
	Nancy L. Lentz	500 Stevens Ave	Nancy L. Lentz
2	[illegible]	Ron's Shoe Shop	[illegible]
3	[illegible]	500 Stevens Ave	STEPHEN P LENTZ
4	[illegible]	534 Stevens Ave	SUSAN [illegible]
5	Carroll E Ham	510 Stevens Ave	Carroll Ham
6	Colleen L. Fitzpatrick	530 Stevens Ave	Colleen L. Fitzpatrick
7	Patricia A. Howe	527 Stevens Ave	Patricia A. Howe
8	Douglas Howe	527 Stevens Ave	Portland ME
9	Brenda Coolidge	" "	Port ME
10	Kym Dakin	519 Stevens Ave	Portland, ME
11	Lorie Phillips	511 Stevens Ave.	Lorie Phillips
12	Jennifer Holmes	515 Stevens Ave	Jennifer Holmes
13	Ronald Connolly	202-B Pleasant Ave	[illegible]
14	Dawn Carrigan	411 Stevens Ave	[illegible]
15	Kathleen Winter	399 Stevens Ave Ptld	Kathleen Winter
16	Rebecca Schnell	397 Stevens Ave Ptd	Rebecca Schnell
17	Rita Lesniak	395 Stevens Ptld.	Rita Lesniak
18	Francis Circhen	365 Stevens	Francis Circhen
19	Laura Casparius	353 Stevens Ave	Laura Casparius
20	Tina Schelling	346 Stevens Ave	Tina Schelling
21	Annette Conliss	354 Steven's Ave	Annette Conliss
22	Michael Gillogly	488 Stevens Ave	[illegible]
23	Thomas J Athearn	444 Stevens Ave	[illegible]
24	[illegible]	10 CROSBY ST APT B	CHRIS BERNAZZANI
25	Bill Denstrom	11 Crosby St	Bill Denstrom
26	[illegible]	20 Crosby St	[illegible]
27	Lynn Frist Smith	28 Crosby St.	Lynn Frist Smith

	NAME (PRINT)	ADDRESS	SIGNATURE
28	Stewart Smith	28 Crosby St. Portland Me 04103	207-772-0911
29	Mary G. Stokes	16 New St. Portland, ME. 04103	207-774-5356
	Lisa Pinette	131 Leland St	Lisa Pinette
31	Bruce Kolpac	119 Leland	
32	DAVID M Wellman	118 Leland St	
33	Thomas DeLuca Jr	11 LEONARD ST	Thomas DeLuca Jr
34	Jan Stanton	14 Leonard St.	Jan Stanton
35	Joseph P McDonough	14 Leonard St	Joseph P McDonough
36	Carrie A. Aube	18 Leonard ST. Pltd	Carrie A. Aube
37	TERRI PETNOV	20 LEONARD ST. PORTLAND	Terri L. Petnov
38	Robert Scritchfield	37 Leonard St Portland	ROBERT SCRITCHFIELD
39	Muriel R. McKenney	44 Leonard ST, Port.	Muriel R. McKenney
40	Cheryl Knox	49 Richardson St.	
41	JOANNE CROSS	43 Richardson ST.	Joanne Cross
	Chi Hwa Chong	44 Richardson St	Chi Chong
43	James Wisby	34 Richardson St	James Wisby
44	Laura Haney	29 Richardson St.	
45	Betsy Hutchins	19 Richardson St	Betsy Hutchins
46	Philis Legendre	12 Richardson St.	Philis O Legendre
47	Ken Wakefield	53 Brentwood St	
48	Suzanne Hubner	59 Brentwood	Suzanne Hubner
49	[illegible]	59 Brentwood St	[illegible]
50	Al Hobson	66 BRENTWOOD ST	[illegible]
51	Julie Criscitiello	68 Brentwood St.	Julie M. Criscitiello
52	Michelle MARKS	75 BRENTWOOD ST.	Michelle A. Marks
53	DONALD KENISTON	77 BRENTWOOD ST	Donald G Keniston
5	Linda Gabliner	74 BRENTWOOD ST	Linda Gabliner
55	Jackie Martin	109 Brentwood ST	Jackie Martin
56	Michelle Mcquin	86 Brentwood St.	Michelle McQuin

Portland, Me.

	NAME (PRINT)	ADDRESS	SIGNATURE
57	Clifford Doughty	100 Brentwood St	Clifford D Doughty
58	Carol Hogan	101 Brentwood St	Carol Hogan
59	LEN STEPHENS.	118 BRENTWOOD ST.	Leonard Stephens
60	ROBERTA A. REID	68 BEST ST.	Roberta A. Reid
61	Gloria Jones	18 Brentwood ST.	Gloria M. Jones
62	Geraldine Peddle	30 Brentwood St.	Geraldine Peddle
63	Doris Boisvert	11 Alba St.	Doris Boisvert
64	Holly Pappaconstantine	15 Alba St	Holly Pappaconstantine
65	Gilmby Howe	27 Alba St.	Gilmby Howe
66	Bonnie Smith	58 Alba St	Bonnie Smith
67	Rhoda B Strout	63 Alba St.	Rhoda B. Strout
68	Lorrie Mays	73 Alba St.	Lorrie Mays Lorrie Mays
69	Martha Concannon	125 CLINTON ST.	MARTHA CONCANNON
70	Peter Paszmann	169 Clinton St.	Peter D. Pa
71	Kathy Maxsimic	161 Clinton St	Kathy Maxsimic
72	Debbie Ciden-Clark	135 Clinton St.	D. J. Ciden-Clark
73	Philip Levine	133 B Clinton St	Philip Levine
74	Jim Tetreault	133 A Clinton St	Jim Tetreault
75	Evelyn Hanneman	90 Hartley St.	Evelyn Hanneman
76	Katie Kinnerney	53 Hartley	K Kinnerney
77	Barbara Bell	29 Florence St	Barbara Bell
78	Robert Gallant	114 Hartley ST	ROBERT GALLANT
79	Ben Kral	165 Hartley St	Ben Kral
80	Senja St. John	167 Hartley St	Senja St. John
81	JADINE R. O'BRIEN	194 PLEASANT AVE	Jadine R. O'Brien
82	Bob DEMERS	188 PLEASANT AVE	[illegible]
83	Chris Jordan	185 Pleasant Ave	[illegible]
84	R.T. ANDERSON	179 PLEASANT AVE.	[illegible]
85	Beth Churoman-Crocker	158 Pleasant Ave	Beth Churoman Crocker

86	Alice Gray	33 Brentwood St.	Alice K. Gray
87	Reg Joyce	59 Brentwood St	Reg Joyce
8-	Jill Duente	14 Alba Street	Jill Duente
89	Patrick G. McKenney	34 Alba St.	Patrick G. McKenney
90	Jim S Kinner	42 ALBA ST	[illegible]
91	Donna Skillin	54 Alba St.	Donna Skillin
92	Robert Hunt	66 Alba St.	Robert E. Hunt
93	Linda Prescott	70 Alba St	Linda Prescott
94	ROSE HANSON	72 ALBA ST.	Rose Hanson
95	BARBARA A. BUTTRICK	168 Clinton St	Barbara Buttrick
96	Doris C McAfee	158 Clinton St	[illegible]
97	Pat Solotaire	152 Clinton St.	Pat Solotaire
98	C. Stanford Levy	146 Clinton St.	C. Stanford Levy
99	Michelle Davis	142 Clinton St.	Michelle R Davis
10-	Helen G. Peters	136 Clinton St	Helen G. Peters
101	Marti Corrigan	130 Clinton St	Marti Corrigan
102	Elizabeth Delouncey	124 Clinton St	Elizabeth Delouncey
103	Joseph R D Conroy	124 Clinton St	[illegible]
104	Barbara L Publicover	82 Hartley St	Barbara L Publicover
105	Linda Russell	76 Hartley St	Linda Russell
106	Robert B Lightfoot	33 Florence St	Robert B Lightfoot
107	Susan Walker	33 Florence	Susan Walker
108	Doris Pike	84 Clinton St	Doris Pike
109	Mary Charpagne	96 Clinton St	
110	Lynne L. Moulton	102 Clinton St	Lynne L. Moulton
111	Christina Corbeau	126 Hartley	Christina Corbeau
11	Paula Henckel	134 HARTLEY ST.	PAULA HENCKEL
113	ALICE L. ABBOTT	146 Hartley St.	Alice L. Abbott
114	Betsey Lavway	162 Hartley St	Betsey Lavway

Re: 502-504 Stevens Ave. 4/29/97
Portland ME 04103

Dear Mr. Gray,

I am the owner of a building at 500 Stevens Ave in Portland. We also own a business which is located in my building. I am writing to express my support of the request of William and Kimberly Sproull of 502 Stevens Ave for a zone change from R-5 to B-1b at their address.

It would seem to me that if one side of Stevens Ave is zoned for business use, it would not be unreasonable to feel that the other side of Stevens Ave might also be zoned for some business uses. Hartley St. is the zone boundary on the odd numbered side of the Ave. It would seem that Lincoln Middle School might be an appropriate boundary on the even numbered side.

over please

Furthermore, if one considers the number of variances granted routinely by the City, this is surely a reasonable request.

Thank you for your consideration of this request and for your attention to my thoughts on it.

Sincerely.

Nancy L Lentz

Mrs. Nancy Lentz
500 Stevens Ave.
Portland, ME 04103-2611

Hallmark
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Attachment 10

May 19, 1997

Portland Planning Dept.
Attn: Candy Talbot
389 Congress St.
Portland ME 04101

Re: 500 Stevens Ave

Dear Ms. Talbot,

Please accept this as my request to include my property, located at 500 Stevens Ave in Portland and housing Roy's Shoe Shop Inc and my home, in the proposed zone change for 502 Stevens Ave. We are, at present, under a zoning exception and have been for

Some 60 Years. This would bring us into a compliant zone

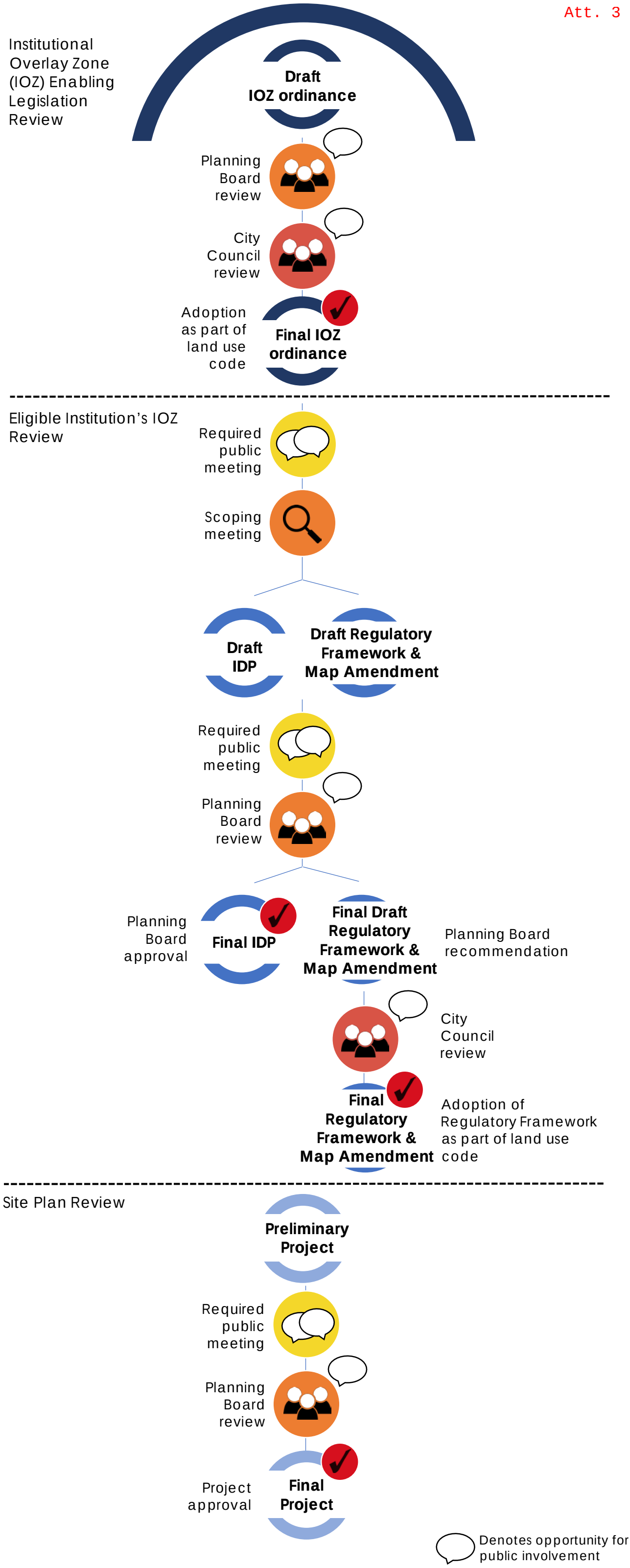
I thank you for your assistance.

Sincerely

Nancy L. Lentz

Nancy L. Lentz
60 Stevens Ave
Portland ME 04103
Phone 207-774-0443

Att. 3


Institutional Overlay Zone (IOZ) Enabling Legislation Review
Draft IOZ ordinance
Planning Board review
City Council review
Adoption as part of land use code
Final IOZ ordinance
Eligible Institution's IOZ Review
Required public meeting
Scoping meeting
Draft IDP
Draft Regulatory Framework & Map Amendment
Required public meeting
Planning Board review
Planning Board approval
Final IDP
Final Draft Regulatory Framework & Map Amendment
Planning Board recommendation
City Council review
Final Regulatory Framework & Map Amendment
Adoption of Regulatory Framework as part of land use code
Site Plan Review
Preliminary Project
Required public meeting
Planning Board review
Project approval
Final Project
Denotes opportunity for public involvement

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Fwd: MMC Expansion notes for the Planning Board meeting Tuesday night

Jean Fraser <jf@portlandmaine.gov> Tue, Dec 6, 2016 at 12:45 PM
To: "Donaldson, Helen" <hcd@portlandmaine.gov>

for inclusion in the PB Memo on IOZ

---------- Forwarded message ----------
From: **Zack Barowitz** <zbarowitz@gmail.com>
Date: Mon, Dec 5, 2016 at 7:01 AM
Subject: MMC Expansion notes for the Planning Board meeting Tuesday night
To: jf@portlandmaine.gov
Cc: Tuck O'Brien <tuckobrien@me.com>, Damon Yakovleff <Damon.yakovleff@gmail.com>, Nikki Anderson <n.annetteanderson@gmail.com>, Norman Maze <nmaze@shalomhouseinc.org>, Emma Holder <pna@parksideneighborhood.org>, Anne Pringle <oldmayor@maine.rr.com>, Ian Jacob <iancasperjacob@gmail.com>

Jean,
Please review the following points for the Planning Board to consider in conjunction with the proposal to expand Maine Medical Center:

1. Implementation of the Libbytown traffic study, particularly the **restoration of two-way traffic on Congress Street between 295 and St. John Street**. Currently, the one-way streets are serving to divert through traffic *into* downtown. The current traffic alignment simply would not work. What's more, ambulances get stuck waiting for trains (this is a common enough occurrence that I was able to snap a picture--see attached). Thus, MMC needs to get on board with the traffic study recommendations for the expansion plan to work.

2. I wrote a column for the *Phoenix* outlining how the current agglomeration of **Maine Medical is blighting the surrounding streets and neighborhoods**. Were expansion to continue in the same manner the blight would undoubtedly spread and any economic development would have to be counter-balanced by decrease in value of abutting areas (e.g; tax revenue). You can find the article below or link to it here. My suggestions:
- Improve the streetscape for pedestrians and develop vibrant commercial spaces (24-hour cafe, pharmacy, restaurant, beauty salon) on Congress Street around the new entrance.
- Set backs to create a human-scale feel
- Buildings overhanging sidewalks (like in the wild west, to provide protection from weather)
- Heated sidewalks (currently they salt the heck out of the area with is costly and environmentally destructive)

3. Convert the surface parking lot on Brackett/Vaughn be turned into **housing**.

I have copied members of adjacent neighborhood association on this message.

Thanks,
Zack

Sick Building: The Maine Medical Center's $512,000,000 Expansion

Maine Medical Center dug through its couch cushions and came up with $512 million to spend on an expansion of its Portland campus. Although the plan doesn't add any new beds, it does call for 128 new rooms — which the hospital must have in order to meet new demands of patient care and stay competitive in a growing industry.

In addition to being a renowned hospital, Maine Medical Center is one of the largest employers in the state. So when it says it wants to build, it's fairly easy for officials to respond "how high?"

MMC's proposed expansion will create hundreds of jobs in the health care, construction and IT sectors. But those jobs come at a cost, and those that pay are unlikely to reap many benefits; a large hospital's effect on a neighborhood can be akin to having a cement block dropped on a flower pot.

So why is this?

Hospitals are notoriously among the most difficult types of buildings to design. The sheer volume of people, technology and movement, coupled with the turnover of all of the above, make their containment nearly impossible. Throw in the challenge of creating a building that is both sterile and uplifting, and it's enough to drive the most talented designer to review RFPs for wastewatertreatment plants.

Given the difficulties and contingencies of designing a hospital, it's little wonder that their exteriors often appear an afterthought. Situated high upon the Western Promenade, Maine Med's current configuration is an undistinguished agglomeration of stark Modernist edifices and brutalist parking structures crowded around a (somewhat gloomy) original 1874 structure. Fortress-like

facades have rendered blight beyond the castle walls to the boundary streets below. Gilman, Congress, Crescent, Wescott, Bramhall and Forest streets are all fairly run-down and have been for decades despite their proximity to some of the most valuable real estate in Maine.

Portland-area residents have every reason to be concerned with the planned Maine Med expansion; the shadows will loom longer, the winds will whip colder, parking garages will become larger, and the traffic will grow denser — adding to the spread of decay.

Ironically, the westward roll of commercial and residential development along Congress Street from Longfellow Square to Thompson's Point is hot, with hundreds of proposed housing units, restaurants and (of course) breweries. The break in the path is smack in the area designated for the bulk of the expansion. The quarter-mile stretch of Congress Street from Salvage BBQ to Bramhall Square has just two commercial spaces (La Bodega Latina and Portland Glass), not including the permanently "unfinished" storefronts in the MMC parking garage. The blight is attributable to a monotonous pedestrian experience: a steep hill, fast traffic and bleak streetscape of retaining walls and parking garages. It should come as little consolation that a recent beautification effort included hanging banners declaring competency in "Urology," "Gynecology" and "Cancer."

Were this projected expansion slated for an isolated green expanse (such as the MMC Scarborough campus), the peripheral pedestrian experience would be of little consequence. But in a dense urban environment, great care must be taken to scale and form but also to use.
Far from being a monument that sucks in automobiles, the hospital necessarily should learn how to interact with the street, starting with an improved pedestrian experience that heals the neighborhoods on its borders. Street-level commercial development — visitors' cafe, gift shop, pharmacy, restaurant and even a bookstore — will not only better serve hospital customers but make for a healthy bottom line, both for the institution and the city as a whole.

--
207-838-6120
917-696-5649
ZacharyBarowitz.com

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--
Jean Fraser, Planner
City of Portland
874 8728

IMG_0947.JPG
409K

PC2

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notice From City of Portland Regarding - Vicinity of Maine Medical Center Questions

1 message

Karen Snyder <karsny@yahoo.com> Wed, Dec 7, 2016 at 2:39 PM
Reply-To: Karen Snyder <karsny@yahoo.com>
To: "jf@portlandmaine.gov" <jf@portlandmaine.gov>

Jean,

I have yet again got another notice of more development that affects me in the City of Portland.

This unnecessary yet huge Maine Medical Center project, what streets will this proposed development actually be on and how far and up does it go?

What exactly is an IOZ ordinance and does it actually protect local residents or yet once again allow developers to trample on the quality of life of residents?

Regards,

Property Owner on Gilman St.
K. Snyder

the Saint John Valley Neighborhood Association

Concerns regarding MMC proposed expansion

Project announcement

- Lack of transparency
- MMC is in breach of the current contract zone agreement (CRA) by failing to apprise members of the MMC Neighborhood Council of hospital development plans as mandated by the contract.
- How do we enforce the rules going forward?

Project design

- What will the new structures look like?
- At what point and in what forum will neighborhood input be considered relative to design, location, size and scope of the project?
- Neighborhood integration is important especially height
- How will traffic be affected?
- What will happen to current green space?
- Are there plans for streetscapes?

Proposed 13 story parking structure

- It's too big
- It doesn't compliment the existing buildings in the neighborhood
- Increase in traffic (How will this be managed?)
- Increased pollution
- Increased noise levels
- Reduced property values
- Contrary to neighborhood goals of enhanced livability and walkability
- Negative effect on sunlight and wind patterns
- Why haven't alternatives to this plan been proposed?
- Lack of security in current parking structures which leads to…
- Prostitution
- Drug use and public drinking
- Grafitti
- Suicide attempts
- Littering

Construction management

- How will the demolition of current structures be performed?
- How will demolition effect local residencies and businesses?
- What are the phases of construction? and How long will each phase of construction last?
- How will construction effect local residencies and businesses?
- How will any damage to local residencies and businesses be handled? (Remember the crane that toppled in 2006 crushing a house whilst the new MMC maternity wing was being built?)

- Baseline reads on our properties?
- Where will construction materials be stored?
- How will construction impact street parking?
- Where will construction workers park?
- What are the guidelines for acceptable noise levels during construction?
- Are there any provisions for loss of income to local businesses? and loss of rent due to tenants moving on?

Future planning

- What is MMC's master plan?
- They have already told us that they will need more parking and more beds in the future. What is their plan to accomplish this?

moses sabina <mosessabina@yahoo.com>
Nov 22 (7 days ago)

to Garry, Tuck, stjohnvalleyne., Helen, me
Please add impact to resident parking to that list. As of now, parking is at a premium, and next to impossible to find a spot when there is no parking on one side of the street. Happy Thanksgiving! -Moses

[12.13.16- St John Valley Neighborhood Association confirmed as public comment for 12.13.2016 PB Workshop]

PC4

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Hello Jean, If possible pls incude my memo in tonight's Planning Board workshop. Thank you . Sarah Martin

Sarah Martin <BOCCafe@hotmail.com> Tue, Dec 13, 2016 at 2:30 PM
To: "jf@portlandmaine.gov" <jf@portlandmaine.gov>

Memorandum

To: City of Portland Planning Board

From: Sarah Martin Valley Street, Portland Maine

Re: MMC Expansion

Date December 13, 2016

As an owner and occupant of a two family 1880's era home, I have great concern over the size, the scope and the likely negative impacts of Maine Medical's proposed expansion.

During one of the recent construction projects the constant driving of pilings, disturbed not only our tenants quiet enjoyment but the actual plaster in our home. Additional negative experiences included the use of surface lots in our neighborhood as trash covered construction dumps wrapped in broken and bent chain link often with torn, flapping, often vandalized green mesh. The precious few parking spots available to residents in the neighborhood were diminished by contracted workers and we all had the overall feeling that we were living on a construction job site for many months at a time.

While I agree that there may be some added value to the neighborhood by relocating the main entrance to Congress Street, the mere consideration of a thirteen story parking structure abutting our R6 neighborhood seems completely out of touch with the hospital's spoken commitment to being “good neighbors”.

Thirteen stories? I'm sure that the planning board is aware of this but consider for a moment a comparison in size.

The Holiday Inn on Spring Street-Eleven stories.

Peoples United Bank next to the library-Eleven stories.

Deering Pavillion-Eleven stories.

Portland House Condominiums -Eleven stories.

The Westin Portland Harborview(the old Eastland)-Thirteen stories

One City Center-Thirteen stories.

In fact there would only be three buildings in the entire city taller than this proposed structure, Franklin Towers, The Time and Temp building and Back Bay Towers.

I completely understand that the useful life of the existing employee garage is at its end. However, to expect to move 1,280 parking spots across Gilman street into a thirteen story parking structure higher than the treetops and towering over our buildings on Valley, Gilman and A Streets is just too much.

If we estimate a hundred cars per level, then why not dilute the impact a tower would have by relocating spots to other locations? The South lot on Bracket and Vaughn currently holds 400 cars. If the hospital were to go up one deck high in that lot, we have just reduced the tower to nine stories. Two levels brings the Gilman block proposal down to five!

I think the hospital owns the lot known as the Classic Eye lot on the one way section of Congress across from the jail entrance...about a hundred cars. How about developing a couple of stories of parking there? Two levels and we are down to seven stories on the Gilman lot. Another thought would be to lift the constraints of the current Contract zone and allow the hospital to purchase the properties on either side of their 887 Congress Street property to develop office/retail and parking in a structure similar in design to their surrounding buildings. This too would make more sense than pushing the development directly into the shadow of the residential piece(peace) of our neighborhood.

---

pb letter sarah.odt
29K

December 11, 2016

To the Portland Planning Board:

We are property owners of 8 A Street and co-owners of two businesses in the area effected by MMC's proposed expansion. We are writing about the impact of Maine Medical Center's construction plans within our neighborhood. We ask for your serious consideration to the many concerns we have about this project.

Parking Garage -
We oppose any changes to the MMC's zoning that would allow building heights to increase, especially as it pertains to the proposed parking garage on the Gilman Street lot. Our home, which we bought in 2006 and have spent considerable time and money renovating, is directly across the street from this lot. The proposed height of this garage would dwarf the residential buildings adjacent to it, encourage more traffic, and detract from the livability of the neighborhood. We feel certain that it will reduce our property values, increase pollution from car exhaust, become a hot spot for criminal activity and encourage further economic decline within the neighborhood.

One of the recommendations from the 2008 Peninsula Traffic Study was to enact parking policies that will decrease traffic volumes and “construct and promote remote parking, connected to downtown by frequent, reliable transit”. Where is MMC's progressive initiative to encourage remote parking and ride-sharing for it's employees? Rather than working with the city to reduce traffic congestion, MMC plans to build a larger garage which will only guarantee an increase in congestion on Portland's roadways. The more parking is made available for MMC's employees, the more its employees will drive into our neighborhood every day. We as residents would like to encourage a new plan that would make use of MMC's Scarborough campus or another remote commuter lot to reduce the congestion we witness every day in this neighborhood. At the very least, we ask that MMC build a replacement garage on the current location, set into the hillside, or increase the size of the existing garage on Forest Street. There are multiple options available that will avoid placing a giant parking garage the center of the neighborhood.

MMC Main Entrance -
We have been working with our neighbors for the last several years to make the neighborhood more livable. We have a vision which includes walkability, traffic calming, residential development, green spaces, and crime reduction. We see the neighborhood as being a distinct area of Portland with it's own appealing character and attractions, including the Inn at St. John, Sea Dogs, Salvage BBQ, and Pizza Villa. Having the main entrance to MMC located here could introduce many new challenges which would run contrary to our vision. There are many questions that will need to be answered before we can support the proposed location for the main entrance. For example, what will the hospital do about visitors and employees on the public streets smoking, littering and using parking spots that would ordinarily be available to residents without driveways? What will the structure look like and will it be in keeping with the scale of surrounding buildings? What will the hospital do to ensure minimal disruption to residents and business owners during the construction phase? How will green spaces be integrated into the design? Whatever plan comes to pass, we encourage MMC to be as transparent as possible and consider the goals of the neighbors who live and work in this neighborhood.

Sincerely,

Jenny MacKenzie and Garry Bowcott
8 A Street

PC6

1/10/2017

To the Planning Board,
After reviewing the Institutional development plan presented on 1/10/17, we have noticed some areas of concern regarding the proposed parking structure on the Gilman street block.

- A 13 story parking structure will stand out like a sore thumb in a residential neighborhood where the tallest building is 4 stories.
- There is no proposal for a setback to integrate the parking structure with the surrounding businesses and residencies.
- If fig 4.2 on page 41 is correct and the trend of employees utilizing alternative forms of transport continues then MMC will see a reduction in parking needs moving forward. Will we end up with a parking structure that is obsolete and cannot be used for any other purpose? Why are they proposing a larger parking structure if the demand for parking is decreasing over time?
- MMC has not offered any other solutions to their parking needs. There are numerous options available to them such as construction on the Vaughn Street surface lot, additional levels on the Forest Street lot and footprint expansion. All of these options are supported by the Saint John Valley Neighborhood Association but for some reason MMC refuses to acknowledge them as options.
- As the city is obviously in a state of rapid development, we need to start making wise decisions regarding parking and it's integration with neighborhoods. If we allow MMC to construct this parking behemoth we are destroying the livability of a neighborhood via pollution, traffic congestion, crime, decreased sunlight and street level interaction.

Please take these concerns into account as you consider MMC's institutional development plan.

Sincerely,

Garry Bowcott
8 A Street
Portland, ME
04102

PC7

1.9.2017

To whom it may concern,
I am writing to you about the proposed MMC construction project. As a business owner at 919 Congress St, Salvage BBQ I have concerns regarding how this will impact my business. Right now we have tremendous sunlight that illuminates the restaurant from the South and west. Increasing building heights in the neighborhood will block this light and impact our business negatively. We have worked hard to make our business a success in a neighborhood that was neglected and not seen as a viable business center. There was a similar attitude in Longfellow square when we opened Local 188 in 1999 and now Longfellow Square is a bustling mecca of restaurants and bars. I would like to see the same trend continue down Congress Street but the proliferation of institutional buildings impedes the type of pedestrian activity necessary to create such an environment.
I am also concerned about my business being disrupted during a lengthy construction phase. What are the plans for demolition of the existing buildings? How will traffic be impacted? How will pedestrian access be impacted? How will noise levels be managed?

Jay Villani
Salvage BBQ
919 Congress St.

My name is Tim McNamara and I live at 251 Valley Street.

I've read through the draft IDP submitted by Maine Med and have several questions relative to the rhetoric and the data offered in Chapter Four-Parking and Transportation.

My understanding is that the hospital needs to substantiate their request for change of zoning by proving need. I believe that the Chapter Four is an attempt to show that the hospital is doing all they can to reduce the number of vehicles on campus yet prove they still have the need to park 1,100 employees on Gilman Street. I write to challenge the positions taken by the hospital in Chapter Four.

At a December 6th meeting of neighbors, senior hospital management and City staff, we discussed ideas of alternatives or incentives offered by the hospital to employees to reduce the number of single passenger trips to and from campus. Our thought was ...fewer single passenger trips-fewer spots required in the new garage. Minutes from that meeting, recorded by hospital staff, reflect that Maine Med President Rich Peterson "*acknowledged that thought will be given to trying to provide additional incentives to Maine Med employees to car pool, bike or use other means of alternative transportation*". ...it was even discussed as to whether we are asking the hospital to alter societal norms embedded around car ownership and use or to attempt to change our behaviors.

At that meeting, senior hospital management made no reference to any Alternative Transportation Plan in place and certainly no mention of the "Get on Board" program. "Get on Board" is the program that Chapter Four hails as a "*focus of institutional policy.*" and "*an integral part of the fabric and culture of MMC*" (See pages 39/41of Draft IDP)

In the 2005 CRA between Maine Med and the City, Chapter 18 requires that "a*n analysis of effectiveness and functioning of the Alternative Transportation Plan shall be provided* (by the hospital)*to the City Council's Transportation Committee on an annual basis.* " I've reviewed agendas and minutes from that committee dating back to 2013.
Nowhere can I find a reference to a hospital report on the functioning or effectiveness of any ATP.

As residents who will be directly impacted by a 13 story garage plopped down in the middle of our neighborhood, we have asked the right questions and made the right suggestions relative to reducing single passenger trips without hearing from the hospital of any plan in place to achieve such. Then out of nowhere, Chapter Four of the IDP asks us to believe that in 2015 the hospital has "incentivized" 35 % of their employees, up from 14% in 2008, to commute to work by means of something other than a single occupancy vehicle trip?

From 14% to 35% in seven years? Pretty spectacular. Where did these numbers come from? If we are to believe these numbers, then can we anticipate that in five years that number will be 50%? then 65% ten years from today?

The problem is we can't believe these numbers.

In 2015 they claim that 1,571 employees participated in the program. They claim that that amounted to 35% of their employees. That would be true if the hospital employed 4,488 people. The Maine Med Website claims that they employ more than 6,000 people. So the real number is closer to 25% participation in the program. The percentages are off from the first year of their reporting. (2008, 648 participants reflected as 14% of all employees. More like 10%)

The number of employees they claim to be riding their bikes to work in 2015 is 229. Yet they only have the capacity to store 184 bikes.

The number of employees using “ride share” in 2015 is 1, 021. Let's say every one of those ride-share participants carpooled to work with two other people, (unlikely as that may be) that would mean according to Chapter Four, that 340 cars would “*be given access to preferred parking in a gated, ID card access only area of the Employee garage that connects directly to the main lobby on the ground floor of the hospital*.” 340 Cars? That's well more than a quarter of the total spots available in the current garage and would be physically impossible to accomplish.

The bottom line on Chapter Four is that the numbers and the stories just don't add up. I would encourage the Planning Board to kick the entire Chapter back to the hospital for a complete overhaul and to demand validation of their data so an accurate and legitimate parking and transportation baseline can be established .

Thank you.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Re: PB Workshop 1-10-2017 Institutional Overlay Zone (IOZ)/MMC Institutional Development Plan

1 message

moses sabina <mosessabina@yahoo.com> Tue, Jan 10, 2017 at 12:04 PM
Reply-To: moses sabina <mosessabina@yahoo.com>
To: Jean Fraser <jf@portlandmaine.gov>

To the Portland Planning Board:

My name is Moses Sabina, I am an owner/resident at 4 Gilman Street. I have attended MMC Neighborhood Council meetings quarterly since the inception of the council. The purpose of that council is to keep the neighbors of MMC apprised of any and all MMC developments.

In the case of these development plans, the council members were made aware of the plans three days before they were printed in the Press Herald. Neighbors were given no opportunity to be involved in a constructive dialogue to help MMC develop theirs needs with minimal impact, or even some improvement to the surrounding neighborhoods. Unfortunately, this selfish "close to vest" behaviour is exactly why the neighborhood council was created in the first place, and why it is all the more mockery now that MMC has dismissed including neighborhood representatives in an important discussion which should have included all the options for addressing their parking needs.

I ask you to consider their blatant disregard for their neighbors when you review their plans for the thirteen story dark tower they want us to live next to. I ask that you not give any variance over the height restriction in the current zoning until all other options for parking have been thoroughly vetted, regardless of the cost to MMC to divide the parking between more than one location. Otherwise, it will be the neighbors suffering the the long term price of this development plan.

Respectfully,
Moses Sabina

From: Jean Fraser <jf@portlandmaine.gov>
To: "Fraser, Jean" <jf@portlandmaine.gov>
Sent: Friday, January 6, 2017 5:42 PM
Subject: PB Workshop 1-10-2017 Institutional Overlay Zone (IOZ)/MMC Institutional Development Plan

Hello

I am sending this e-mail to those who sent me written comments on the proposed IOZ zone and/or on the MMC plans for expansion back in December, or who have contacted me about the proposed IOZ ordinance.

MMC have requested a zone change in order to expand/modernize - and the new IOZ ordinance is the City's proposed process - with an aim to provide a clear, predictable growth management structure for institutions that would allow flexibility but also require proactive planning and a more transparent and defined mechanism for understanding and addressing community concerns. As currently drafted, only the main campuses of

Re: UNE

My name is Robert P. Fuller, a resident, taxpayer and owner of #37 College Street. With the possible exception of parking and traffic, it is doubtful that anything planned in the immediate vicinity of College Street would be an issue except to its property owners. But a concern of one should have the same weight as an issue for many.

Back in December 2011 one of the Vice Presidents said that UNE wanted to become more responsible. Hopefully that translated into going to be more responsible and that means to all of us. In theory and in practice leaders of organizations are supposed to reach out into the community and not allow any one subordinate to create an aversarial role with the neighbors. Does anybody want a repeat of the hoo-rah on the Biddeford campus about 15 years ago?

In a 2011 magazine interview, the president of UNE said that they were just about where they wanted to be in terms of size. A year later, as part of an application submission, UNE said that they had been unsuccessful in being able to squeeze any more parking on the main campus.

Based on those two statements, there should be no changes from my bound toward Ginn and McDougall Halls on the west or for at least 25 feet out from the #33-37 College Street north line. Finally, the north side of College Street itself and sidewalk would remain where they are now. This is the way it should be. Remember, the greatest material investment for most of us is our real property. This is true for myself and my sister at #33-35 College Street.

When you review for the overlay and master plan for UNE, do not forget us residents. When you review according to a set of standards, do the parts add up to a whole? Does it look sensible? How does it fit with the human condition? There is no good reason, with proper planning, that UNE and all its neighbors cannot peacefully coexist in the same surroundings.

Robert P. Fuller
January 5, 2017

Western Promenade Neighborhood Association
Comment to Planning Board re IOZ 1/10/17

Members of the Board, my name is Anne Pringle and I am commenting on the prosed IOZ framework on behalf of WPNA.

To echo David Eaton, I want to publicly thank MMC for agreeing to be the guinea pig for this new zoning concept and process. As some of you may know, there was a very contentious process when the Conditional Zone was approved. To date, this process and the dialogue has been much more open and we appreciate the early engagement.

Rather than comment on the specifics of the MMC IDP proposal, which will get a lot more scrutiny later and which I do think reflects the IDP framework, I want to comment on a few elements of the proposed IOZ framework:

First **institutional encroachment** has been a big issue in our neighborhood with two major institutions, MMC and Waynflete. The existing zoning protections, I think staff would agree, is inadequate as it gauges the impact of encroachment on a building-by-building basis, rather than on cumulate impact. The Waynflete IOZ recognizes this and precludes, I believe, school uses in buildings outside the zone boundary. So, the school cannot purchase or have donated a building outside the zone. To avoid institutional encroachment, WPNA believes the new IOZ should preclude intuitions from purchase or acceptance of donations of properties outside the proscribed zone, except for the sale of properties to free up funds for institutionl uses with the IOZ..

If an institution already owns property outside the IDP boundary, those properties should be identified and a plan, even a long-term plan, identified to relocate the institutional uses in those buildings to the IDZ area or a location outside a residential zone.

Second, it is recognized that these institutions have a major traffic and parking component. Since they each exist in already developed contexts, to a large extent

residential, significant and creative efforts should be made to reduce dangerous traffic impacts parking demand and assure that parking does not dominate the area and utilize land that might later be needed for institutional growth, leading to a subsequent request to expand the IDP boundaries.

Third, it has been suggested that MECA be included among institutions subject to the IOZ framework. With more residential housing downtown, the impact of MECA on its context should also be subject to the scrutiny that the proposed IOZ framework sets forth. Similarly, Waynflete should also be subject to the IOZ framework and process, should it at some point wish to revise its Overlay Zone.

Fourth, I have come to understand, through litigation, that purpose statement, no matter how helpful in understanding the basis for legislative action, have no legal import. In the proposed purpose statement I see some very good language that I believe should be pulled forward into the text to provide more explicit definition in the IOZ framework requirement, for example the reference to "carefully planned transitions"

Finally, there is no question that each of these institutions, including the two suggested to be added, are very valuable elements so our community. What the Board is seeking is to establish balance and predictability for both the institution and its neighborhood contact.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Public Comments on MMC Institutional Development Plan

1 message

toddmalexander@gmail.com <toddmalexander@gmail.com> Mon, Jan 16, 2017 at 6:54 PM
To: "jf@portlandmaine.gov" <jf@portlandmaine.gov>
Cc: "basak.alkan@perkinswill.com" <basak.alkan@perkinswill.com>, "Western Prom Neighborhood Association <oldmayor@maine.rr.com>" <oldmayor@maine.rr.com>

Jean: Comments on MMC's draft IDP;

Generally, I am supportive of the long-term plan to;

i) create an IOZ to govern future campus development

ii) shift development activity to the Congress Street corridor

iii) allow for greater density and/or building heights along the Congress Street corridor to accommodate the plan

Either as a condition of an IOZ and/or included as a provision within the IOZ, the city should consider requirements for MMC to address the following;

i) Real estate holdings in abutting residential districts that may not be located in the areas covered by the IOZ. More specifically, the city could require MMC to develop and implement a divestment plan for those non-core properties that most directly impact predominantly residential neighborhoods. Properties that could be addressed in that plan; 19 West Street, 112 West Street, 94 and 98 Chadwick, and 227 and 231 Western Promenade.

ii) Hospital vehicle traffic in the Western Prom neighborhood generated from users of the South Parking Lot. One possible solution is to create an exit-only ramp/lane from the South Lot onto Vaughn street (far southeast corner of

lot). This will eliminate a high volume of hospital vehicle traffic on Chadwick and West Streets.

iii) Inclusion of residential uses in any future redevelopment plans for the South Lot. This parcel serves as the natural transition from institutional/commercial uses located to the north and west to residential uses to the south and east. Any future development in this location should further reinforce and compliment this transition. The size of the lot allows for an orderly change in property types from commercial/institutional…to mixed use…to residential. The residential development requirement could be structured to directly complement MMC's operations; housing for residents and staff, extended stay housing for visitors, etc…. One way to regulate a requirement for residential uses for the South Lot is through trigger/performance mechanisms, such as; for every X thousands of SF of non-residential space proposed for this lot, MMC is required to create X units of housing.

Respectfully,

Todd M. Alexander

3 Carroll Street

Sent from Mail for Windows 10

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

CORRECTION - MMC Neighborhood Meeting Held on January 18, 2017

1 message

Karen Snyder <karsny@yahoo.com> Thu, Jan 26, 2017 at 5:01 PM
Reply-To: Karen Snyder <karsny@yahoo.com>
To: "Deborah S. Boroyan" <BOROYD@mmc.org>, Jean Fraser <jf@portlandmaine.gov>
Cc: Saint John Valley Neighborhood Association <sjvna1@gmail.com>

There is a correction in point 2 (two) below. I added a sentence to the end of the point. "These window replacements should be paid for by MMC."

Karen

From: Karen Snyder <karsny@yahoo.com>
To: Deborah S. Boroyan <BOROYD@mmc.org>; Jean Fraser <jf@portlandmaine.gov>
Cc: Saint John Valley Neighborhood Association <sjvna1@gmail.com>
Sent: Thursday, January 26, 2017 3:02 PM
Subject: Re: MMC Neighborhood Meeting Held on January 18, 2017

Hi Deborah and Jean,

During this MMC neighborhood meeting, it was said that the construction would span a 5 year time frame. This is not sustainable for the health of property owners and tenants to live through 5 years of construction on Gilman St and Valley St.

As a property owner on Gilman street, the proposed MMC's development proposal is causing quite a lot of stress and concerns amongst the local residents.

Depending on what the final agreed proposal and what is acceptable to property owners, the below needs to be considered for this development proposal to ease the stress, health concerns, and quality of life impact of any construction around Gilman and Valley St.

1) Construction noise should only allowed from Monday to Friday between 9am and 5pm. There should be NO construction on weekends. Residents need the weekend to decompress and destress. If not, the health and quality of life of residents will be compromised.

2) Prior to construction, all houses on Gilman and Valley street, the windows are to be replaced with soundproof windows. If the parking garage is made up of concrete, this means alot of noise and debris will be generated in the air. The properties around this area must not be comprised by hazardous abatement and noise. These window replacements should be paid for by MMC.

3) Because MMC employees use the Gilman street sidewalk constantly, for safety concerns, MMC needs to provide sidewalk lighting on this street.

4) The construction vehicles should be prohibited from parking on Gilman or Valley Street. Construction workers should be required to park in an off site parking lot and bused in just like MMC employees. The parking of construction vehicles is a nuisance for property owners because I have all ready had to experience this for the last 2 years on the East End.

5) There are concerns as to how are the property owners suppose to advertise for future tenants knowing that MMC is proposing a 5 year construction time frame? How are the property owners suppose to retain tenants if tenants don't want to put up with the constant noise and debris that will be generated? When someone buys or rents a property, there is an expectation to be considered and that is the law of NUISANCE "If a nuisance interferes with another persons quiet or peaceful or pleasant use of his/her property" It maybe the basis for a law suit ordering the person or entity causing the nuisance to desist (stop) or limit the activity. This is a huge concern as a property owner renting to tenants. MMC needs to address these concerns.

As indicated above, no matter what the final decision is on this proposal, the above issues must be addressed by MMC with solutions which have to be agreed upon by the neighborhood residents.

Regards,
K. Snyder
24 Gilman

From: Deborah S. Boroyan <BOROYD@mmc.org>
To: "'karsny@yahoo.com'" <karsny@yahoo.com>
Sent: Wednesday, January 18, 2017 12:18 PM
Subject: MMC Neighborhood Meeting

This e-mail is being sent on behalf of Rich Petersen.

Dear Neighbor,

Thank you for attending the Maine Medical Center Neighborhood Meeting on January 12, 2017. We hope that you found the meeting informative and we are looking forward to continuing our dialogue about this important project.

The input you provided before the Neighborhood Meeting, relating to traffic patterns, pedestrian and bicycle routes, and the amenities you most value in your neighborhoods, is being reviewed by Basak Alkan, the Urban Planner who is assisting with the development of MMC's project and advising on how that project can best interact with our neighborhood.

MMC is committed to transparency and being a thoughtful neighbor while planning for these important enhancements to our facilities and ability to meet the health care needs of our community.

Please go to http://www.mmc.org/modernization for more information and updates about this project, including additional Neighborhood Meetings.

Regards,

Rich Petersen

Deborah S. Boroyan
Executive Assistant to the President
Maine Medical Center
(207) 662-2491
boroyd@mmc.org

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PC14

37 College Street
Portland, ME 04103-2617
January 23, 2017

Nell Donaldson, Senior Planner
City of Portland
Planning Division
389 Congress Street
Portland, ME 04101

Dear Nell Donaldson:

This is my reply to the proposed Text of the Institutional Overlay Zone (IOZ). This was part of a memorandum dated January 6, 2016 (2017).

p.2 Institutional overlay zone text

In the first place, all four institutions concerned, in the spirit of "Total Transparency", should, if not already done so, furnish available as public record all applicable copies of their Charter, articles of incorporation, bylaws, etc., including those still in force from predecessor organizations. In this way the public will know what activities the institutions may or may not do.

p.2 IV 1c purpose – Insert the words "abutting or" before the word "surrounding." In this manner the reading will be – ".... integrates abutting or surrounding neighborhoods ....".

The insert is necessary to protect the integrity of the privately owned parcels of #33-37 College Street. These properties are probably in a unique situation where they <u>surround</u> nothing. For the last two years it is UNE that <u>surrounds</u> these parcels of land. Unaltered, a minor technicality such as this, could lead to those parcels of land not being recognized as a neighborhood at all and shut out of the planning process. Therefore, a neighborhood is one or more privately owned parcels of land to include those abutting or surrounding an institutional overlay zone.

The remainder of my comments are more general in nature for the time being. It is assumed that you are looking for more headings or amplify existing ones in the Proposed Text.

p.3 Permitted use – this must mean consistent with their articles, charter, etc.

p.5 IDP – Is this the same as the term "Master Plan", which has not appeared in the Proposed Text?

p.5 IV 5d iii 3a – What is "TDM"?

IV 5d iii 3b – Does this include adding, deleting or altering parking designations on a public Street?

IV 5d iii 4b – Does this also embrace water draining into naturally occurring soil that is present?

IV 5d iii 4f – Assume that this also includes offensive soundwaves along with convergence of soundwaves both as the result of one or more appurtenances such as grates, fans, generators, compressors, circulators emitting

January 23, 2017

a sound that can be detected only in a narrow area, not always at ground level.

IV 5d iii 5d - what is "CPTED"?

IV 5d iii 5f - Presume any problems to be addressed in Section IV 5e 5 and 9

P. 6 IV 5d iii 6C - Construction Management - Does this include liabilities resulting in damage to private property due to construction, demolition, altering, filling, contour changes - should private property owners pay for institutional damages upon them by the above activities not covered by their insurance? If the expansion of an institution upon a private property owner causes repeated damage claims and the insurance company raises the premium as higher risk, should the institution pay the difference between the rates since it is they who have "thrust" themselves upon the private property owner?

Likewise, where would there be an institutional maintenance clause that would totally protect private property owners against neglect (Institutional owned tree falls upon private property house causing damages)?

IV 5e5 Mitigation - assume this covers changes to appurtenances and appliances already in place such as troublesome lighting, noises, soundwaves.

IV 5e9 - Neighborhood Integration - would this be the heading under which a list of problems would be made item by item to include 5e5 preceeding - all leading to a resolution?

That is all for now. Hope to receive your reply very soon.

Yours in Sensible planning,

Robert P. Fuller

Robert P. Fuller

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Fwd: Maine Med IOZ - South Lot Concerns

1 message

Melissa Knoll <melissa.knoll@gmail.com> Tue, Feb 7, 2017 at 10:24 PM
To: jf@portlandmaine.gov

---------- Forwarded message ----------
From: **Melissa Knoll** <melissa.knoll@gmail.com>
Date: Tue, Feb 7, 2017 at 10:18 PM
Subject: Maine Med IOZ - South Lot Concerns
To: planningboard@portlandmaine.gov, "Ozgur Basak Alkan, AICP, LEED AP" <Basak.Alkan@perkinswill.com>, jf@portandmaine.gov
Cc: Anne Pringle <oldmayor@maine.rr.com>, Scott Knoll <scott.knoll@gmail.com>

Dear Jean & Basak,

Thank you for taking neighborhood comment while planning the next Maine Med expansion. We live at the corner of West and Vaughan Street, so are in very close proximity. The move to make the entrance closer to Congress St sounds like a good one. We would like to see the high volume of Maine Med traffic reduced in the west end neighborhood.

We, as well as our neighbors, have two requests as you consider zoning change:

1. Move the exit of the surface lot on Brackett/Chadwick so traffic is directed away from the West End neighborhood. It is a huge safety and traffic congestion concern. I wrote a detailed e-mail regarding our concerns on Jan. 4th which I'll forward to Jean. There is broad west end neighborhood support for such a change.

2. It appears Maine Med is asking for long term approval to put a large 75 foot tall building on this same South Lot surface parking lot (see page 35 of the Maine Med Institutional Development Plan). The height and setback of a potential building on that lot should be kept the same as the surrounding R4 and R6 neighbors. A 75 foot building with a 5 foot setback as proposed on their plan would be enormous. Please keep the maximum height at the same level as the current R-6 & R-4 zone.

We could put together a neighborhood petition if this helps our case. Let us know if you think this would be valuable.

Thank you,
Melissa & Scott Knoll

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Fwd: Maine Med Traffic Volume & Safety Concerns from Chadwick Parking Lot

1 message

Melissa Knoll <melissa.knoll@gmail.com> Tue, Feb 7, 2017 at 10:23 PM
To: jf@portlandmaine.gov

Here is the e-mail detailing the traffic problems caused by the South Lot exit. Frequent high rates of speed can be added to this list.

Thank you,
Melissa

---------- Forwarded message ----------
From: **Melissa Knoll** <melissa.knoll@gmail.com>
Date: Wed, Jan 4, 2017 at 2:14 PM
Subject: Maine Med Traffic Volume & Safety Concerns from Chadwick Parking Lot
To: Basak.Alkan@perkinswill.com
Cc: Anne Pringle <oldmayor@maine.rr.com>

Hello,

Thank you for taking the neighborhood concerns into consideration in designing Maine Med's next expansion. We have three small children and live on the corner of West & Vaughan Street in Portland, Maine. We and many of our neighbors have expressed concern about the erratic driving and large volume of traffic from the surface lot on Chadwick/Brackett West Street. All of the exiting traffic is directed toward our neighborhood from the one way exit on Chadwick, and 90% turns left down West, and then left on Vaughan.

Major problems include ~

- High traffic volume, especially at busy times of day
- Drivers are unfamiliar with the area, there is no signage back to the highways
- Drivers are distracted - many are on phones, in a hurry, have health problems, or are lost
- Cars frequently drive on West Street as if it is a one way street (like Chadwick) and drive on the left side of the road
- Cars do not come to full stops at Chadwick/West stop sign & West/Vaughan stop sign

- Most drivers have been at the hospital and are not paying full attention to driving safely or the children in the neighborhood
- Both Chadwick & the West Prom are one way streets heading away from the hospital making it difficult to access the hospital entrance, which adds to traffic congestion

Our neighborhood is young and vibrant with 10+ small children that live directly on this block. There have been several close calls already with traffic. It seems like there could be a reasonable solution to direct this unnecessary traffic away from the West Prom neighborhood. I look forward to speaking to you more about this. Please feel free to contact me and I can describe or show you the problem in more detail.

Thank you!

Best,
Melissa & Scott Knoll
83 West St
Portland, ME 04102

Google Groups

Comment on MMC overlay zone

Sara Anne Donnelly <sara@saraannedonnelly.com> Feb 10, 2017 9:18 AM
Posted in group: **Planning Board**

To the Planning Board:

This letter is in regards to the proposed overlay zone that would allow Maine Medical Center to expand. I do not oppose the zone or the expansion, but as an abutting neighbor I do think it's important to call attention to trouble that we have had in convincing Maine Medical Center to be respectful of our space. I do this in hopes that perhaps provisions could be written into the overlay zone that protect the neighborhood from harm caused by the hospital and its expansion.

I live at 19 Ellsworth Street, which I have owned or managed since 2012. My two-unit home is two doors down from the current main entrance to the hospital on Bramhall Street. Soon after I bought the property, MMC banned smoking on its grounds. Since then, the neighborhood has struggled with patient and employee smokers that have effectively been pushed onto our sidewalks. There are dozens of them, particularly on warm days, smoking throughout the day at a near constant.

The hospital has met with neighborhood reps as far as I know (I was only invited to one meeting) and has reluctantly steered smokers away from some parts of the abutting neighborhood. They refuse, however, to re-establish a smoking space on their grounds, ignoring the reality that unlike other no-smoking hospitals their campus is in the middle of a densely populated area. This leaves us with a policy that is like a balloon pushed on one end that juts out on the other. The smokers that are deterred from one part of our neighborhood only migrate to another.

That's where my house comes in. Across the street, at Hill and Ellsworth, is a popular corner for employees of the hospital to smoke. This is no accident. The hospital about a year ago installed "Buttler" cigarette butt collectors at this corner, which it pays to maintain. These Buttlers are in front of private property. They effectively validate and even encourage smokers from the hospital to come to our neighborhood in front of private property and smoke. Which they do, by the dozens daily on warm days. Sitting on stoops and lounging on the sidewalk in their MMC uniforms.

The Buttlers were pitched by MMC to the neighbors (including me) as a way to collect the smokers away from the windows of those with concerns, and to gather the butts that were so many the rumor was they clogged up the sewer underneath the sidewalk. We were told that the Buttlers would be moved if there was a problem. But this is not the case.

I have spoken with six property owners or tenants around these Buttlers who have serious concerns about the effect of the smokers on our health, our quality of life, and our property value. I relaid this concerns to the hospital. To date, the hospital has done nothing to divert its employee smokers away from our sidewalks. I have particular concerns about the smoke as I work from home, my tenant is also home and is undergoing chemotherapy, and my infant daughter is cared for at home. Next door, my neighbors have a one-year old son who is also home most of the day. The smoke from the MMC employees comes into our windows almost constantly during warmer months. Over a year ago, the young mother next door and I joined a neighborhood meeting with MMC to talk about the smokers. We were listened to but nothing of substance was ultimately done. We were even told by MMC counsel to ask the smokers to move ourselves.

Next week, the owner of the property on the corner and I will finally meet with MMC to discuss the employee smokers at the corner of Hill and Ellsworth. But even if we are successful at resolving our issue, other property owners will suffer as the smokers will only migrate. The only effective way to respect the neighborhood would be to alter this flawed no-smoking policy and return a space for smokers to hospital grounds. But the hospital will not consider this. They seem to hope that we will just go away. This meeting alone is a perfect example -- it was first promised to us in October. It is only now happening, after repeated follow-ups from the neighborhood.

I recognize that the overlay zone and the expansion are a separate issue, but I am concerned that the expansion will bring more smokers to our neighborhood and that the hospital will not be held accountable for its promises to respect our health and our quality of life. I have attended a couple of the neighborhood meetings about the expansion held by MMC, and the rhetoric about respect and concern for the neighborhood is heartwarming. But if the ongoing and very real damage to the neighborhood caused by another of MMC's sweeping changes is any indication, the needs of the neighbors may ultimately be ignored.

I write this letter in hopes that perhaps there is some way the zone can be written to better protect us neighbors.

Thank you for reading, and I'm happy to answer any questions you may have.

Best,
Sara

Sara Anne Donnelly
Writer ○ Writing Coach
M 207.632.1042 O 207.274.6848
www.saraannedonnelly.com
@SaraADonnelly

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Submission of Comment Planning Board re: MMC IOZ

Zack Barowitz <zbarowitz@gmail.com> Sun, Feb 12, 2017 at 2:57 PM
To: Helen Donaldson <hcd@portlandmaine.gov>, Jean Fraser <JF@portlandmaine.gov>
Cc: Tuck O'Brien <tuckobrien@me.com>, Jeff Levine <JLEVINE@portlandmaine.gov>, Brian Batson <bbatson@portlandmaine.gov>

Submission of Comment to IOZ

In reviewing the memo to the Portland Planning Board Nell Donaldson regarding the Draft Institutional Overlay Zone (IOZ), several items came up as matters of concern.

Section 1c clearly and rightly states that the purpose of the IOZ is to "Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions"

However, several elements of the plan run counter to this condition.

Foremost among them is the amount of surface parking, particularly the proposed 13 story lot slated for the Corner of Gilman and Congress Streets. Aside from the fact that parking structures are not typically built to such heights because they can cause dizziness; the placement of an inordinately tall structure will indubitably have a detrimental effect on adjacent properties.

A simple survey of existing garages on Congress, Crescent, and Forest Streets would show adjacent properties adversely affected. So much so, that were it be the cynical policy to erect garages to devalue adjacent properties; it would allow for more cost effective future expansion. In any case; the proposal is in direct conflict with this portion of the IOZ.

Secondly; part and parcel of IOZ for an institution of the type, size, and location of Maine Medical Center is a Traffic Demand Management program (TDM). The memo states that Meghan Houdlette, PE of the firm VHB has been brought on to assist in the fulfillment of this portion of the IOZ. It is however, of some concern that in a private meeting with Penny St. Louis of MMC and Basak Alkan; Ms. Alkan told me that the hospital have "no position" on the recommendations put forth in the Libbytown Traffic Circulation & Streetscape Study. This is concerning for several reasons:

- The hospital will only benefit from the implementation of the recommendations of the study
- MMC had previously endorsed the findings of the study, why the change of position?
- The adoption of the recommendations represents the bare minimum of what a 21st century TDM of a project of this scope should entail. The team should consider a

regional approach to transportation that encompasses all existing and future modes and systems including intercity park and rides, driverless cars, as well as bicycle and pedestrian infrastructure.

Finally, a graphic taken from the Public Meeting/Open House from January 12, 2017 shows a circular "1/4-mile walk radius" from surrounding areas to the MMC campus. However, the perimeter seems to reference an arbitrary center point within the MMC campus. To wit, the distance from a perimeter point on Grant Street to the nearest edge of the campus is twice that of one taken on Saint John Street. As such, the map is not terribly accurate and not as useful a tool as it could be.

Thank you for your kind attention to these matters.

Zack Barowitz,
Huntress Street

--
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Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Re: Institutional Overlay Zone (IOZ) PB memo for 2.14.2016

1 message

Timothy wells <welmaurya@gmail.com> Mon, Feb 13, 2017 at 9:44 PM
To: Jean Fraser <jf@portlandmaine.gov>

Jean,

A couple of comments about the Institutional Overlay Zone draft.

1. I think the city should be more specific about the planning period. I noticed that several cities, including SF, Oakland, Berkley require hospitals and universities to submit 20 year plans every 5 years. I think Portland should adopt the same policy. 20 years actually isn't that long when you are planning large construction projects and forces some rigor and long term thinking about the smartest, most effective way to grow.

2. I think the city should require the institutions to answer the questions:

a) How will expansion impact economic growth for the city, county and state?
b) What will be the positive and negative effects on the immediate surrounding neighborhoods?How will the plans impact property prices?
c) What is the impact on city property taxes?

Thank you for including these for the meeting on Tuesday.

Best regards,

Tim

Tim Wells
207-807-3876 MOB

On Feb 10, 2017, at 5:35 PM, Jean Fraser wrote:

Hello all

Please find attached the staff cover Memo for the Planning Board at next Tuesdays meeting, along with the final agenda for the meeting. The Memo contains the "final draft" of the IOZ ordinance text.

My name is Robert P. Fuller, owning and residing at #37 College Street. My sister owns #33-35 College Street. Together our properties comprise a neighborhood, though small in size. For the last two years, save for a public College Street, we are completely surrounded by the UNE campus. This is probably a unique situation, considering the four institutions cited for an overlay zone.

Four generations have lived in the home at #37 College Street, built by my grandfather about 110 years ago. Within our surroundings we are afforded a good view on all four sides, especially out our front window at a historic district. It is relatively safe and peaceful here on a predominately graduate campus. Traffic is usually manageable, except with special events.

Communication between the institutions and the neighborhoods need improvement. Hopefully the overlay zone process will send communications and resultant outcomes to a high level of order that the public should expect and get from an institution.

As part of the total transparency process, it should not be unreasonable to obtain from each institution information about each building and structure as to function, hours of operation, and who uses it. City oversight must insure that any activities of the institution are in keeping with its charter, articles, and by-laws.

In terms of overlay zone and instutional development process, the more details on a plan, the better for the neighborhoods. Without a detail requirement, there is always the temptation for an institution to produce vague plans. Who can say what the impact will be upon a neighborhood with changes in lighting, trees, traffic, impervious surfaces, parking, drainage, surface elevations, air circulators, vents, generators, compressors, construction or maintenance work, kinds of machinery employed, added doorways, trash removal, deliveries, pick-ups, hours of operation, converging soundwaves/noises and so forth?

Setbacks, transitions and buffers are of paramount importance to all neighborhoods, no matter the size. Dimensional figures applied to bordering or abutting neighborhoods cannot be uniformly implemented with a fixed set of standards. One size does not fit all. Instead, each jog of the bounds that abut or adjoin an institution must be treated on a case by case basis.

The outcome of the overlay zone process should leave each neighborhood as good or better in terms of protection. Our neighborhood quality of life is at stake and so are our real property values.

February 19, 2017

PC20

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

IOZ

2 messages

Anne Pringle <oldmayor@maine.rr.com> Tue, Mar 7, 2017 at 6:05 PM
To: "Fraser, Jean" <jf@portlandmaine.gov>
Cc: "Watson,Trevor" <trevorewatson@gmail.com>, "O'Brien, Tuck" <sgo@portlandmaine.gov>, "Sanders, Jeff" <Sandej4@mmc.org>, "Peterson, Rich" <peterri@mmc.org>

Jean,

I have been working like a house afire to get ready to go on vacation tomorrow, but have not focused as well on the IOZ text as I had hoped. My energy level is running down to zero with all that is going on just before I leave...

But see attached proposed changes, comments, and questions on the latest draft of the IOZ. As I will be away I guess they should be sent to the PB, unless staff agrees wit everything and incorporates them into a new draft!...

A major concern is that the language seems to focus on accommodating institutional needs. See the language I suggest in the purpose statement to better balance neighborhood impact, **especially encroachment**. As I have noted twice, since I have learned that purpose statements have no legal import, I think this language needs to be pulled into the text. I am not sure what to make of the language in various sections about acquisition and disposition.

Re the process of engagement with the neighbors. I must say I am very impressed with our experience with MMC this time around vs. last time. Maybe it's just because we are dealing with different personalities. Jeff Sanders is very open and I believe he hears us. He is also very clear about the hospital's needs. I feel we are engaged in problem-solving, both theirs and, hopefully, ours. Hiring Basak Alkan was a great commitment on MMC's part. Maybe this kind of hire should be required to bring the institution along on the community planning spectrum...

Anne

2,28.17 IOZ draft AP.docz.docx
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2_28_17 revised draft IOZ

INSTITUTIONAL OVERLAY ZONE (IOZ)

I. Purpose of the Institutional Overlay Zone

The Institutional Overlay Zone (IOZ) designation provides a regulatory mechanism available to the city's four major medical and higher education campuses where an improved regulatory structure is needed to facilitate a consistent, predictable, and clear growth management process. The purposes of the Institutional Overlay Zone are to:

a. Acknowledge that the city's major academic and medical institutions play a prominent role in the health and well-being of the local and regional community, and in order to sustain that role, these institutions need flexibility to change and grow;

b. Encourage proactive planning for institutional change and growth which: identifies and addresses likely long-term institutional needs and potential benefit to the surrounding area, city, and regional levels; ~~and cumulative~~ evaluates the impact~~s~~ of any proposed encroachment into residential neighborhoods; and leverages ~~while leveraging~~ potential benefits ~~at~~ to the neighborhood, ~~city, and regional level~~; (**NOTE**: VERY important to address the issue of potential encroachment. What is meant by "leverages")

c. Ensure that institutional change and growth both complements and, as is appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions;

d. Support the formation and continuation of mutually beneficial public-private cooperation;

e. Support an ongoing public engagement process that benefits both the institutions and nearby neighborhoods;

f. Reflect Comprehensive Plan and other policy objectives; and

g. Provide a consistent regulatory approach to all major institutions, which allows unique regulatory requirements that balance the particular needs of institutions with the needs of the surrounding neighborhood and wider community.

II. Location and Applicability

The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones. The Eligible Institutions are the two major hospital institutions of Maine Medical Center and Mercy Hospital and the two major academic institutions of University of Southern Maine and University of New England, their successors and assigns. Designation as an IOZ is the preferred mechanism where the Eligible Institution's proposed development is inconsistent with the existing zoning.

III. Establishment of an Institutional Overlay Zone

a. *Application for an Institutional Overlay Zone.* Where the Eligible Institution seeks designation as an IOZ, they shall submit a zone change application consisting of two components:

   i. An Institutional Development Plan (IDP) (see Section IV).

   ii. A Regulatory Framework (see Section V) that would, when and if adopted, be the text and map amendment to the City's Land Use Code and Zoning Map.

b. *Required Public Involvement.* Soon after the City becomes aware of any institutional plan to request a zone change, the applicant shall advise any abutting neighborhood association(s) of its plan to request a zone change. (**NOTE**: earlier notices came up at a recent meeting of about 14 NAs.) At least two neighborhood meetings shall be required. The first shall be held prior to the formal submission of a zone change

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application for an Institutional Overlay Zone and the second shall be held during the City's review. Meetings shall identify the concerns, if any, of affected residents and property owners, and inform the development of the Institutional Development Plan (IDP) and Regulatory Framework. Meetings shall be held in a convenient location proximate to the institution. The applicant shall provide written notification to property owners of record within 500 feet of the proposed IOZ boundary at least ten days prior to the meeting dates and maintain written records of the meetings.

c. *Required Scoping Meeting*. The Eligible Institution shall meet with the Planning Authority after the first required neighborhood meeting and prior to submission of the zone change application to confirm the focus of the Institutional Development Plan (IDP) and Regulatory Framework, including **study areas that may be outside of the proposed IOZ boundary** (**NOTE:** What does t his mean?). The IDP and Regulatory Framework will vary in detail and focus depending on the Eligible Institution and its particular context. The content requirements in Sections IV and V and the comments from neighborhood meeting(s) shall provide direction for the content of the IDP. The Planning Authority or Planning Board may require additional information or modify content requirements as is relevant to the Eligible Institution (see Section IV.c).

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d. *Reviewing Authority.*

i. The Planning Board shall review the zone change application, including the IDP and Regulatory Framework. ~~A~~ One or more public workshops and a public hearing before the Planning Board are required. (NOTE: Given the size and complexity of these institutions, I think it should be acknowledged up front that it likely than more than one workshop will be required.)

ii. Upon recommendation of the Planning Board, the City Council shall review and consider adoption of the Institutional Overlay Zone and the accompanying Regulatory Framework as an amendment to the city's code of ordinances.

e. *Future Institutional Development*.

i. All new development by the Eligible Institution within the boundary of the IOZ shall be compliant with the IOZ and accompanying Regulatory Framework, consistent with the IDP, consistent with the Comprehensive Plan, and meet applicable site plan standards, unless such standards are superseded by the Regulatory Framework.

ii. Any use/development proposed by the Eligible Institution outside the IOZ boundary that complies with the zoning for permitted uses in that location shall be reviewed under the standards of that zone. Any use/development proposed by an Eligible Institution outside of the IOZ boundary that is a conditional use in the zone in that location shall be addressed by the IDP. NOTE: What about use/development not compliant with underlying zones, e.g the West Street transplant center?)

IV. Institutional Development Plan *(IDP)*

a. *Purpose.* Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the Planning Board in accordance with this ordinance. The purpose of the IDP is to establish baseline data about institutional land uses, facilities, and services and measure, analyze, and address the anticipated or potential impacts of planned institutional growth and

change. The IDP shall serve as a background document that supports the proposed Regulatory Framework and frames subsequent site plan review(s).

b. *Planning Horizon.* An IDP shall provide the city and abutting neighborhoods with a clear outline of the anticipated or potential growth and change of the Eligible Institution for the short- to medium-term (e.g. 1-5 and 5-10 years respectively), as well as a conceptual growth plan for the long-term (e.g. 10 years ~~plus~~ or more); however, the specific planning horizons for each institution will be determined as part of the IDP approval process.

c. *Content.* The IDP submission shall address the following elements unless specifically modified by the Planning Authority or Planning Board, with the scope and level of detail to be clarified at the required Scoping Meeting:

i. Context Information

1. The institution's adopted mission, vision, or purpose statement
2. A summary of relevant baseline data on the institution, including:
   a) A neighborhood context plan;
   b) An inventory of current programs and services;
   c) A current census of the number of people using the institution (e.g., employees, enrollment, patients), with an indication of maximums and minimums over time;
   d) An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking);
   e) An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities.
3. A summary of the baseline characteristics of the existing campus and **context of the institution**, based on identified study areas, including:
   a) A summary of existing resources, such as historic, open space, and natural resources; **(Note:** does this mean, for example, the Western Prom in the case of MMC? Is the intent that the IDP demonstrate that it will not negatively affect these existing resources?
   b) A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization;
   c) A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues;
   d) Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth.
4. A summary of public involvement in the development of the IDP, **including major areas of public concern.** Good!

ii. Assessment of Future Institutional Growth and Change

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2_28_17 revised draft IOZ

1. A description of institutional needs and areas of future institutional growth and change, including:
   a) Projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time);
   b) Institutional objectives for property both within and outside the IOZ boundary **(e.g. acquisition and/or disposition)**, including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus; (**NOTE**: I think you are trying to address my suggestion that acquisition not be allowed outside that IOZ, but I am not sure this satisfies that suggestion. Again, this is the issue of encroachment, which should **NOT be allowed** into residential neighborhoods.
   c) A Development Plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary of the IOZ and any phasing of the development.

2. Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the Regulatory Framework:
   a) Transportation and access
      1) An analysis of the proposed changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan;
      2) An analysis of the proposed changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety;
      3) A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required.
   b) Environment
      1) An analysis of potential **cumulative impacts** on natural resources and open spaces; (**NOTE**: impact of individual projects should be analyzed, as well as cumulative impact. Minor individual impacts can build up to a major cumulative impact. This is what happened with Waynflete over the years.
      2) An analysis of projected energy consumption, hazardous materials generation, noise generation, and similar issues as relevant;
      3) An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation.

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c) Infrastructure

1) An analysis of projected public utility demand and the capacity of associated infrastructure;
2) An analysis of projected public safety needs and projected impacts to the capacity of these services;
3) An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.

d) Design

1) An analysis of projected impacts to neighboring properties and public spaces, including potential shadow, wind, and lighting impacts, impacts of height and massing, and impacts to natural and historic resources;
2) An analysis of transition areas between the institution and adjoining neighborhoods, including identification of key character defining components of the surrounding context;
3) An analysis of existing Crime Prevention Through Environmental Design issues and identification of how these principles would be addressed as part of the proposed campus development;
4) A conceptual built environment/public realm plan, representing the synthesis of the analysis and including a set of guidelines for urban design, landscape, open space, and streetscape treatments, **with particular attention to the treatment of edges (both within and abutting the IOZ boundary**) to achieve compatible transitions. Good.

e) Neighborhood Engagement

1) A plan for ongoing community engagement that represents best practices, promotes collaborative problem solving around community concerns, fosters transparency, and identifies mechanisms for neighborhood feedback and institutional accountability; Good!
2) A property management framework that identifies the institution's process for handling operational property issues with neighbors; Good!
3) Strategies for assuring **reasonably transparent** (**NOTE**: MMC was not at all transparent about the sale of the residential properties as required the contract zone. They really kept us in the dark for years on this. Need to be more explicit about what is meant by "reasonably transparent"? communication pertaining to **property acquisition and disposition in surrounding neighborhoods (NOTE:** This should not be allowed – encroachment! The whole purpose of the IOZ is predictability **BOTH** for the institution and the neighborhood.;
4) A set of construction management principles, to apply to all institutional construction, that represent best practice, aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a clear

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communication strategy is in place in advance of construction.

d. *Standards of Review*. The IDP shall:

i. Address all content requirements, unless explicitly modified by the Planning Authority or Planning Board;

ii. Reflect the issues/topics identified in the required public process;

iii. Demonstrate consistency with the city's Comprehensive Plan and the purpose of this ordinance;

iv. Demonstrate how the property ownership, proposed growth, and requested Regulatory Framework relate to the institution's mission;

v. Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands;

vi. Outline an approach to open space, natural, and historic resources that supports preservation and enhancement.

vii. Demonstrate that potential cumulative environmental impacts have been anticipated and can be minimized or satisfactorily mitigated;

viii. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated;

ix. Reflect a comprehensive design approach that ensures appropriate transitions with the existing or future scale and character of the neighboring urban fabric;

x. ~~Promote~~ Demonstrate compatibility with surrounding uses in adjacent neighborhoods, **maintain housing**, and support local amenities;

xi. **Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure;** **NOTE:** What does this mean?

xii. Conform with Portland's Historic Preservation Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts, or historic landscapes, the IDP shall be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity; and

xiii. Incorporate strategies to support clear communication and ongoing public engagement between institutions and nearby neighbors.

e. *Approval.* Upon finding that an Eligible Institution's IDP meets the standards of review, the Planning Board shall approve, approve with conditions, or deny an IDP.

f. *Monitoring.* The IDP shall establish a schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP, and identify thresholds for IDP amendments;

g. *Amendments.* An approved IDP shall guide campus development unless and until amended. If at any time the Eligible Institutions request **minor amendments** (how defined?)to an approved IDP, the Planning Authority may approve such minor amendments, provided that they do not constitute a

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substantial alteration (How defined?)of the IDP and do not affect any condition or requirement of the Planning Board. The applicant shall apply with a written statement of the proposed amendment and proposed amended IDP to the Planning Authority, whose decision as to whether the amendment is minor shall be final. Major amendments shall be reviewed by the Planning Board. When the IDP is amended, the baseline data in the IDP shall be updated as appropriate.

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V. Regulatory Framework

a. *Purpose*. The Regulatory Framework translates the IDP into a set of clear and specific zoning requirements for the IOZ that constitute the text and map amendments to the City's Land Use Code and Zoning Map. The zoning requirements are anticipated to include parameters that guide the growth and change of the institution as well as clarify how potential impacts will be addressed, though some details may be more fully developed under site plan review.

b. *Applicability.* The Regulatory Framework shall apply only to properties that are within the IOZ boundary and to which the Eligible Institution holds right, title, and interest. For these properties, the Institutional Overlay Zone shall supersede the underlying zoning, and all new institutional development shall be conducted in compliance with the Regulatory Framework and the approved Institutional Development Plan. Properties located within the Institutional Overlay Zone not subject to right, title, or interest of the Eligible Institution shall continue to be governed by the regulations of the underlying zoning designation.

c. *Uses.* Institutional uses, including hospitals and higher education facilities, shall be permitted, as shall uses that are functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use, consistent with the applicable approved IDP.

d. *Content*. The Regulatory Framework shall reflect the information and analysis of the IDP. The content shall be tailored to address the particular issues associated with the institution and its neighborhoods. The Regulatory Framework should be succinct and use tables and graphics as possible to address the following:

i. *Zoning boundary of the IOZ*: The area to which the regulations apply, as shown on the zoning map, subject to other provisions of this ordinance (i.e. the map amendment to the City's Zoning Map);

ii. *Phasing and schedules:* Requirements that relate to particular proposed phases; a chart showing the schedule or thresholds for submitting an amended IDP (or elements of an IDP, such as a Transportation Demand Management (TDM) Plan);

iii. *Uses:* Clarification, as necessary, on permitted uses.

iv. *Dimensional Requirements*: Graphics, sketches, or standards, including details for transition zones within the IOZ boundary;

v. *Transportation*: Elements such as TDM trip reduction targets or contribution to area-wide TDM measures; broad parameters for ensuring pedestrian, vehicular, bicycle and transit access and safety; parking ratios and management strategies; thresholds for access improvements;

vi. *Environment:* The approach to the inclusion of open space and preservation of environmentally-sensitive areas;

vii. *Mitigation measures*: The approach to identified mitigation measures, which would be addressed in greater detail in the site

plan review process; thresholds for addressing deficiencies; goals for preservation/protection;

viii. *Design*: Graphics and standards to clarify building placement and envelope (height and massing); guidelines for integration of site features; required treatments for transition zones and treatment for all edges (both within and abutting the IOZ boundary); guidelines for establishing campus identity; and

ix. *Neighborhood Integration:* Thresholds and strategies for neighborhood engagement; mitigation of impacts on neighboring properties, including construction impacts; screening and buffering requirements; objectives for pedestrian linkages and safety; other requirements that address community concerns.

x. *Monitoring:* A schedule for regular monitoring reports on IDP implementation in accordance with the IDP.

e. *Standards of Review:* The Regulatory Framework shall:

i. Be consistent with the Comprehensive Plan and the Institutional Development Plan;

ii. Provide a clear zoning framework, using graphics and tables as appropriate, to apply to future site plan reviews;

iii. Provide specific regulatory statements as appropriate that respond to concerns raised during the required public involvement; and

iv. Outline measurable goals and thresholds for improvements or other actions identified in the IDP to be advanced in subsequent site plan applications.

f. *Approval/Adoption.* The Planning Board shall review the proposed Regulatory Framework against the standards of review and make a recommendation on the institution's IOZ designation and Regulatory Framework to the City Council for adoption as part of this zoning ordinance.

g. *Amendments.* A Regulatory Framework and IOZ boundary as adopted by the City Council shall remain in force unless and until amended. Amendments to a Regulatory Framework and/or IOZ boundary not brought forth by the institution as part of an IDP amendment will require a supermajority of the City Council to take effect. Amendments to the IOZ boundary or Regulatory Framework shall be reviewed by the Planning Board and adopted by the City Council subject to the provisions of this ordinance.

VI. Regulatory Frameworks of Eligible Institutions (The regulatory frameworks adopted by the Council for each Eligible Institution will be codified within this section.)

Portland Maine Yes. Google's good here.

James Dealaman <jdealaman@portlandmaine.gov>

Neighborhood Concerns over IOZ IDP Process relating to existing Contract Zone Language

1 message

stjohnvalleyneighborhood <stjohnvalley@live.com> Mon, Mar 27, 2017 at 11:40 PM
To: "planningboard@portlandmaine.gov" <planningboard@portlandmaine.gov>
Cc: "sgo@portlandmaine.gov" <sgo@portlandmaine.gov>, "jf@portlandmaine.gov" <jf@portlandmaine.gov>, stjohnvalleyneighborhood <stjohnvalley@live.com>, moses <mosessabina@yahoo.com>, "garrybowcott@hotmail.com" <garrybowcott@hotmail.com>, Jenny MacKenzie <jenabeat@hotmail.com>, "boccafe@hotmail.com" <boccafe@hotmail.com>, "nmaze@shalomhouseinc.org" <nmaze@shalomhouseinc.org>, "Jacob, Ian" <iancasperjacob@gmail.com>, Zack Zack Barowitz <zbarowitz@gmail.com>, Holder Emma <pna@parksideneighborhood.org>

http://thebollard.com/2010/02/07/getting-the-institutional-creeps/

March 27, 2107

To the City of Portland Planning Board:

In reviewing the latest IOZ draft with a group of neighbors yesterday, a couple of questions came up:

Once the IOZ is adopted, are all restrictions and covenants in place under an institution's current Contract Zoning eliminated?

The language in the IOZ, Chapter V Regulatory Framework states that the IOZ shall ***supersede the underlying zoning*.**

There is also language throughout the IOZ referencing for example that the institution's IDP provide a description of the ***Assessment of Future Institutional Growth and Change.***

In the Chapter IV Neighborhood Engagement paragraph there is language that references (***reasonably) transparent communication pertaining to property acquisition...***

I'm not sure how we missed this but the language has us very concerned that the new IOZ *completely* removes restrictions currently in place on Maine Med's ability to expand in our neighborhood- outside of their current footprint.

Additionally, several other mandates present in the hospital's current contract zoning will apparently go away upon the adoption of the IOZ.

Specifically:

- Reporting requirements for Helicopter landings.
- Reporting requirements for the institutions Alternative Transportation Plan.
- Mandated quarterly meeting s for the purpose of keeping the neighbors apprised of future development plans.:)
- Snow ban parking provisions
- Signage compliance

I'm assuming some of the above may be addressed in the MMC IDP, or are already part of city code.

Back to the footprint question...While we as a group agreed to and even suggested loosening expansion restrictions to allow for possible development of-for example the Sportsman's Club lot, we did so with a consideration towards diluting the impact of 1,200 cars being parked by the hospital on the Gilman Street block. An abandoning of the expansion restriction in its entirety is not what we envisioned and puts the neighborhood right back into the path of potentially major institutional creep.

Taking a look at a possible scenario:

The hospital already owns two surface lots on the west side of Valley at A Street.

With a complete removal of restriction against expansion outside the footprint, what keeps them from buying the other four parcels and creating another institutional super-block?

If I understand it correctly, in the case of the super-block, prior to being approved for use, the institution would need to have presented plans for this purchase and expansion in their IDP, and have the IDP approved by the Planning Board and the Council.

This is where I start to get confused.

- **How can the institution include in their IDP, their intention to develop that block if they have not yet purchased the other property?**
- **How*"transparent"* or detailed can an institution possibly be in sharing their plans for acquisition and development in the IDP and still protect their position of confidentiality as a buyer?**
- **How will an institution be able to present, as required by the IDP, a description of their *"institutional objectives for property both within and outside the IOZ boundary"* and still protect their property buying interests?**
- **If, in order to protect the confidentiality of the buyer/seller, an institution is not required to present specifics about their *"assessment of future institutional growth and change"* including specific properties to be purchased or sold, how is the neighborhood to protect themselves from potentially unfettered growth by the institution?**

Our biggest fear outside the prospect of a thirteen story parking garage, is that of a constant, ever expanding Maine Medical Center presence in our neighborhood.

This was a fear addressed and remedied in Chapter 1 of the 2005 Conditional Zone document and remains an active concern of those who live in this neighborhood. I've attached a copy of the Conditional Zone document along with a link to a story from 2010 relating to our neighborhood's concern over constant institutional expansion.

I'm sure there are parts of this process that many of us still need to understand. I greatly appreciate the patience and clarity that city planning staff , particularly Tuck and Jean, have demonstrated when speaking with me and my neighbors in trying to teach us about the process.

At this point however, I just don't see how the IOZ/IDP process demonstrates enough governance, control or influence over the institutions to protect those who might be negatively impacted by unrestricted expansion.

Before approving this approach , we need to figure out how the IOZ/IDP process can maintain and incorporate the protections provided by the current Conditional Zone Agreement; drafted and included for the long term benefit of our neighborhood, while still allowing consideration for thoughtful and agreed upon expansion by the institutions in our neighborhoods.

Thank you.

Tim McNamara

251 Valley Street

Portland, Maine

FINAL Contract 4.25.05 cra new patient visitor.odt
82K

Order 172-04/05
Given 1st reading: 2/23/05 Postponed on 3/7/05
Public Hearing & postponed on 4/4/05
Amended & Passage: 4/25/05 9-0

JILL C. DUSON (MAYOR)(A/L)
PETER O'DONNELL (A/L)
JAMES F. CLOUTIER(A/L)
NICHOLAS M. MAVODONES (A/L)

CITY OF PORTLAND

IN THE CITY COUNCIL

WILLIAM R. GORHAM (1)
KAREN A. GERAGHTY (2)
DONNA J. CARR (3)
CHERYL A. LEEMAN (4)
JAMES I. COHEN (5)

AMENDMENT TO CITY CODE
SEC. 14-49 (ZONING MAP AMENDMENT)
RE: CONDITIONAL REZONING FOR PROPERTY
IN VICINITY OF WESTERN PROMENADE/ MAINE MEDICAL CENTER

ORDERED, that the Zoning Map of the City of Portland, dated December 2000 as amended and on file in the Department of Planning & Development, and incorporated by reference into the Zoning Ordinance by Sec. 14-49 of the Portland City Code, is hereby amended to reflect a conditional rezoning as detailed below:

CONDITIONAL ZONE AGREEMENT
MAINE MEDICAL CENTER

AGREEMENT made this ____ day of _____, 2005, by **MAINE MEDICAL CENTER**, a Maine corporation with a principal place of business located in the City of Portland, County of Cumberland and State of Maine, its successors and assigns ("**MMC**").

WITNESSETH:

WHEREAS, MMC is the owner of land and buildings located in Portland at Map 53, Block D, Lots 1, 2 and 7; Map 53, Block E, Lots 1, 2, 10 and 13; Map 53, Block G, Lots 1 and 13; Map 54, Block H, Lot 1; and Map 64, Block C, Lots 1 and 2; and Map 55, Block B, Lot 13 (the "**PROPERTY**"); and

WHEREAS, **MMC** is the largest provider of obstetrical services in Maine and provides the only statewide fulltime maternal fetal medicine service serving women and newborns at high risk and **MMC** has the only Level III neonatal intensive care unit in Maine; and

WHEREAS, in order to respond to the changing professional and clinical standards for the care of sick infants within the neonatal intensive care unit and to meet the spatial requirements of today's routine and high risk obstetrical and newborn care, **MMC** must build an addition comprised of 192,000 square feet (the "Charles Street Addition"); and

WHEREAS, **MMC** proposes to construct the Charles Street Addition by expanding vertically, on the site of an existing medical building bounded generally by Charles Street, Wescott Street, Ellsworth Street and Crescent Street; and

WHEREAS, in order to avoid a substantial expansion of the footprint of the buildings at **MMC** and, instead, to construct the Charles Street Addition by vertical expansion, it is necessary to modify the otherwise applicable height requirement in the R-6 Zone; and

WHEREAS, in order to accommodate the needs of the Charles Street Addition and to improve parking and traffic circulation on the **MMC** campus, **MMC** proposes to construct a new 512 car capacity parking garage along Congress Street (the "New Parking Garage"); and

WHEREAS, in order to achieve the requisite parking capacity within the available space, **MMC** needs to build the New Parking Garage at a height taller than the currently applicable height limit in the R-6 Zone and also to locate the New Parking Garage closer to Congress Street than the currently applicable setback requirement in the R-6 zone; and

WHEREAS, in order reduce transport time for critical patients coming to **MMC**'s emergency department, **MMC** proposes to construct a helicopter landing pad on top of the

existing parking garage which fronts on Congress Street (the "Helicopter Landing Pad" also occasionally referred to as "Heliport or Helistop"); and

WHEREAS, in order to replace currently fragmented heating and cooling systems throughout its campus, **MMC** intends to construct a central utility plant, built into the hillside between the hospital and Gilman Street (the "Central Utility Plant"); and

WHEREAS, the Central Utility Plant will be built at a proposed height of 45 feet but is also designed to accommodate a future vertical expansion of two additional floors, with a maximum future height of 70 feet; and

WHEREAS, **MMC** currently has operating rooms, intensive care beds, and adult and pediatric beds in an existing building constructed in 1985 (expanded in 1998) and referred to as the "L. L. Bean Wing;" and

WHEREAS, **MMC** has no current construction plans for the L. L. Bean Wing, but anticipates that the L. L. Bean Wing will need to be expanded vertically at some time within the next decade; and

WHEREAS, the L. L. Bean Wing was designed structurally to accommodate such vertical expansion by an additional two stories; and

WHEREAS, **MMC** desires to provide for such eventual vertical expansion within this Agreement and additional vertical expansions, except as noted below, are not included within the scope of this Contract and will be subject to negotiation and approval in the future, when presented; and

WHEREAS, by expanding vertically for the Charles Street Addition rather than horizontally, **MMC** will need to remove only two residential buildings, and will do so in full

compliance with the housing replacement requirements of section 14-483 of the Portland Code of Ordinances; and

WHEREAS, in addition to such required replacement, **MMC** will divest itself of ownership of nine other buildings (two on Crescent Street, two on Ellsworth Street, one on Hill Street and four on Bramhall Street), enabling others to return them to residential use; and

WHEREAS, **MMC** has requested a rezoning of the **PROPERTY** in order to permit the above-described improvements; and

WHEREAS, the **CITY** by and through its Planning Board, pursuant to 30-A M.R.S.A. §4352(8) and Portland City Code §14-60, *et seq.*, and §14-315.3, after notice and hearing and due deliberation thereon, recommended the rezoning of the **PROPERTY** as aforesaid, subject, however, to certain conditions more specifically set forth below; and

WHEREAS, the **CITY** has determined that because of the unique circumstances of the location of an urban medical center campus in close proximity to historic and densely populated neighborhoods within the R-6 Zone, and in order to balance the interests of **MMC** and its residential neighbors, it is necessary and appropriate to impose the following conditions and restrictions in order to ensure that the rezoning is consistent with the City's Comprehensive Plan; and

WHEREAS, on April 25, 2005, the **CITY** authorized the amendment to its Zoning Map based upon the terms and conditions contained within this Agreement, which terms and conditions become part of the zoning requirements for the **PROPERTY**;

NOW THEREFORE, in consideration of the rezoning, **MMC** covenants and agrees as follows:

1. **MMC** will restrict any further expansion of its uses[1] in the Western Prom/ Parkside/ Gilman Street neighborhoods to the property specifically included in the following defined Campus[2]:

(a) The main campus, bounded by the north side of Bramhall Street, the

(b) western side of Wescott Street, a portion of the northern side of Crescent Street terminating with the proposed end of the new garage, and the south side of Congress Street between the existing and proposed new garage, and the eastern side of Gilman Street;

(c) The existing medical office building located on Congress Street across from the main campus;

(d) The Vaughn Street parking lot and McGeachey Hall;

(e) The existing West Street Medical Office Building located behind the row houses at the eastern end of West Street (CBL 55-B-13);

(f) The block bounded on Congress Street, Gilman Street, Valley Street and A Street.

2. The following exhibits are incorporated into and made a part of this Agreement:

Exhibit A: Helistop Overlay Zone Map

Exhibit B: Site Plan

1. Sheet C050: Campus Plan, Revision date: 9/16/04
2. Sheet C100: Site Plan, Revision date: 9/16/04
3. Sheet C101: Site Plan, Revision date: 9/16/04
4. Sheet C102: Site Plan, Revision date: 9/16/04
5. Sheet C103: Site Plan, Revision date: 9/16/04
6. Sheet C400: Landscape Plan, Revision date: 9/16/04

[1] "Future expansion of its uses" shall mean new construction of building(s) and or conversion of existing uses (including residential uses) into hospital related uses and the like. It shall not mean the occupancy of an existing building which contains a legally conforming medical related use.

[2] This provision shall not prohibit **MMC** from expanding or building in other areas of the City if permitted by zoning.

7. Sheet C401: Landscape Plan, Revision date: 9/16/04
8. Sheet C402: Landscape Plan, Revision date: 9/16/04
9. Sheet C403: Landscape Plan, Revision date: 9/16/04
10. Landscape Plan at Existing Garage, See sheets 401 & 402
11. Pedestrian Connection to Congress Street, 4/14/04
12. Parking Garage Rendered Elevation, North, (Option 1; Exhibit B, p.12, April 25,2005)
13. Parking Garage Rendered Elevation, (Option 1, Exhibit B, p. 12, perspective; April 25, 2005)
14. Parking Garage Rendered Elevation, South, 1/27/05
15. Central Utility Plant Rendered Elevation, 1/27/05
16. Charles Street Addition Rendered Elevation, South 1/27/05
17. Charles Street Addition Rendered Elevation, East 1/27/05
18. Charles Street Addition Rendered Elevation, North 1/27/05
19. Charles Street Material Board 1/27/05

20. Street Vacation/Acceptance and Land Transfer Plan (Sheet 1)
21. Street Vacation/Acceptance and Land Transfer Plan (Sheet 1)
22. Concrete Sidewalk Plan

Exhibit D: Miller Memo 01/06/05 and MMC Helipad Flight Paths, Harris Miller Miller & Hanson Inc., 9/16/04

Exhibit E: Helipad Operating Guidelines (2 pages); source, Lifeflight of Maine

Exhibit F: Helipad Plans
1. Heliport Plan, 1/27/05
2. Heliport Elevation, 1/27/05
3. Heliport Perspective, 1/27/05

Exhibit G: Vaughan Street Parking Lot Landscaping Plan
1. Landscape Plan, 7/8/04
2. Wall Treatment
3. Fence Detail
4. Landscape Section

3. The **CITY** shall amend the Zoning Map of the City of Portland, dated December 2000, as amended from time to time and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by Portland City Code §14-49, by adopting the map change amendment below, which map change includes a Helistop Overlay Zone as more particularly depicted on Exhibit A.

4. The **PROPERTY** and site improvements shall be developed and operated substantially in accordance with the site plan shown on Exhibit B (the "Site Plan"), which Site Plan includes but is not limited to street layouts, landscaping, and building elevation drawings for initial construction, subject to the approval of the Site Plan by the City's Planning Board in compliance with the requirements of Chapter 14, Article V. The architectural treatment of the façade of the New Parking Garage may be revised during site plan review and shall meet the site plan standards of 14-526(16). Minor revisions to the Site Plan in the nature of field adjustments may be approved by the Planning Authority, without the need for amendment of this Agreement or further approval by the City Council.

5. No building permits shall be issued unless and until **MMC** receives conditional use approval pursuant to section 14-474 (Expansion of Institutional Use) and section 14-483 (Housing Replacement), site plan approval pursuant to section 14-483(e) of the City Code, approval under the Site Location of Development Act and an MDOT traffic movement permit, if required. No occupancy of the newly constructed buildings shall be permitted unless and until all site plan conditions of approval have been satisfied and the City Council has taken final action on the street discontinuances and street acceptances required for the realignment of certain streets, as shown on the Site Plan (Exhibit B).

6. **MMC** shall provide to the **CITY** a performance guarantee covering all required site improvements under section 14-525(j) of the City Code and the two replacement dwelling units provided under paragraph 6(d) of this Agreement.

7. The **PROPERTY** shall be governed by the zoning provisions, as such may be amended from time to time, applicable in the zoning districts underlying the Conditional Zone except as follows:

(a) Height Limits. The maximum structure height (measured according to the definition of "building, height of" in section 14-47) shall be:

- 95 feet for the Charles Street Addition, as depicted on the Site Plan
- 70 feet for the New Parking Garage, as depicted on the Site Plan
- 45 feet for the Central Utility Plant, as depicted on the Site Plan
- 111 feet for the L. L. Bean Wing, as already constructed.

(a) Setbacks.

- The minimum setback of the New Parking Garage shall be zero (0) feet from the right of way line of Congress Street.
- The minimum setback of the southeast corner of the Charles Street Addition shall be five (5) feet from the relocated right of way line of Ellsworth Street, as depicted on Exhibit B.
- The minimum setback of the Central Utility Plant shall be five (5) feet from Gilman Street.

(d) Replacement Housing. The replacement of the two existing residential structures at 33 Crescent Street (identified as Map 53, Block E, Lot 2) and 37 Crescent Street (identified as Map 53, Block E, Lots 1, 10 and 13) containing a total of seven dwelling units and two single-room occupancies by a portion of the New Parking Garage shall be deemed to meet the requirements of section 14-137(c), provided that **MMC** shall comply fully with the requirements of section 14-483 (Preservation and Replacement of Housing Units). Specifically, **MMC** shall comply with section 14-483 by (i) converting the building at 325-329 Brackett Street identified as Map 54, Block D, Lot 7 (the last approved use of which was office space) into two dwelling units prior to the issuance of a certificate of occupancy for the New Parking Garage and then divesting itself of ownership of the building prior to the issuance of a certificate of occupancy for the Charles Street Addition and (ii) paying Three Hundred Fifteen Thousand Five Hundred Eighty dollars ($315,580.00) into the **CITY**'s Housing Development Fund (representing five dwelling units and two single-room occupancies) upon

approval of the Site Plan by the **CITY**'s Planning Board. The deadline for divestiture may be extended by the Planning Authority if **MMC** demonstrates that reasonable good faith efforts to market the property instituted at least 6 months prior to the deadline have failed to produce a bona fide offer at or above fair market value and on commercially reasonable terms.

(e) Sidewalks. **MMC** shall comply with the **CITY**'s Brick District Policy Plan, except that, at the time of final site plan review, the Planning Board may approve the use of concrete sidewalk materials , as shown on Exhibit B 22, because of the particular needs or requirements of the hospital use.

(f) Street level uses in garage. The street level of the new parking garage may be used for any use allowed in the B-2 zone.

8. The Helicopter Landing Pad shall not be subject to the provisions of section 14-409 (Heliports), but shall be governed by the provisions of the Helistop Overlay Zone, sections 14-325 through 14-327), except as follows:

(a) Setbacks. Because it is to be located on the roof of an existing structure, the landing pad shall not be required to meet the setback requirements of Section 14-327(3) or the fencing requirements of Section 14-327(4).

(b) Flight routes. **MMC** shall identify preferred flight routes, to be approved by the **CITY**, designed to minimize noise impact of helicopter flights on surrounding residential areas, shall notify all flight providers likely to use the Helicopter Landing Pad of such preferred routes, and shall take the following measures to ensure that such preferred routes are utilized whenever weather conditions, safety considerations and the best interests of the patient being transported permit, with the expectation that this will be the usual case. **MMC** will instruct all providers which regularly use the Helicopter Landing Pad that pilots must file an exception report with the Air Medical Provider Administration of Lifeflight of Maine or its successor entity for operations modified for safety considerations or at the direct request of Approach Control at the Portland International Jetport. Logs of these exception reports will be made available to **MMC** and to the **CITY** every six months. When and if the Portland Jetport has the capacity to maintain and preserve data which specifically identifies flight routes actually taken by aircraft using the Helicopter Landing Pad, the **CITY** shall consult such data to review compliance with this paragraph, and **MMC**, upon request of the **CITY**, will be responsible for the **CITY**'s reasonable costs of translating such data into useable form, but not for the costs of the flight monitoring. Initially, such preferred flight routes shall be as shown on the map attached to this Agreement as Exhibit D. At the initiative of either the **CITY** or **MMC**, the map of preferred flight routes may be amended from time to time by agreement between **MMC** and the City Council. The City Council shall consult with the Portland International Jetport and shall convene a neighborhood meeting to obtain input from residents of any affected residential areas before agreeing to any such amendment. An agreement between the parties to change preferred flight routes under this paragraph shall include noise mitigation measures in addition to those described in paragraph 7(g) below provided the noise mitigation measures are recommended by

an independent noise consultant. In addition, after one full year of operation of the Helicopter Landing Pad (measured from the date of the first patient transport flight to use the Helicopter Landing Pad), the City Council shall review the operation of the preferred flight routes and may initiate amendments to the map of preferred flight routes, following the procedures specified above. In connection with review or amendment of flight routes under this paragraph, the **CITY** may engage the services of an independent consultant and **MMC** will reimburse the **CITY** for its reasonable costs of obtaining such consulting services provided that the **CITY**, in advance of engaging the consultant, affords **MMC** an opportunity to comment on the scope of the consultant's engagement.

(c) Fly Neighborly. In negotiating any contract or agreement with any provider of emergency medical transport by helicopter, **MMC** will require the provider to operate in compliance with the "Fly Neighborly Guide" revised February 1993, (and any subsequent revisions) prepared by the Helicopter Association International Fly Neighborly Committee and published by the Helicopter Association International. **MMC** shall establish a complaint number and a protocol for handling complaints, which shall be publicized within the neighborhood, and the complaints will be reviewed no less than quarterly by the Maine Medical Center Neighborhood Council, noted below.

(d) Helipad operating guidelines. Helicopter landings on the Helipad are approved for emergency patient care only. Any use of the Helicopter Landing Pad for other than emergency patient care transport shall be deemed a violation of this Agreement and shall result in the termination of the Helicopter Overlay. The following standard practices will be incorporated as general policy for operations in and out of the Maine Medical Center Helipad and shall be communicated by **MMC** to providers. At all times, the Pilot in Command (PIC) will determine safety of operations as a first consideration. Under normal operating circumstances, take-offs, landings and standing-by on the Helicopter Landing Pad shall be conducted according to the Operating Guidelines, attached hereto as Exhibit E, subject at all times to the judgment of the helicopter pilot concerning safety and to the judgment of the emergency medical personnel concerning the health of the patient.

(e) Equipment. In generating any specifications in connection with the negotiation of any contract or agreement with any provider of emergency medical transport by helicopter, **MMC** will specify that helicopters utilizing the Helicopter Landing Pad (with the exception of U.S. military or government aircraft) are relatively new turbine powered aircraft meeting requirements under ICAO Annex 16 Chapter 8 for in-flight noise levels and complying with FAA airworthiness standards, 14 CFR part 36.11 and 14 CFR 21 Sub-part D, or any amended or successor requirements or standards.

(f) Design and construction. The Helicopter Landing Pad shall be constructed as shown on Exhibit A.

(g) Mitigation. **MMC** will pay for the installation costs associated with the full installation of soundproofing improvements contained within Exhibit D, except in lieu of central air conditioning MMC will also pay for the installation of ventilation improvements to one or more rooms within each such dwelling unit as reasonable and appropriate as determined by the

CITY. The **CITY** shall contract for such work and **MMC** shall be responsible for the costs associated therewith, plus a 10% administrative fee to be paid to the **CITY**. Before entering into any contract for such work, the CITY shall notify MMC and give MMC the opportunity to comment on the scope of the proposed work and the estimated cost thereof. The properties to be included under this provision are as follows: 879 Congress Street (Map53, Block I, Lot 16), 921 Congress Street (Map 65, Block D, Lot 17), 925 Congress Street (Map 65, Block D, Lot 16) and 929 Congress Street (Map 65, Block, D, Lot 14). Such funds shall only be expended if the present owners of such buildings request such improvements no earlier than six months and no later than eighteen months after commencement of the operation of the Helicopter Landing Pad. For a period of five years from the date of this Agreement, any new owner of the aforementioned properties may request such improvements no later than eighteen months after purchase of said property(s).

(h) Accreditation. The principal provider of air medical transport to MMC shall be accredited by the Committee on Accreditation of Medical Transport Systems or its successor agency. Providers using the helicopter landing pad shall be accredited by the Committee on Accreditation of Medical Transport Systems or its successor agency, unless special circumstances warrant a non accredited provider such as the Air National Guard, the U.S. Coast Guard or other users.

9. Signage shall comply with the requirements of sections 14-336 through 14-372.5 of the City Code, except as otherwise approved by the Planning Board under Chapter 14, Article V.

10. For the purpose of keeping surrounding residential areas apprised of its future development plans, and to address any neighborhood issues related to the operations of the **MMC** campus (including but not limited to complaints or operating issues with respect to the helipad and future planning and development programs associated with **MMC**), **MMC** shall, no less than quarterly, and with two weeks written notice, invite representatives of the Maine Medical Center Neighborhood Council to meet with designated representatives of **MMC**. For purposes of this requirement, the Maine Medical Center Neighborhood Council shall consist of two representatives of the Parkside Neighborhood Association, , two representatives of the Western Prom Neighborhood Association, and two representatives of the Gilman/Valley Streets neighborhood. The neighborhood organizations shall designate the persons who shall serve on the Maine Medical Center Neighborhood Council. In the event there is no formal neighborhood organization, the City Council District Councilor shall designate the persons to serve on the Maine Medical Center Neighborhood Council.

11. **MMC**, prior to occupancy of the Charles Street Addition, shall relocate the sewer serving 31 Crescent Street, as depicted on the Site Plan (Exhibit B). In addition, **MMC** shall provide two off-street parking spaces for use by the tenants of 31 Crescent Street for so long as 31 Crescent Street serves as a residential structure.

12. **MMC** agrees that it will make the parking garage contemplated within this Agreement available for use by the public for snow ban purposes in a fashion similar to that

required in its Congress Street/Forest Street parking garage. In addition**, MMC** shall require all of its vendors, contractors and subcontractors to utilize a parking garage or other approved parking area/facility for vehicles and truck parking during construction.

13. **MMC** agrees to divest itself of ownership of the following existing structures owned by **MMC** according to the following schedule:

Prior to the issuance of a certificate of occupancy for the Charles Street Addition:

15 Crescent Street (Map 53, Block F, Lot 6)
25 Crescent Street (Map 53, Block E, Lot 5)
25 Ellsworth Street (Map 53, Block H, Lot 2)
32 Ellsworth Street (Map 54, Block C, Lot 5)
20 Hill Street (Map 54, Block C, Lot 1)

No later than January 1, 2010 or the issuance of a certificate of occupancy for any of the future expansions described in Section 6(b) above, whichever is earlier:

19 Bramhall Street (Map 63, Block A, Lot 4)
23 Bramhall Street (Map 63, Block A, Lot 3)
25 Bramhall Street (Map 63, Block A, Lot 2)
31 Bramhall Street (Map 63, Block A, Lot 1)

The deadline for divestiture of any of such property may be extended by the Planning Authority if **MMC** demonstrates that reasonable good faith efforts to market the property instituted at least 6 months prior to the deadline have failed to produce a bona fide offer at or above fair market value and on commercially reasonable terms.

14 **MMC** agrees that it will remove the existing building located at 261-269 Valley Street (formerly the "Eagles Club") within 12 months after the effective date of this Agreement and that the site of the removed building will be loamed and seeded unless and until otherwise developed pursuant to an approved site plan.

15 **MMC** shall provide landscaping of the area surrounding its Vaughn Street parking lot as shown on the landscaping plan attached hereto as Exhibit G and shall construct, maintain and continue to own the "pocket park" located at Ellsworth and Charles Streets as shown on the Site Plan (Exhibit B). The improvements to the Vaughn Street parking lot shall be completed within 12 months of the effective date of this Agreement.

16. **MMC** agrees to allow public pedestrian access between its campus and Congress Street through a new enclosed stairway to be constructed adjacent to the New Parking Garage, as depicted on Exhibit B.

17.. **MMC** shall contribute $800,000 to the **CITY** to use for public improvements in the general vicinity of Maine Medical Center.

18.. MMC agrees that it will encourage its employees and visitors to use alternatives to single-occupant automobiles when traveling to and from the PROPERTY. In its application under the Site Plan Ordinance, MMC agrees to include among its written statements an Alternative Transportation Plan. The Alternative Transportation Plan will propose strategies to reduce single-occupant automobile trips to the **PROPERTY**. Such strategies shall include, but not be limited to, subsidies and other incentives for employees and visitors to use local and regional mass transportation, share rides (carpools and vanpools), ride bicycles and walk. The Planning Board will include the Alternative Transportation Plan in its consideration of sections 14-526(a)(1) and (2) of the City Code. In addition, an analysis of effectiveness and functioning of the Alternative Transportation Plan shall be provided to the City Council's Transportation Committee on an annual basis.

20.. The above restrictions, provisions and conditions are an essential part of the rezoning, shall run with the **PROPERTY**, shall bind and benefit **MMC**, its successors and assigns, and any party in possession or occupancy of the **PROPERTY** or any part thereof, and shall inure to the benefit of and be enforceable by the **CITY,** by and through its duly authorized representatives. Within 30 days of approval of this Agreement by the City Council, **MMC** shall record a copy of this Agreement in the Cumberland County Registry of Deeds, along with a reference to the book and page of the deeds to the property underlying said **PROPERTY**. Unless otherwise stated within this Agreement, this Agreement governs only the **PROPERTY** expressly covered by this Agreement and applies only within the boundaries of the rezoned area as shown on the map. Nothing in this Agreement shall have any effect on or be construed as having any bearing on the use or development of any other properties owned by **MMC** or its affiliates, all of which shall continue to be governed by the applicable provisions of the Portland Land Use Code, without regard to this Agreement.

21.. If any restriction, provision, condition, or portion thereof, set forth herein is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct and independent provision and such determination and shall not affect the validity of the remaining portions hereof.

22.. Except as expressly modified herein, the development, use, and occupancy of the **PROPERTY** shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

23.. This conditional rezoning agreement shall be enforced pursuant to the land use enforcement provisions of state law (including 30-A MRSA 4452) and **CITY** Ordinance. No alleged violation of this rezoning Agreement may be prosecuted, however, until the **CITY** has delivered written notice of the alleged violation(s) to the owner or operator of the **PROPERTY** and given the owner or operator an opportunity to cure the violation(s) within thirty (30) days of receipt of the notice. Following any determination of a zoning violation by the Court, and in addition to any penalties authorized by law and imposed by the Court, either the Portland Planning Board on its own initiative, or at the request of the Planning Authority, may make a recommendation to the City Council that the Conditional Rezoning be modified or the **PROPERTY** rezoned.

24.. In the case of any issue related to the **PROPERTY** which is specifically addressed by this Agreement, neither **MMC** nor their successors may seek relief which might otherwise be available to them from Portland's Board of Appeals by means of a variance, practical difficulty variance, interpretation appeal, miscellaneous appeal or any other relief which the Board would have jurisdiction to grant, if the effect of such relief would be to alter the terms of this Agreement. In cases that fall outside of the above parameters (i.e., alleged violations of any provisions of Portland's Land Use Code, including, but not limited to, the Site Plan Ordinance, which were neither modified nor superceded by this Agreement), the enforcement provisions of the Land Use Code, including, but not limited to, the right to appeal orders of the Planning Authority, Building Authority and Zoning Administrator shall apply. Nothing herein, however, shall bar the issuance of stop work orders.

WITNESS **MAINE MEDICAL CENTER**

_____ _____

By:
Its:

STATE OF MAINE
CUMBERLAND, ss. Date: _____, 2005

Personally appeared before me the above-named _____, in his capacity as _____ of Maine Medical Center, and acknowledged the foregoing instrument to be his free act and deed in his said capacities and the free act and deed of Maine Medical Center.

Before me,

_____
Notary Public/Attorney at Law

C:\Users\Tim\Desktop\FINAL Contract 4.25.05 cra new patient visitor.odt

Portland Maine Yes. Google's good here.

James Dealaman <jdealaman@portlandmaine.gov>

Fwd: PB hearing on IOZ new ordinance

1 message

Jean Fraser <jf@portlandmaine.gov> Tue, Mar 28, 2017 at 2:18 PM
To: James Dealaman <jdealaman@portlandmaine.gov>

This is PC 22 and the one I have already copied (paper copies) for the Board meeting- just needs to go into your other system. thanks, Jean

---------- Forwarded message ----------
From: **moses sabina** <mosessabina@yahoo.com>
Date: Tue, Mar 28, 2017 at 1:16 PM
Subject: Re: PB hearing on IOZ new ordinance
To: Jean Fraser <jf@portlandmaine.gov>

Jean,

Here are some comments for the planning board meeting:

Portland Planning Board,

My name is Moses Sabina, I am an owner/resident of 4 Gilman St. I have the unique perspective of participating in the MMC Neighborhood Council since its inception, longer than any other neighbor or MMC staff. I am concerned that the language in the IOZ regarding neighborhood engagement is too vague. The IOZ calls for a plan for neighborhood engagement. Who decides what is acceptable? What is the mechanism for institutional accountability?

Here are some examples of instances when MMC has either exploited a loophole in the CRA or attempted to with little to no accountability.

1. The Retail Space: The current CRA required MMC to create a retail space as part of the new visitor garage on Congress St. The retail space was called for by neighbors and the planning board. After sitting vacant and completely undeveloped (it has a dirt floor to this day), I made it a point to check in on the progress of finding a tenant for it nearly every quarterly meeting. MMC reported that they had many interested parties over the years, but no lease was ever signed. MMC conducted a survey of their staff asking what type of business would be beneficial. One meeting their real estate listing agent, Mark Malone, told us that the asking price was too high. After many years of updates on the retail space, neighbors and I finally had the opportunity to ask Rich Peterson about it; he informed us that MMC had no intention of leasing the space, and never had. In this case, MMC fulfilled their obligation in the CRA by creating the space, but ignored the intentions of the community and opportunity to house a neighborhood business.

2. Snow Ban Parking: MMC is required by the city to provide snow ban parking in both the new visitors garage and the Forest St Garage. The record as to how many spaces they are required to provide is unclear, yet MMC has manufactured their own number. MMC has closed a nearly empty Forest St garage during parking bans, prohibiting neighbors from parking there. This is an issue we thought we had worked out in the quarterly meetings, but it occurred again this winter. To their credit, after phone calls were made, the garage was re-opened.

3. Sportsman's Lot: Though the CRA prohibits MMC from expanding their footprint, they attempted to buy the lot across the street from the employee garage, formerly the site of the Sportsmans restaurant. This decision was announced to the Neighborhood Council in a meeting. After reviewing the CRA, I brought the issue to Penny Littell, who at that time was on the Portland City legal department. MMC was disallowed from purchasing the property. They claimed that they didn't understand the CRA. It's pretty clear. It draws a line which says, across this you do not! [chapter 1, page 5]. The fact that they made the attempt speaks volumes to the need for regulation and enforcement. If I had not raised the issue, I'm not sure whether anyone else would have. Where today stands a thriving neighborhood restaurant in Salvage BBQ, could be another MMC owned building, another dune in the urban desert, which contributes nothing to the neighborhood street scape.

4. The Current Proposed Expansion Project: The IOZ calls for neighborhood engagement, and one shape that could take is a quarterly meeting like the one I have been engaged in with MMC for roughly ten years. That's a lot of my time donated to hospital neighborhood relations; time that I would like to think has not been wasted. It's hard to think that

when I hear Jeff Sanders from MMC state that they've been working on the current proposed expansion project for a year and a half; that six quarterly meetings that nary a whisper of this project was uttered in meetings which are required by the CRA for the express purpose of "surrounding residential areas apprised of future development plans" [CRA chapter 10, page 11]. They have an urgent need for single occupancy rooms, there is no denying that. I want my local hospital to be the best it can be, who doesn't? It is, however, hard to hear the cries for urgency in the city planning process when they ignored the opportunity for neighborhood feedback in mandated meetings with neighbors who they know and have been engaging with regularly for years. Somewhere, in the IOZ or not, there needs to be very specific language regarding neighborhood engagement, and oversight of the engagement, otherwise we will continue the pattern of wasted time and missed opportunity. We now hear MMC is looking at some alternative to the proposed project; how much time and money was wasted getting to that decision? Whether they wanted to hear it from us or not, neighbors and MMC could have had that discussion a year and a half ago.

5. TDM Reports: The CRA [chapter 18, page 13] calls for annual TDM reports to be submitted to the city. We haven't had any discussion of TDM in our quarterly meetings in a long time.

Please consider making the IOZ more specific with regard to neighborhood engagement.

Respectfully,

Moses Sabina

From: Jean Fraser <jf@portlandmaine.gov>
To: "Fraser, Jean" <jf@portlandmaine.gov>
Sent: Thursday, March 23, 2017 2:29 PM
Subject: PB hearing on IOZ new ordinance

Hello

Further to my e-mail on March 13 (which advised about the postponement of this hearing to March 28th because of the storm) I am writing to advise you:

- the PB hearing will be at **4:30pm on Tuesday March 28th;**
- the agenda is attached for information;
- and that a very slightly revised text of the IOZ will be presented to the Board for consideration on Tuesday, and the final version will be placed on the City's website tomorrow by the end of the day at the following link:

  https://me-portland.civicplus.com/AgendaCenter/ViewFile/Agenda/_03282017-2001?html=true

[Please note that we have not yet received any further MMC submissions, and I will let you know when that specific project will next be discussed at a Planning Board meeting.]

Thank you - and please do not hesitate to contact me if you have any questions.

Jean

--
Jean Fraser, Planner
City of Portland
874 8728

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

PC1

April 18, 2017

Tuck O'Brien
Jean Fraser
City of Portland Planning Department

Re: Neighborhood Review of MMC IDP

Hello Tuck and Jean,

We write to share with you our group's review of the MMC IDP submitted April 7, 2017.

We've all spent multiple hours over the last several weeks focusing on the new IOZ with the goal of understanding its function and its intended benefit to the institutions, the city and the neighborhoods.

We then proceeded to the IDP. Each of us read the document on our own then divided up chapters for individual review. We convened and shared our understanding, our confusion and where appropriate our objection to language, data and positions taken by the hospital in the IDP.

We then drafted a two part document to cross reference and list our concerns.

The first part of the document examines the IDP on its own- *unrelated to the demands of the IOZ*. We've listed our objections, our questions and our concerns in the areas of height and massing, institutional expansion into our neighborhood, policies regarding snow ban parking, smoking, construction impact mitigation and the lack of involvement the neighbors have been allowed relating to design, construction management and infrastructure impact.

Next, we returned to the IOZ and highlighted those areas where we found the IDP failed to meet the demands of the IOZ. From that highlighted IOZ, we drafted a list of questions and observations calling attention *by paragraph* to the IOZ demands that we believe are unmet.

(In addition to the two part document, we've attached our highlighted version of the IOZ including our notes.)

While we have submitted a list of questions to the hospital for discussion at the April 19 expansion meeting, (several of which cover topics found in our document here,) we feel this more in depth review of our concerns should be directed to you in the Planning Department.

Some of these questions may be answered at the Expansion Group meeting on Wednesday. Pending the outcome of that meeting perhaps we can get together the following week and speak to what questions and concerns may remain.

Thank you,

Tim McNamara
Sarah Martin
Moses Sabina
Garry Bowcott
Brian Stickney
Tricia Bisson
Jenny Mackenzie

The IDP on its own:

1.
We object to the one hundred and fifty foot height proposal for the Gilman block. Page 116
No matter what is built there and no matter how it is designed or setback, one hundred and fifty feet is too high for that block. Current zoning height allows for sixty five feet. Considering the homes along A Street that will sit directly opposite any construction on that block, the height restriction of sixty five feet should be maintained.

2.
We object to the boundaries outlined in the IDP extending to the two commercial blocks on Valley at Congress and Congress at Forest street. Pg 110
Further hospital expansion into these blocks would be detrimental to the neighborhood.
Development by the hospital of these two pivotal blocks would eliminate more than twenty residential units in a town desperately in need of housing units. Additionally, hospital development here would either displace or negatively impact existing businesses that serve as a draw and an attraction to our neighborhood.

Best case scenario would in fact be for the hospital to divest itself of the two lots it owns on Valley at A Street. This would free up that corner for possible mixed use housing/retail development by private ownership.

To include these two blocks in the sphere of potential expansion hurts this neighborhood at a time when we are beginning to become a more attractive destination for retail, hospitality, housing and other development.

We realize that property owners have the right to sell to whomever they choose. However, the removal of restrictions on hospital expansion in our neighborhood, exposes us to more of the institutional creep that the current zoning was crafted to prevent.

With the exception of those who would benefit from the sale of their property to a bidder of such resources as Maine Med, those of us who live here will suffer if the hospital is allowed to expand onto these two blocks.

The hospital has managed to budget over half a billion dollars for an expansion that takes place within their current footprint. In the event they see the need for further expansion we would suggest they consider the area of St John Street between Congress and Park Avenue as an alternative to the two blocks proposed.

3.
When will the public be able to view the drawings and plans for the expansion?
Page 94 references a "transparent bridge" connecting the Gilman garage to the main entrance. There is a drawing on page 91 showing what appears to be a span over the top of Gilman Street. We have asked for months about drawings and have been told there are none available. We've been assured that we would be involved in the discussion of design. The IDP is now showing conceptual drawings of a bridge over Gilman Street. This bridging of Gilman street has seen much discussion among neighbors and there are several concerns over the concept. We need to be in that conversation before plans are finalized.

4.
Parking garage demolition.
Page 99 schedules the demolition of the garage from June to December 2019.
We have been asking for months how and when the garage will be removed and how we might prepare for this event. From a *construction impact* point of view, the demolishing of that structure will have the greatest *impact* on the surrounding neighbors quality of life. Seven months of demolition will pose the greatest risk of damage to our buildings and months of disruption, vibration, dust and noise will most likely result in losses to business and great difficulties leasing or re-leasing to tenants. We have asked if the garage would be imploded or taken down with wrecking balls and jackhammers. We've asked how long the demo might take. Businesses and landlords in the area have expressed great concern over potential hardships resulting from this action. This too is a conversation we need to be involved in and apparently we are not.

5.
Smoking
The language prepared by the hospital on page 102 and the actions they claim to be taking fall well short of addressing this problem. The campus wide ban on smoking has resulted in hospital patients, visitors and staff leaving campus for the purpose of smoking on our city streets and sidewalks as well as oftentimes our private property. This is a dynamic that has

many neighbors unhappy. Exposure to second hand smoke and piles of cigarette buts on our streets and sidewalks is the result of the hospital policy forcing their people to smoke off campus. We are told by the hospital that all across the city people are dealing with unwanted smoke and we are asked to believe that the hospital isn't even sure if the people smoking around its facility are associated with MMC. We are asked to believe that proactive walkabouts are taking place and that a vendor is working 4 to 6 hours every Monday, Wednesday and Friday to pick up butts. If this IDP document is to be considered credible, this piece needs to be completely redone.

6.
Snow Ban Parking
Pages 93 and 102 address the issue of Snow Ban Parking. To be clear, current zoning states that "**MMC** agrees that it will make the parking garage contemplated within this Agreement available for use by the public for snow ban purposes in a fashion similar to that required in its Congress Street/Forest Street parking garage." The hospital has failed to meet this commitment in the past and often times has locked people out of accessing either garage during a snow ban. Page 93 references abuse by neighbors in the past. We know of no one in any of our organizations who were part of the group "abusing" the free use of the MMC garage. We fully agreed with MMC when we heard about unauthorized cars having been removed from their garages. We heard of the towing well after the fact and MMC never asked us if we knew who might be illegally parking in the lots. As far as we "neighbors" know...those vehicles could have been employees, or visitors or any opportunist with an eye on using a wide open, un-monitored parking garage to store their vehicle.

The language on page 122 essentially says that the hospital will offer neighbors space in the 887 Forest Street garage during snow ban parking so long as such spaces are not needed to service MMC. This is not good enough. When both 887 Congress Street and the new patient and visitor garages were built, the understanding between the city and the hospital was that snow ban parking would be made available in both. To put a condition such as the hospital has on use by neighbors runs counter to what has been a long standing mandate.

7.
Page 66
I'm not sure what is trying to be said in the bottom half of the text on the left side of the page but it does not make sense.

8.
Page 34
The two charts on this page we find misleading and confusing. Shouldn't peer comparisons involve institutions of similar size, geographical location, demographics, etc? Why aren't Dartmouth Hitchcock and UMass Memorial included? Also, since the purpose of the charts are to prove MMC's need for parking, shouldn't they both include the same "peer" institutions when referencing inpatient parking demand and employee parking demand?

9.
Pages 116, 117,60
The Gilman garage is shown on page 60 as extending down to St John Street. I think this is just an error in labeling Valley Street as St John. Valley and St John streets are flip flopped on pages 116 and 117 as well.

10.
Page 83
Table 5.1 references potential on site roof top energy production? We've not heard about this. Will this generate noise or vibration? Is this wind power? Solar?

As the IDP relates to the demands of the IOZ

14-277 (c)(g)Purpose of the Institutional Overlay Zone
According to the purpose statement on page 1 the IOZ intends to ensure that institutional growth "complements" and "integrates " as well as looks to the "need" of adjacent neighborhoods through carefully planned transitions and unique regulatory requirements. We don't see that the IDP accomplishes that. In fact while the IDP speaks of transitions there is no example demonstrating how such transitions will be achieved.

14-280 (b) IDP Planning Horizon
Other than the plan that has been proposed for development within the current footprint, the only other outline of the

anticipated growth is the drawn boundary lines around the two lots discussed above. Isn't the IDP supposed to be more specific as to what the institution's actual plans for future development are?

14-280(c)1b v
The square footage of the parking garages has been omitted from the IDP.

14-280 (c)1 c ii
14-280(c) 2 b i b/c
This calls for a traffic study and the IDP does not contain a traffic study. If the institution is able to defer this study until the Site Plan review then why does the IOZ demand it?

14-280 (c)1d
Third on our list of public concerns behind a thirteen story garage and unfettered hospital expansion is mitigation of the construction impact on our buildings, our tenancies and our businesses. We had expressed the need for baseline engineering reads on properties that might suffer damage from demolition vibration, pile driving and all other related construction impact. We had also asked for remedies to business interruption owing to construction impact. These concerns are not reflected in the IDP. (see page 51)

14-280 (c) 2 b 1 b, c
Traffic study required to meet this demand.

14-280 (c) 2 b ii b Environment
We cannot find language in the IDP addressing the generating and the effect of vehicle exhaust on the neighbors from the new proposed parking structure.

14-280 (c) 2 b iii Infrastructure
More is needed to provide baseline information on the conditions of the surrounding roadways and how they will hold up under the additional traffic -both during construction and long term.

14-280 (c) 2 b iv a, b, c, d Design
a. Wind and shadow issues insufficiently addressed in the IDP. We should see the studies relative to wind and shadows as they relate to the new construction.(see pages 90, 91)

b. Transition areas? Unclear where in the IDP this is addressed.

c. CPTED-This chapter should be modified to include commitment by the hospital to staffing the entrances to parking areas, providing a visible security presence on the grounds and in the garages and adding language specifically addressing the problems of prostitution, vagrancy and suicide on hospital property. (page 94)

d. Environment /public realm plan on page 95 consists of two drawings. It is unclear what the drawings are supposed to represent.

14-280 (c) 2 b v Neighborhood Engagement
a. The language on page 98 is the same language present in the current Conditional Rezone Agreement. This language failed to work as intended. For example, neighborhood representatives were not told of the five hundred million dollar expansion until a day before the news was released to the press. This project had been in motion for months or years before neighbors were informed of its scope or its scheduling. The question of how the hospital is to be held to its commitments, its mandates and the terms of the city code has been asked in front of the Planning Board by neighbors. This chapter needs refining with language that can actually hold the hospital accountable for performance.

c. The question of assuring communication pertaining to property acquisition continues to perplex us. How is it that an institution is to share acquisition /disposition info and still protect itself as a buyer or seller? We are unsure where or if this is addressed in the IDP.

d. Relating to construction management, our obvious concerns over the demolition of the garage are expressed earlier in this document. Pages 99-101 are an attempt at a construction management plan but really say nothing. For example construction will take place Monday through Friday seven am to six pm... Unless there is a need to work after six pm or on Saturdays or Sundays.
Or this example..."MMC is committed to mitigating construction noise impacts. Increased community sound levels,

however, are an inherent consequence of construction activities. When these events are scheduled, advance notice will be provided." This paragraph requires much more in the way of detailed mitigation measures to be undertaken by the hospital during construction.

14-280 (d) Standards of Review
5. We don't see how traffic impacts have been anticipated without a traffic study on hand.
7. What are the potential cumulative environmental impacts and where are they addressed in the IDP
9. As we have not seen anything in the way of a comprehensive design it is impossible to discuss transitions within the neighborhood.
10. In the event the hospital boundary is expanded to include the two blocks in question then compatibility, maintaining housing and the support of local amenities will not be possible.
11. Ditto

14-281 Regulatory Framework
(d)
4. Without graphics, sketches or plans it is impossible to speak to the transition zones.
5. Requires traffic study.
8. This paragraph in the IOZ addresses the requirement of clarifying building placement and massing and again discusses the transition zones. Without plans or drawings, it is impossible to do any of this.

9. Pages 99-101 offer insufficient detail as asked by the IOZ. Buffering is not addressed neither is mitigating the impact of construction on neighboring properties.

DIVISION 16.1. INSTITUTIONAL OVERLAY ZONE (IOZ)

14-277. Purpose of the Institutional Overlay Zone

The Institutional Overlay Zone (IOZ) designation provides a regulatory mechanism available to the city's four major medical and higher education campuses where an improved regulatory structure is needed to facilitate a consistent, predictable, and clear growth management process. The purposes of the Institutional Overlay Zone are to:

(a) Acknowledge that the city's major academic and medical institutions play a prominent role in the health and well-being of the local and regional community, and in order to sustain that role, these institutions need flexibility to change and grow;

(b) Encourage proactive planning for institutional change and growth which identifies and addresses likely long-term institutional needs and cumulative impacts while leveraging potential benefits at the neighborhood, city, and regional level;

(c) Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions;

(d) Support the formation and continuation of mutually beneficial public-private cooperation;

(e) Support an ongoing public engagement process that benefits both the institutions and nearby neighborhoods;

(f) Reflect Comprehensive Plan and other policy objectives; and

(g) Provide a consistent regulatory approach to all major institutions which allows unique regulatory requirements that balance the particular needs of institutions with the needs of the surrounding neighborhood and wider community.

14-278. Location and Applicability

The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones. The Eligible Institutions are the two major hospital institutions of Maine Medical Center and Mercy Hospital and the two major academic institutions of University of Southern Maine and University of New England, their successors and assigns. Designation as an IOZ is the preferred mechanism where the Eligible Institution's proposed development is inconsistent with the existing zoning.

14-279. Establishment of an Institutional Overlay Zone

(a) Application for an Institutional Overlay Zone. Where the Eligible Institution seeks designation as an IOZ, they shall submit a zone change application consisting of two components:

1. An Institutional Development Plan (IDP) (see Section 14-280).
2. A Regulatory Framework (see Section 14-281) that would, when and if adopted, be the text and map amendment to the City's Land Use Code and Zoning Map.

(b) Required Public Involvement. At least two neighborhood meetings shall be required. The first shall be held prior to the formal submission of a zone change application for an Institutional Overlay Zone and the second shall be held during the City's review. Meetings shall identify the concerns, if any, of affected residents and property owners, and inform the development of the Institutional Development Plan (IDP) and Regulatory Framework. Meetings shall be held in a convenient location proximate to the institution. The applicant shall provide written notification to property owners of record within 500 feet of the proposed IOZ boundary at least ten days prior to the meeting dates and maintain written records of the meetings.

(c) Required Scoping Meeting. The Eligible Institution shall meet with the Planning Authority after the first required neighborhood meeting and prior to submission of the zone change application to confirm the focus of the Institutional Development Plan (IDP) and Regulatory Framework, including associated study areas that may be outside of the proposed IOZ boundary. The IDP and Regulatory Framework will vary in detail and focus depending on the Eligible Institution and its particular context. The content requirements in Sections 14-280 and 14-281 and the comments from neighborhood meeting(s) shall provide direction for the content of the IDP. The Planning Authority or Planning Board may require additional information or modify content requirements as is relevant to the Eligible Institution (see Section 14-280(c)).

(d) Reviewing Authority.

1. The Planning Board shall review the zone change application, including the IDP and Regulatory Framework. At least one public workshop and a public hearing before the Planning Board are required.
2. Upon recommendation of the Planning Board, the City Council shall review and consider adoption of the Institutional Overlay Zone and the accompanying Regulatory Framework as an amendment to the city's code of ordinances.

(e) Future Institutional Development.

1. All new development by the Eligible Institution within the boundary of the IOZ shall be compliant with the IOZ and accompanying Regulatory Framework, consistent with the IDP, consistent with the Comprehensive Plan, and meet applicable site plan standards, unless such standards are superseded by the Regulatory Framework.
2. Any use/development proposed by the Eligible Institution outside the IOZ boundary that complies with the zoning for permitted uses in that location shall be reviewed under the standards of that zone. Any use/development proposed by an Eligible Institution outside of the IOZ boundary that is proposed in a residential zone and is functionally related to the operations within the IOZ shall be addressed by the IDP and require an amendment to the IDP.

14-280. Institutional Development Plan *(IDP)*

(a) Purpose. Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the Planning Board in accordance with this ordinance. The purpose of the IDP is to establish baseline data about institutional land uses, facilities, and services and measure, analyze, and address the **anticipated or potential impacts** of planned institutional growth and change. The IDP shall serve as a background document that supports the proposed Regulatory Framework and frames subsequent site plan review(s).

(b) Planning Horizon. An IDP shall provide the city and abutting neighborhoods with a clear outline of the anticipated or potential growth and change of the Eligible Institution for the short- to medium-term (e.g. 1-5 and 5-10 years respectively), as well as a conceptual growth plan for the long-term (e.g. 10 years or more); however, the specific planning horizons for each institution will be determined as part of the IDP approval process.

(c) Content. The IDP submission shall address the following elements unless specifically modified by the Planning Authority or Planning Board, with the scope and level of detail to be clarified at the required Scoping Meeting:

1. Context Information
   a. The institution's adopted mission, vision, or purpose statement
   b. A summary of relevant baseline data on the institution, including:
      i. A neighborhood context plan **(pgs. 92-93)**; ii. An inventory of current programs and services; iii. A current census of the number of people using the institution (e.g., employees, enrollment, patients), with an indication of maximums and minimums over time;
      iv. An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking);
      v. An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities. **(pg 22. garage sq. footage?)**
   c. A summary of the baseline characteristics of the existing campus and context of the institution, based on identified study areas, including:
      i. A summary of existing resources, such as historic, open space, and natural resources;
      ii. A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization; iii. A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues;
      iv. Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth.
   d. A summary of public involvement in the development of the IDP, including major areas of public concern. **(pgs. 51, 102)**

2. Assessment of Future Institutional Growth and Change

a. A description of institutional needs and areas of future institutional growth and change, including:

i. Projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time);

ii. Institutional objectives for property both within and outside the IOZ boundary (e.g. acquisition and/or disposition) **(Pizza Villa and Salavge?)**, including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus; and iii. A Development Plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary of the IOZ and any phasing of the development.

b. Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the Regulatory Framework:

i. Transportation and access

a. An analysis of the projected changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan;

b. An analysis of the projected changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety; **(pg. 93)**

c. A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet

transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required.

ii. Environment

a. An analysis of potential cumulative impacts on natural resources and open spaces;

b. An analysis of projected energy consumption, hazardous materials generation, noise generation, and similar issues **(car exhaust)** as relevant;

c. An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation.

iii. Infrastructure

a. An analysis of projected public utility demand and the capacity of associated infrastructure; **(pg. 45 roads, storm drains, etc.)**

b. An analysis of projected public safety needs and projected impacts to the capacity of these services;

c. An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.

iv. Design

a. An analysis of projected impacts to neighboring properties and public spaces, including potential shadow, wind, and lighting impacts, impacts of height and massing, and impacts to historic resources;

b. An analysis of transition areas between the institution and adjoining neighborhoods, including identification of key character

defining components of the surrounding context;

c. An analysis of existing Crime Prevention Through Environmental Design issues and identification of how these principles would be addressed as part of the proposed campus development; **(prostitution, suicide, vagrancy, and graffiti)**

d. A conceptual built environment/public realm plan, representing the synthesis of the analysis and including a set of guidelines for urban design, landscape, open space, and streetscape treatments, with particular attention to the treatment of edges (both within and abutting the IOZ boundary) to achieve compatible transitions.

v. Neighborhood Engagement

a. A plan for ongoing community engagement that represents best practices, promotes collaborative problem solving around community concerns, fosters transparency, and identifies mechanisms for neighborhood feedback and institutional accountability;

b. A property management framework that identifies the institution's process for handling operational property issues with neighbors; **(graffiti policy, trash, cigarette butts, prostitution, vandalism, vagrancy, suicides)**

c. Strategies for assuring communication pertaining to property acquisition and disposition in surrounding neighborhoods;

d. **A set of construction management principles, to apply to all institutional construction, that represent best practice, aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a**

clear communication strategy is in place in advance of construction.

(d) *Standards of Review.* The IDP shall:

1. Address all content requirements, unless explicitly modified by the Planning Authority or Planning Board;
2. Reflect the issues/topics identified in the required public process;
3. Demonstrate consistency with the city's Comprehensive Plan and the purpose of this ordinance;
4. Demonstrate how the property ownership, proposed growth, and requested Regulatory Framework relate to the institution's mission;
5. Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands;
6. Outline an approach to open space, natural, and historic resources that supports preservation and enhancement.
7. Demonstrate that potential cumulative environmental impacts have been anticipated and can be minimized or satisfactorily mitigated;
8. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated;
9. Reflect a comprehensive design approach that ensures appropriate transitions with the existing or future scale and character of the neighboring urban fabric;
10. Promote compatibility with existing or future uses in adjacent neighborhoods, **maintain housing**, and support local amenities;
11. Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure;
12. Conform with Portland's Historic Preservation Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts, or historic landscapes, the IDP shall be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity; and

13. Incorporate strategies to support clear communication and ongoing public engagement between institutions and nearby neighbors.

(e) Approval. Upon finding that an Eligible Institution's IDP meets the standards of review, the Planning Board shall approve, approve with conditions, or deny an IDP.

(f) Monitoring. The IDP shall establish a schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP, and identify thresholds for IDP amendments;

(g) Amendments. An approved IDP shall guide campus development unless and until amended. If at any time the Eligible Institutions request minor amendments to an approved IDP, the Planning Authority may approve such minor amendments, provided that they do not constitute a substantial alteration of the IDP and do not affect any condition or requirement of the Planning Board. The applicant shall apply with a written statement of the proposed amendment and proposed amended IDP to the Planning Authority, whose decision as to whether the amendment is minor shall be final. Major amendments shall be reviewed by the Planning Board. When the IDP is amended, the baseline data in the IDP shall be updated as appropriate.

14-281. Regulatory Framework

(a) Purpose. The Regulatory Framework translates the IDP into a set of clear and specific zoning requirements for the IOZ that constitute the text and map amendments to the City's Land Use Code and Zoning Map. The zoning requirements are anticipated to include parameters that guide the growth and change of the institution as well as broad strategies to address potential impacts, with plans and details to be developed under site plan review.

(b) Applicability. The Regulatory Framework shall apply only to properties that are within the IOZ boundary and to which the Eligible Institution holds right, title, or interest. For these properties, the Institutional Overlay Zone shall supersede the underlying zoning, and all new institutional development shall be conducted in compliance with the Regulatory Framework and the approved Institutional Development Plan. Properties located within the Institutional Overlay Zone not subject to right, title, or

interest of the Eligible Institution shall continue to be governed by the regulations of the underlying zoning designation.

(c) Uses. Institutional uses, including hospitals and higher education facilities, shall be permitted, as shall uses that are functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use, consistent with the applicable approved IDP.

(d) Content. The Regulatory Framework shall reflect the information and analysis of the IDP. The content shall be tailored to address the particular issues associated with the institution and its neighborhoods. The Regulatory Framework should be succinct and use tables and graphics as possible to address the following, if applicable:

1. *Zoning boundary of the IOZ*: The area to which the regulations apply, as shown on the zoning map, subject to other provisions of this ordinance (i.e. the map amendment to the City's Zoning Map);
2. *Phasing and schedules:* Requirements that relate to particular proposed phases; a chart showing the schedule or thresholds for submitting an amended IDP (or elements of an IDP, such as a Transportation Demand Management (TDM) Plan);
3. *Uses:* Clarification, as necessary, on permitted uses.
4. *Dimensional Requirements*: Graphics, sketches, or standards, including details for transition zones within the IOZ boundary;
5. *Transportation*: Elements such as TDM trip reduction targets or contribution to area-wide TDM measures; broad parameters for ensuring pedestrian, vehicular, bicycle and transit access and safety; parking ratios and management strategies; thresholds for access improvements;
6. *Environment:* The approach to the inclusion of open space and preservation of environmentally-sensitive areas;
7. *Mitigation measures*: The broad approach to identified mitigation measures, which would be addressed in greater detail in the site plan review process; thresholds for addressing deficiencies; goals for preservation/protection;
8. *Design*: Graphics and standards to clarify building placement and envelope (height and massing); guidelines for integration of site features; required treatments for transition zones and treatment for all edges (both within and abutting the IOZ boundary);

guidelines for establishing campus identity; and **(no detail!)**

9. *Neighborhood Integration:* Thresholds and strategies for neighborhood engagement; mitigation of impacts on neighboring properties, including construction impacts; buffering requirements; objectives for pedestrian linkages and safety; other requirements that address community concerns. **(no detail!)**

10. *Monitoring:* A schedule for regular monitoring reports on IDP implementation in accordance with the IDP.

(e) *Standards of Review:* The Regulatory Framework shall:

1. Be consistent with the Comprehensive Plan and the Institutional Development Plan;
2. Provide a clear zoning framework, using graphics and tables as appropriate, to apply to future site plan reviews;
3. Provide specific regulatory statements as appropriate that respond to concerns raised during the required public involvement; and **(construction mitigation)**
4. Outline measurable goals and thresholds for improvements or other actions identified in the IDP to be advanced in subsequent site plan applications.

(f) *Approval/Adoption.* The Planning Board shall review the proposed Regulatory Framework against the standards of review and make a recommendation on the institution's IOZ designation and Regulatory Framework to the City Council for adoption as part of this zoning ordinance.

(g) *Amendments.* A Regulatory Framework and IOZ boundary as adopted by the City Council shall remain in force unless and until amended. Amendments to a Regulatory Framework and/or IOZ boundary may be brought forth by the city or Eligible Institution. Amendments brought forth by the city will require a supermajority of the City Council to take effect. Proposed amendments to the IOZ boundary or Regulatory Framework shall be reviewed by the Planning Board and adopted by the City Council subject to the provisions of this ordinance.

14-282. Regulatory Frameworks of Eligible Institutions as adopted by the City Council

Att. A

Maine Medical Center

MaineHealth

Office of the Executive Vice President and Chief Operating Officer

Chair Elizabeth Boepple and
Members of the Portland Planning Board
c/o City of Portland Planning Department
389 Congress Street
Portland, Maine 04101

April 7, 2017

RE: Maine Medical Center's Institutional Development Plan (IDP)

Dear Chair Boepple and Members of the Portland Planning Board:

Maine Medical Center is pleased to submit Draft #2 of its Institutional Development Plan (IDP). As you know, for the past six months MMC has been diligently working with City staff, our neighbors and the public to create an IDP which meets the requirements of the soon-to-be-adopted Institutional Overlay Zoning text.

MMC is proud of the IDP document being submitted, which will guide its future operations and development. The document was not created in isolation, however. MMC has incorporated input from its neighbors, from City staff, as well as from other institutions, to create this guiding document. We believe it is nearly complete and welcome receiving your thoughts and input at the April 25, 2017 Planning Board workshop.

One area that our neighbors have consistently raised as a concern throughout this process is the height of the Gilman Block parking garage. Under MMC's existing Contract Zone, this was the only area available to MMC to build parking sufficient to meet its parking demand. Following dialogue with our neighbors, and listening to apprehension raised by the scale and massing of the proposed garage in that location, the Hospital is actively engaged in considering two alternative sites, in addition to the Gilman Block, to build a garage to meet its parking needs: 1.) the MMC South Lot at the corner of Bramhall and Chadwick Streets and 2.) 222 St. John Street owned by East Brown Cow Inc. MMC is undertaking a feasibility analysis to determine whether these sites -or a combination of them- could meet some, or all, of the Hospital's requirements. It is hoped the results of those studies will be completed shortly and incorporated into the MMC IDP.

Thank you in advance for your time and consideration in the review of MMC's IDP.

Sincerely,

Jeff Sanders

Jeffrey Sanders
Chief Operating Officer, MMC
Enc.

22 Bramhall Street, Portland, Maine 04102-3175 • (207) 662-2491
sandej4@mmc.org • www.mmc.org

Att. B

Maine Medical Center
MaineHealth

Institutional Development Plan

DRAFT FOR PLANNING BOARD REVIEW / APRIL 7, 2017

DRAFT

Maine Medical Center
MaineHealth

Institutional Development Plan

DRAFT

Purpose

This Institutional Development Plan was prepared by Maine Medical Center (MMC) to comply with the Institutional Overlay Zoning (IOZ) requirements of the City of Portland Code of Ordinances.

Date

Draft For Planning Board Review / April 7, 2017

Term

This document is valid until superseded by an approved update.

This document was prepared for Maine Medical Center by Perkins+Will with input from Maine Medical Center, VHB, Gorrill Palmer, and Sebago Technics, Inc. MMC would like to thank its neighbors and the City of Portland for their contributions to the Institutional Development Planning Process.

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CHAPTER ONE

INTRODUCTION

Maine Medical Center has been a Portland landmark and a destination for excellent health care since it was built as Maine General Hospital in 1874. The campus has grown in size and complexity within its footprint to meet growing demand and changes in healthcare technology and care delivery.

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ABOUT MAINE MEDICAL CENTER

Maine Medical Center (MMC) is a complete health care resource for the people of greater Portland, the entire state of Maine, and northern New England.

Incorporated in 1864, MMC is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people. MMC's unique role as both a community hospital and a tertiary referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

The MMC care model includes the state's largest multispecialty medical group, Maine Medical Partners. Maine Medical Partners provides a wide range of primary, specialty, and subspecialty care delivered through a network of more than 40 locations throughout Maine.

Maine Medical Center is named one of "America's Best Hospitals" by U.S. News & World Report. MMC's Trauma Center is the busiest in Maine, providing the most advanced tertiary care in the state.

Mission, Vision and Values

Maine Medical Center is dedicated to maintaining and improving the health of the communities it serves by:

- Caring for our community
- Educating tomorrow's caregivers
- Researching new ways to provide care

We proudly carry our unique responsibility as Maine's leader in patient care, education and research. We are dedicated to the traditions and ideals of not-for-profit healthcare. Our care is available to all who seek it.

Our efforts to execute on our Mission are aimed at achieving a simple, yet powerful Vision: "Working together so our communities are the healthiest in America."

We are guided by our Values, which call on us to meet and exceed the expectations of those we are privileged to serve. Our Values:

- Patient-Centered
- Integrity
- Ownership
- Excellence
- Respect
- Innovation

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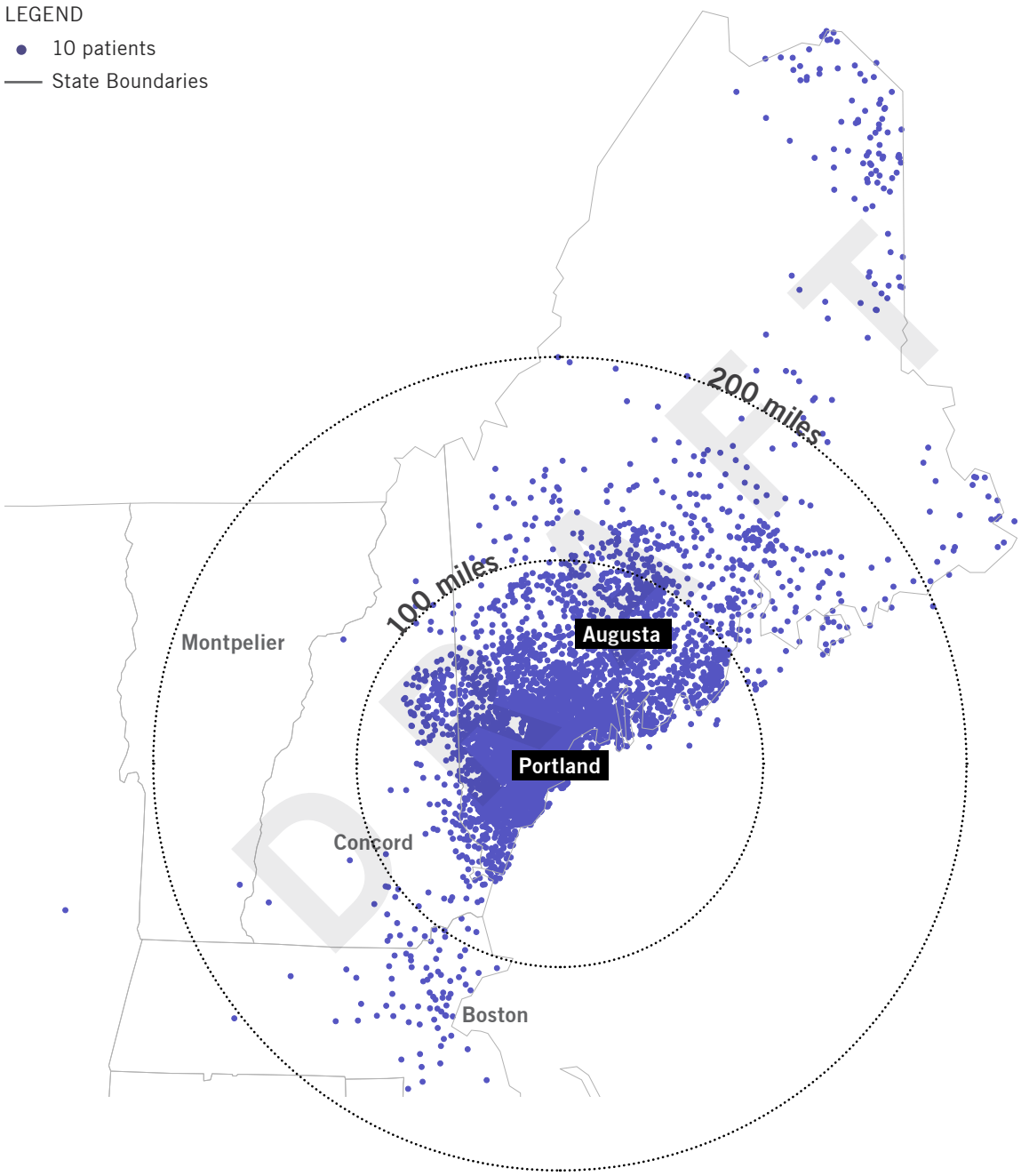
Fig.1.1 Dot Density Map Showing Patient Origin by Zipcode (2016)



History

Maine Medical Center opened its doors in 1874 as Maine General Hospital on Bramhall Hill, at the northern end of the tree-lined Western Promenade and adjacent to the Bramhall Reservoir.

The campus, designed by architect Francis Fassett, included four pavilions around a central administration building. The east pavilion and two outbuildings were erected first, providing patients with sweeping views of Casco Bay and the Fore River. The hospital was designated as the training facility for the Portland School for Medical Instruction and the Medical School of Maine at Bowdoin College, and had its own School of Nursing. Built of red-brick in Italian Gothic style, Maine General soon became a local landmark and a destination for the most up-to-date medical care in the state.

The opening of Union Station (1888) down the hill at Congress and St John Streets brought commercial uses to the area, improving access to the hospital. The hospital also catalyzed development of the area with medical uses (such as the 1891 Maine Eye and Ear Infirmary) as well as residential uses. The Western Promenade neighborhood gained prominence at the turn of the century as high-end homes and apartment buildings were built near the hospital and improvements were

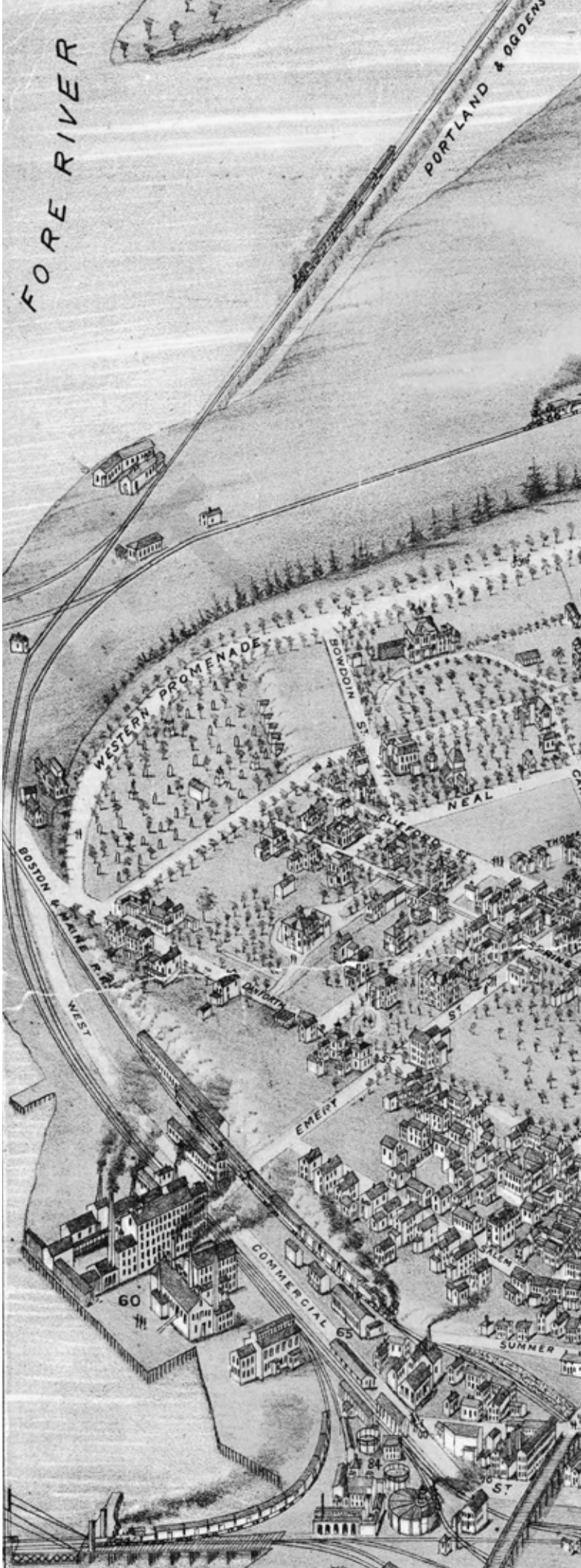


Fig.1.2 1876 Bird's eye view of Portland.

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MAINE CENTRAL R.R.
ST. JOHN ST.
CARTER
WEYMOUTH
ELLSWORTH
WESTERN PROMENADE
BRAMHALL ST.
CHADWICK ST.
WEST ST.
BRACKETT ST.
VAUGHAN ST.
PINE ST.
CARLETON ST.
CUMBERLAND
GROVE ST.
SHERMAN
GRANT
PORTLAND ST.
MELLEN AVE.
STATE ST.
DEERING
CONGRESS
SPRING
CLARK ST.
STATE ST.
DANFORTH ST.
PARK
HIGH ST.
YORK ST.
SOUTH ST.
10
11
25
28
59

made to the Western Promenade parklands. Maine General Hospital modernized its facilities through the 1920s and added a third pavilion in 1929.

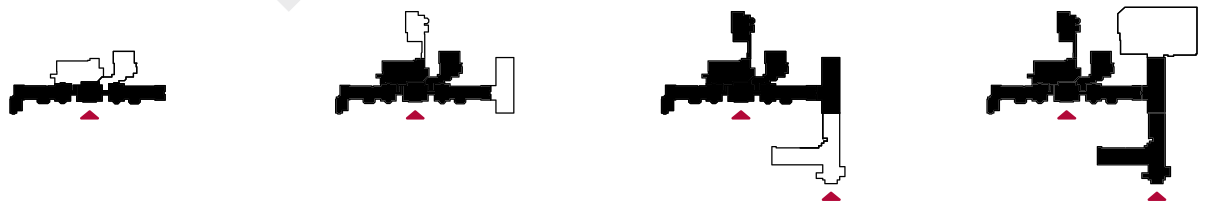
In 1951, Maine General Hospital, the Maine Eye and Ear Infirmary, and Children's Hospital merged to become Maine Medical Center. Two new pavilions were added in 1956 to provide modern patient rooms. Suburban growth and the construction of interstate highways in the 1960s increased demand for parking at the Medical Center, which was met by converting the Bramhall Reservoir into a surface parking lot (current South Lot).

In 1968, MMC doubled the size of its facilities with the addition of the eleven-story Richards Wing. The campus expanded its footprint down towards Congress Street with the addition of its first parking garage (now known as Employee Garage) in the 1970s. In the late 1970s, MMC became a teaching hospital for the University of Vermont College of Medicine.

In 1985, MMC opened the six-story L.L. Bean Building, another major addition to the campus. The Bean Building housed the new Neonatal Intensive Care Unit (NICU), operating suites, and specialty departments; it also now houses the Barbara Bush Children's Hospital (BBCH). The Dana Building was built in 1987, adding much-needed classroom and conference space to the campus.

Through the 2000s, MMC has renovated and expanded its facilities to meet its role requirements as the highest acuity provider of healthcare in the state. In 2008, MMC opened the 190,000 SF East Tower including new units for prenatal care, labor, delivery and recovery, neonatal intensive care, and

Fig.1.3 Historical evolution of Maine Medical Center



1890s **1920s** **1950s** **1960s**

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mother-baby units. The Emergency Department expanded into the basement of the East Tower the following year. The campus transformation project also included a new central utility plant and the 512-car Patient and Visitor Garage.

As its partnership with the University of Vermont came to a close, MMC initiated a new training program for medical students at the Tufts University School of Medicine in 2011. Today, MMC also hosts students from the Geisel School of Medicine at Dartmouth and University of New England College of Osteopathic Medicine.

In 2015, MMC completed construction on a portion of the LL Bean building roof to add new operating rooms and perioperative care beds.

Today, MMC is undertaking a new planning effort driven by the need to replace semi-private patient rooms with private rooms and to provide additional surgical capacity. The plan also provides an opportunity to address infrastructure needs, parking, wayfinding, and overall building organization to improve the delivery of care (see **Chapter 3** for details).

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1970s **1980s** **2000s** **PRESENT DAY**

Fig.1.4 Bird's Eye View of the Campus in Context, Looking North

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CHAPTER TWO

EXISTING CONDITIONS + CONTEXT

Maine Medical Center campus is located on a high point in the west end of the Portland peninsula that is easily accessible from I-295 and Congress St. Its dense, urban context includes historic landscapes and neighborhoods as well as areas that are designated for change in the City's 2017 Comprehensive Plan.

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MMC TODAY

Programs And Services

MMC provides a scope and depth of specialty and subspecialty inpatient and surgical care that is unparalleled in Maine.

MMC is the only Level I American College of Surgeons (ACS) trauma center in Maine and has the only Level III Neonatal Intensive Care Unit (NICU) and the only kidney transplant program in the state. MMC is an American Nurses Credentialing Center (ANCC) Magnet Hospital and has received numerous awards including: Best Regional Hospitals (2016-2017) from U.S. News and World Report, Gold Seal of Approval and Top Performer in Key Quality Measures from the Joint Commission.

MMC's clinical services are organized into six service lines listed in Table 2.1. at right.

Table 2.1 List of MMC Service Lines

More information available on the MMC website at http://www.mmc.org/care-and-services

ADULT MEDICINE	MMC's Adult Medicine Service Line extends across the continuum of care, spanning from primary care, to emergency and critical care, medical services for hospitalized adults, subacute rehabilitation and long-term care. It includes a wide array of specialty programs and services including Digestive Health, Endocrinology, Geriatrics, Infectious Disease, Nephrology, and Palliative Care. This service line also includes the procedural areas of Endoscopy and Transplantation.
CARDIOVASCULAR	MMC's Cardiovascular Service Line addresses the treatment needs of patients with cardiovascular diseases such as coronary artery disease, valvular heart disease, congestive heart failure, arrhythmias, congenital heart disease, and peripheral vascular disease.
ONCOLOGY	MMC's Oncology Service Line provides health services to patients diagnosed with cancer such as medical oncology, radiation oncology, gynecological oncology, and surgical oncology.
SURGICAL	MMC's Surgical Service Line addresses specific health problems requiring surgical intervention including cancer, cardiovascular disease, eye diseases and injuries, gastric and intestinal diseases and injury, gynecological diseases and injury, joint and bone diseases and injury, neurological and spinal diseases and injury, bariatric, trauma, and genito-urologic diseases and injury.
NEUROSCIENCES	MMC's Neurosciences Service Line addresses the treatment needs of patients with neurological diseases such as stroke, epilepsy, neuro-oncology, multiple sclerosis, neuroendovascular diseases, Parkinson's disease, Alzheimer's disease and dementia, neuromuscular diseases, peripheral nerve and muscle conditions, and spine disorders as well as an array of neurodiagnostic services including electroencephalography (EEG) and sleep lab.
WOMEN'S AND CHILDREN'S	MMC's Women's and Children's Service Line addresses the health problems and needs of women and of children under 18 years of age with such clinical services as child birth and pediatric subspecialties including, neonatology, pediatric medicine, oncology, cystic fibrosis, gastroenterology and nutrition, cardiology and cardiac surgery, nephrology, neurology, pulmonology, ophthalmology, orthopedics, and urology.

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Daily Census

While the number of patients, visitors, and employees on campus vary day-to-day, a daily census estimate can be produced for a typical week day using a variety of data sources, including the annual patient counts (see **Table 2.2**). The estimated daily census of individuals on the MMC Bramhall Campus is included in **Table 2.3** below and exceeds six-thousand individuals.

Table 2.2 Census of Patients on Bramhall Campus (FY 2013-2016)

	2013	2014	2015	2016
Inpatient Discharges	29,253	29,401	30,196	30,889
Outpatient Activity	138,626	132,257	140,862	154,434
Bramhall Outpatient Clinics	39,829	40,694	38,209	39,709
TOTAL	**207,708**	**202,352**	**209,267**	**225,032**

Table 2.3 Estimated Daily Census of Individuals on the Bramhall Campus on a Typical Week Day (FY 2016)

Inpatient Discharges	99
Inpatient Visitors	248
Outpatient Activity	594
Outpatient Visitors	594
Bramhall Outpatient Clinics	153
Employees: Shift 1	3,639
Employees: Shift 2	206
Employees: Shift 3	519
Students on Campus: Medical	100
Students on Campus: Nursing	86
Other Students (PA, Pharma, etc.)	20
Non-MFP Related Contractors	25
TOTAL DAILY CENSUS	**6,283**

Assumptions: Daily inpatient discharges estimated from annual count, using six-day weeks to accommodate for reduced activities Sun-Tue. Daily outpatient activity estimated from annual count, using five-day weeks. Inpatient visitors estimated at 2.5 / patient, outpatient visitors estimated at one per patient. 60% of employees are estimated to be on the Bramhall campus at one time.

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Fig.2.1 Bird's Eye View of the Campus in Context, Looking South

Maine Medical Center

Existing Facilities

MMC regularly conducts building assessments to inform future investment and development decisions on campus. The assessments evaluate the condition of building structure and systems, and compliance with current building codes and regulations including fire safety. The 2015 assessment (see **Fig.2.2** on page 23) illustrates that a number of buildings on campus are approaching the age and level of condition for replacement.

Among those that are listed for replacement in the long-term are the Pavilions, the Richards Building and the LL Bean Building, which together host a large percentage of the hospital's bed inventory. These include a large number of semi-private beds that must be replaced to conform to current patient care standards. The Employee Garage is identified for replacement in the short-term due to its structural challenges.

Property Ownership

MMC owns and leases a number of properties across the City of Portland. These properties are listed and identified on a map on the following pages (see **Fig.2.3** and **Tables 2.5 and 2.6** on page 24.)

Properties that have a functional relationship to the MMC Bramhall campus, which is the subject of this IDP are highlighted with an ***** on **Tables 2.5 and 2.6**. Per the requirements of the IOZ, a functional relationship is defined as uses or activities that are integrally linked to the day-to-day operations of the MMC Bramhall Campus, without which activity MMC would be severely limited in one or more services.

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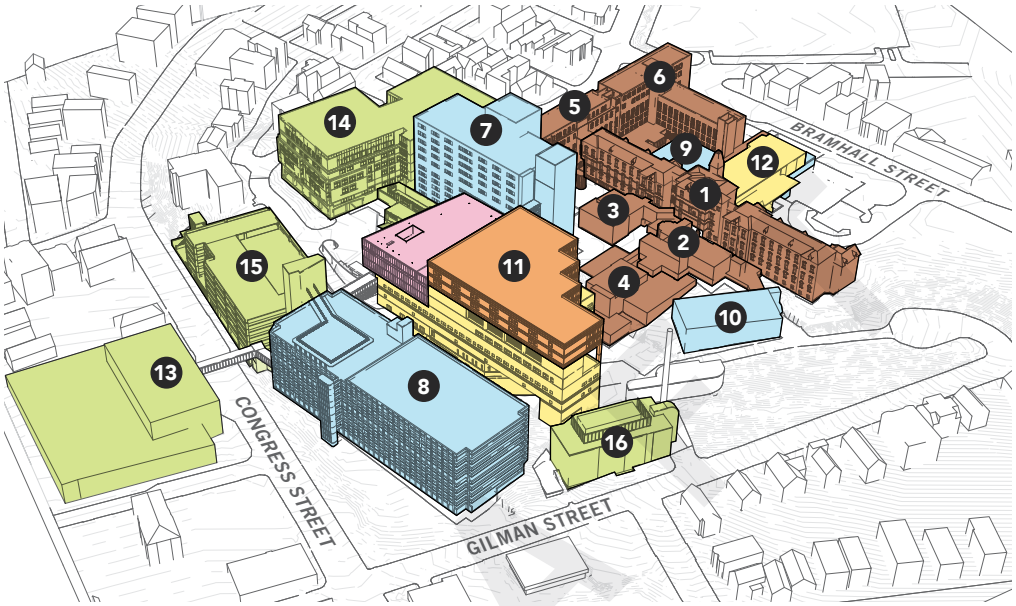
Table 2.4 Inventory of Existing Facilities

	Building Name	Date	Gross SF
1	Maine General	1870s	72,920
2	Annex B	1870s	36,250
3	Annex C	1870s	13,190
4	Annex A	1929	10,110
5	Pavilion A	1929	66,380
6	Pavilions C & D	1956	83,460
7	Richards Building	1968	228,920
8	Employee Garage	1970s	--
9	Diagnostics Building	1976	89,150
10	Engineering Services Building	1978	23,840
11	LL Bean Building	1985	231,830
12	Dana Building	1987	19,310
13	Congress Street Medical Bldg	1999	47,000
14	East Tower	2008	200,000
15	Patient and Visitor Garage	2008	--
16	Central Utility Plant	2008	--
		TOTAL	**1,122,360 GSF**

Fig.2.2 Existing Facilities, by Age And Condition

Pre 1960
1960 - 1970
1980
1990
2000 - 2010
2015



Continued investment in this building is:

Recommended
Cautioned
Not Recommended

For future use.

Fig.2.3 Map of MMC-Owned Parcels and Leased Properties

All Parcels within the City of Portland owned by Maine Medical Center or MMC Realty Corp.

Locations where MMC leases space (map extent only)

Table 2.5 List of Properties Owned by MMC within the City of Portland

Parcel Address	*Current Use*
A MMC BRIGHTON CAMPUS	
335 Brighton Ave	MMC Brighton
367 Brighton Ave	Residential
27 Hollis Rd	Residential
136 Prospect St	Residential
142 Prospect St	Residential
170 Prospect St	Residential
B MMC BEHAVIORAL HEALTHCARE	
556 St John St	Medical Office
D GATEWAY GARAGE BUILDING	
177 High St	Business Office
429 Cumberland Ave	Business Office
Note: MMC does not own but leases parking spaces in the Gateway Garage.	
E PORTLAND FAMILY MEDICINE	
272 Congress St	Medical Office
263 Congress St	Parking Lot
148 Cumberland Ave	Parking Lot
C MMC BRAMHALL CAMPUS AREA	
* 22 Bramhall St	MMC Bramhall
* 930 Congress St	Medical Office
* 932 Congress St	Business Office
* 887 Congress St	Medical Off. / Pkng
* 308 Brackett St	Parking
* 993 Congress St	Parking
* 995 Congress St	Business Office
* 98 Chadwick St	Maint. Garage
* 94 Chadwick St	Parking / Storage
* 47 Bramhall St	Business Office
* 229 Vaughan St	Business Office
216 Vaughan St	Medical Office
66 Bramhall St	Medical Office
19 West St	Medical Office
120 West St	Residential
34 Ellsworth St	Vacant Land
40 Ellsworth St	Vacant Land
231 Western Prom	Residential
227 Western Prom	Vacant Land
44 Gilman St	Parking
52 Gilman St	Medical Office
261 Valley St	Parking
262 Valley St	Parking
264 Valley St	Vacant Land

Table 2.6 List of Properties Leased by MMC in the City of Portland

Parcel Address	*Current Use*
* 131 Chadwick St	Business Office
180 Park Ave	Business Office
233 Vaughan St	Business Office
241 Oxford St	Business Office
315 Park Ave	Business Office
39 Forest Ave	Business Office
509 Forest Ave	Business Office
* 7 Bramhall St	Bus. Off. / Pkng
794 Congress St	Business Office
295 Park Ave	Medical Office
20 Portland St	Medical Office
818 Congress St	Medical Office
* 181 High St	Parking
* 222 St. John St	Parking
* 905 Congress St	Parking
98-100 India St	Parking
183 Brackett St	Residential
25-29 Crescent St	Residential
* 321-325 Brackett St	Res. / Pkng
75 St. James St	Storage
85 St. James St	Storage
Located off the map extent:	
12 Andover Road	Medical Office
1250 Forest Ave	Medical Office
1577 Congress St	Medical Office
901 Washington Ave	Business Office
190 Riverside St	Business Office
87 Central Ave	Medical Office

* Denotes properties with a functional relationship to the MMC Bramhall Campus. A functional relationship is defined as uses or activities that are integrally linked to the day-to-day operations of the MMC Bramhall Campus, without which activity MMC would be severely limited in one or more services.

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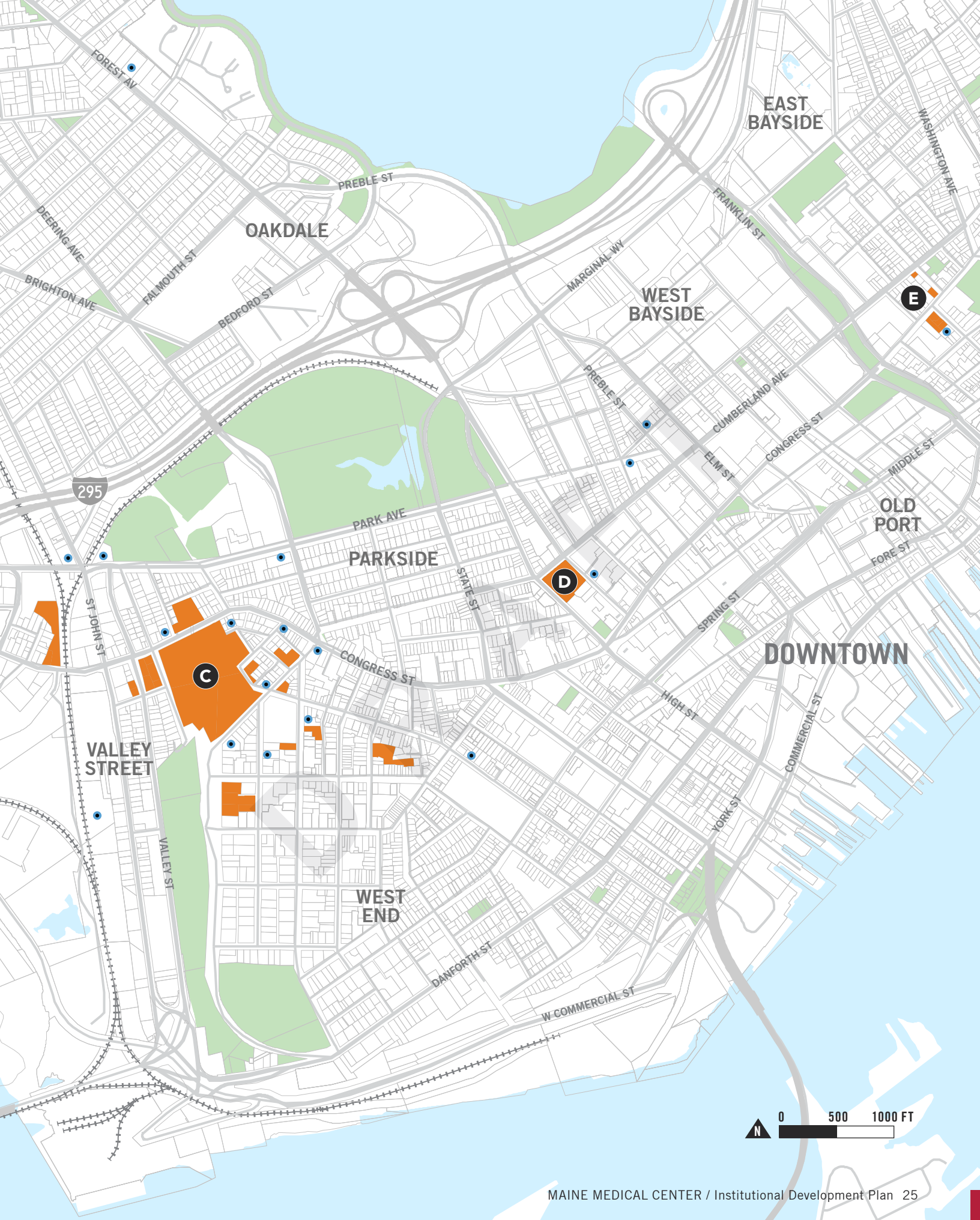
EAST BAYSIDE
WASHINGTON AVE
FRANKLIN ST
FOREST AV
PREBLE ST
OAKDALE
DEERING AVE
BRIGHTON AVE
FALMOUTH ST
BEDFORD ST
MARGINAL WY
WEST BAYSIDE
E
PREBLE ST
CUMBERLAND AVE
CONGRESS ST
ELM ST
MIDDLE ST
295
OLD PORT
PARK AVE
PARKSIDE
FORE ST
D
STATE ST
SPRING ST
ST JOHN ST
C
CONGRESS ST
DOWNTOWN
HIGH ST
COMMERCIAL ST
VALLEY STREET
YORK ST
VALLEY ST
WEST END
DANFORTH ST
W COMMERCIAL ST
N
0
500
1000 FT

CAMPUS CONTEXT

The Maine Medical Center Bramhall campus is located at a high point in the west end of the Portland peninsula that is renowned for the Western Promenade—an 18-acre park and national historic landmark designed by the Olmsted Brothers, among others. The campus abuts the Western Promenade in a dense urban setting that serves, in many ways, as a transitional zone between areas with diverse character, land uses, and demographics.

The campus, which serves the entire state of Maine as well as eastern New Hampshire, is located within less than a mile's distance of I-295, which links Portland to destinations across New England. To the north, the campus fronts on Congress Street—Portland's main street that extends along the spine of the peninsula to Portland's downtown and beyond. The MMC campus is located at the western gateway into the City.

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Fig.2.4 Bird's eye view of the campus in its urban context

Adjoining Neighborhoods

The 21.8-acre MMC Bramhall campus abuts four distinct neighborhoods. To the west and north is the St John Valley Neighborhood, a diverse area featuring a wide mix of uses including industrial warehouses, a large food processing plant, bus garages and facilities, single-family residential, local and chain restaurant, multi-family rentals, and alternative grocery stores. St John Valley, and the largely residential Parkside neighborhood to its east, are among the most ethnically and racially diverse in Portland. (City of Portland GIS Maps, 2010 Diversity Index). The two neighborhoods share easy access to Hadlock Field, Fitzpatrick Stadium, and Deering Oaks Park north of Park Avenue.

The Western Promenade neighborhood is located to the south of the medical campus. The focal point and namesake of the neighborhood is the 18-acre linear park that wraps the 120-feet tall escarpment, providing sweeping views of Casco Bay and the Fore River. Designated as a park as early as 1836, and designed in 1905 by the Olmsted Brothers, the Western Promenade was also recognized as a national historic site in 1989. The Western Promenade neighborhood and large sections of the adjoining West End neighborhood are included in the West End local historic district in recognition of their cohesive residential character featuring major architectural styles from 1850 to the 1920's.

Zoning Context

Development on the MMC campus has been historically governed by Contract Zone agreements C41 (main campus) and C18 (Congress Street Medical Building).

MMC is currently working with the City and surrounding neighborhoods to establish a new Institutional Overlay Zoning (IOZ) District to regulate future development on campus. MMC's IOZ District will supersede the contract zones for hospital-owned properties. See **Fig.2.5** on page 29 for a map of MMC's IOZ district in its zoning context.

As the City implements new institutional zoning for the MMC campus, opportunity exists to comprehensively review the zoning regulations for Congress Street to provide for orderly redevelopment on both sides of the gateway corridor.

Historic Resources

The MMC Bramhall campus abuts the West End Historic District, one of the eleven locally-designated historic districts in the City of Portland (see **Fig.2.5** on page 29). The West End Historic District includes the Western Promenade, which was designated as a national historic site in 1989.

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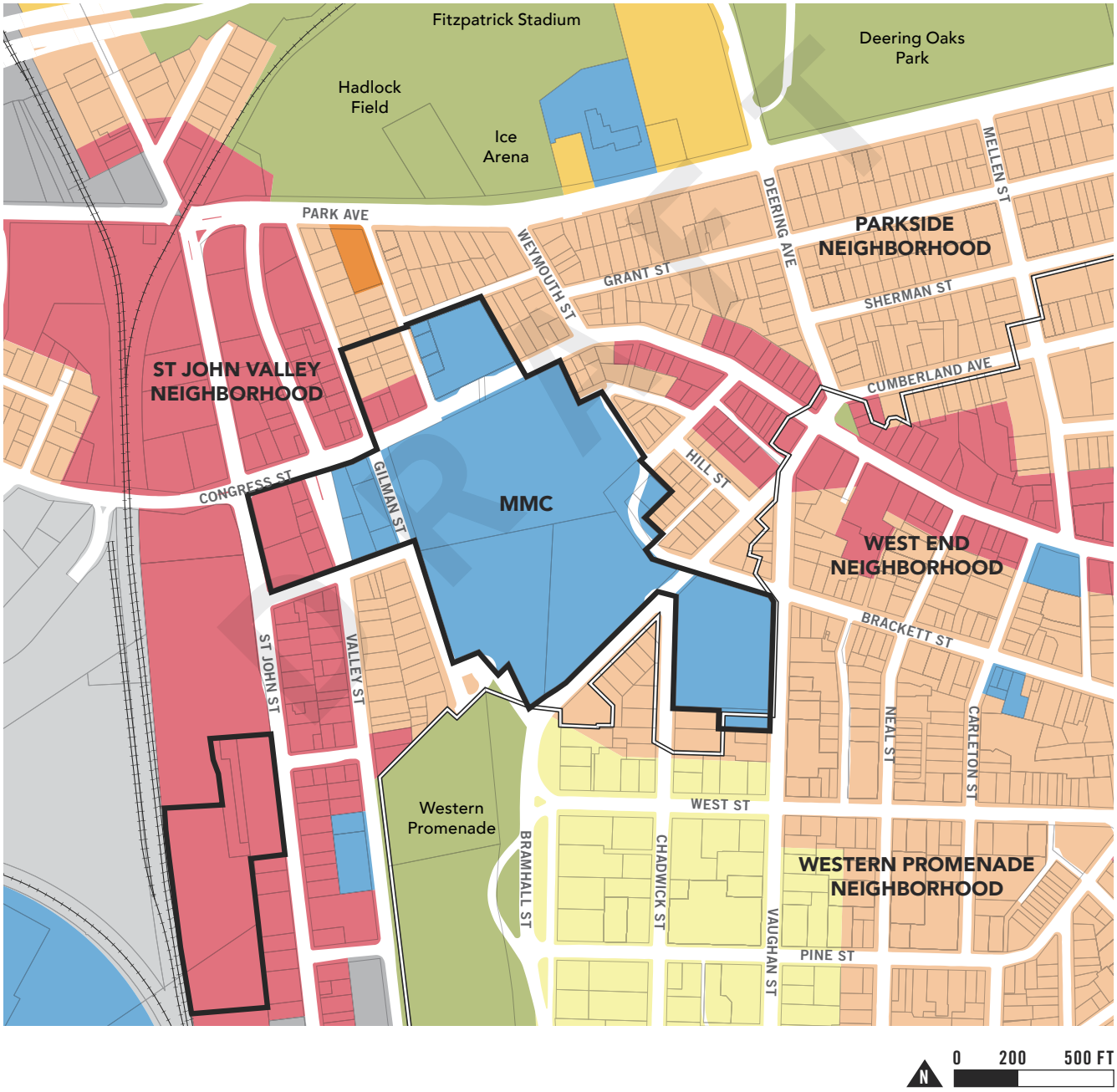
Fig.2.5 MMC Campus: Neighborhood and Zoning Context (Data Source: City of Portland GIS)

LEGEND

- MMC Institutional Overlay Zoning (IOZ) District Boundary
- West End Historic District Boundary
- Parcel Boundaries

CITY OF PORTLAND EXISTING ZONING DISTRICTS

- R4 Residential
- R5 Residential
- R6 Residential
- RP Residential Professional
- B2 or B2b Business Community
- IL Industrial - Low Impact
- IM or IMb Industrial - Moderate Impact
- ROS Recreation Open Space
- Contract Zones (including existing MMC Contract Zones 18 and 41)



TRANSPORTATION CONTEXT

Maine Medical Center's service area includes all of Maine and parts of New Hampshire. The majority of MMC patients and visitors do not live within walking distance or near public transportation and arrive by car. The nature and acuity of patient needs does not lend itself to the use of alternative modes of transportation. This situation is not atypical for a hospital, but rather is the norm even in locations with a robust public transit system.

The campus' proximity to I-295 provides ease of access to most patients and visitors. **Fig.1.1 on page 9** provides an illustration of the geographic breakdown of MMC's patient home origins in Maine and beyond.

MMC is open to patients every hour, every day of the year. Most MMC staff and physicians do not use alternative modes of transportation. Work responsibilities that require the use of an automobile, work shifts that do not lend themselves to taking transit, a lack of transit options to accommodate staff schedules, and an insufficient bicycle infrastructure in the surrounding municipalities could all be factors that contribute to a high drive share by staff. See **Fig.2.9** for a map of MMC employee residences.

Vehicular Access and Circulation

Vehicle access and circulation on the MMC Bramhall Campus was planned and designed to maintain a safe and efficient transportation system. Most notably, the concept of separating patients, employees, emergency department operations and loading/service are all considerations that exist at MMC currently. **Fig.2.6** provides an illustrative summary of MMC's access and circulation system on the Bramhall Campus. Aspects of that system are described in greater detail below.

- Patient/Visitor Access: Patients and visitors have several choices when accessing the hospital. Through a strong wayfinding and signage plan, they are directed to park directly in the Congress Visitor Garage or the South Lot. They also have access to a convenient patient drop-off area that is located off of Bramhall Street, with direct access to parking in the South Lot.
- Emergency Department Access: MMC's Emergency Department (ED) is located near the main entrance but is clearly delineated and separated from it. Within the ED area, ambulances have their own dedicated area and are separated from patient ED access and short-term ED parking.
- Staff Access: Staff primarily park in the Employee Garage, which is located on Congress Street with access off of Gilman Street. This design limits the mixing of patient and staff traffic, resulting in fewer staff vehicles near patient access zones.
- Loading/Service Access: Trucks destined for MMC are directed to a dedicated loading and service facility located off of Gilman Street, separate from all active patient access and circulation functions. MMC does not accept large deliveries from any location other than through the loading dock area.

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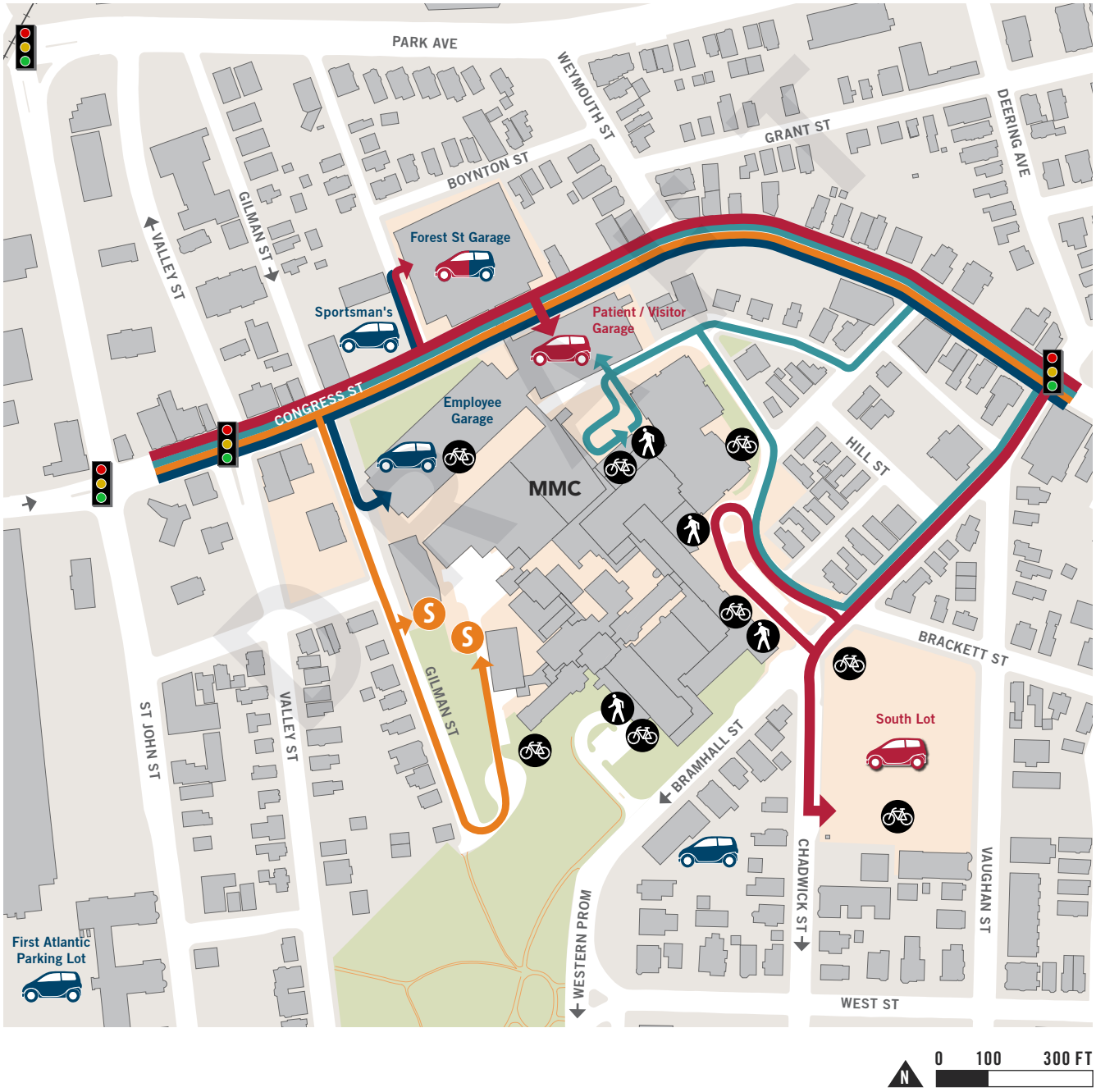
Fig.2.6 MMC Existing Circulation Routes and Access Points

KEY VEHICULAR CIRCULATION ROUTES

- Patients / Visitors
- Emergency Drop-off / Ambulance
- Staff
- Service

- Patients and Visitor Parking
- Staff Parking (In map extent only. See list on following page for all locations)
- Limited Parking for Service Vehicles / Service Staff
- Bicycle Rack Locations
- Main Pedestrian Entrances



Parking

MMC offers its patients, visitors, physicians, and employees several options for parking. MMC currently controls approximately 2,877 total off-street parking spaces either via ownership or through leases with others that specifically serve the Bramhall Campus. Of the 2,877 spaces, 850 spaces are available for public use by patients and visitors, and 2,027 parking spaces are subscribed to staff and physicians. About 1,538 of these employee parking spaces are located on the MMC Bramhall Campus.

In addition to their on-campus parking spaces, MMC controls an additional 489 spaces for employees in remote parking facilities that serve the Bramhall Campus. Off-site spaces that are used by employees require shuttle services to the Bramhall Campus by dedicated MMC-operated shuttle services. **Table 2.7** provides a summary of existing Maine Medical Center parking facilities and **Fig.2.6** illustrates each facility's geographic location.

MMC has continued to see demands on the existing supply intensify due to increased patient volumes and higher acuity patients (longer lengths of stay). And under current conditions, the MMC staff parking system typically operates at capacity during the weekday daytime hours. When off-site, remote staff parking facilities reach capacity, staff are directed to park on-campus in the Congress Visitor

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Table 2.7 Existing Parking Spaces

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS 850 patient / visitor 1,538 employee spaces	Employee Garage	0	1,274	1,274	Owned
	Congress Visitor Garage	480	0	480	Owned
	South Lot	370	0	370	Owned
	887 Congress (CMOB Garage)*	0	178	178	Owned
	7 Bramhall St	0	26	26	*Leased*
	905 Congress St (Sportsman Lot)	0	60	60	*Leased*
OFF-CAMPUS 489 employee spaces	222 St John St (First Atlantic Lot)	0	283	283	*Leased*
	181 High St (Gateway Garage)	0	100	100	*Leased*
	993 Congress St (Classic Lot)	0	97	97	Owned
	321 Brackett St	0	9	9	*Leased*
	TOTAL PARKING SPACES	850 Patient / Visitor	2,027 Employee	2,877 Total	

* The CMOB Garage has an additional 222 spaces that are dedicated to medical office staff and patients.

Garage. Some staff also independently choose to park nearby utilizing neighborhood on-street parking, although this is discouraged by MMC.

Tables 2.8 and 2.9, respectively, highlight the number of on-campus parking spaces that MMC controls, and measures those space counts as a ratio of total beds on the Bramhall Campus. The tables also compare those ratios to comparable peer academic medical centers to get a better relative understanding of the amount of parking that MMC uses to support its Bramhall Campus versus these peer institutions.

As shown in **Table 2.8**, MMC's 850 patient/visitor parking spaces equates to about 1.33 parking spaces per bed. This is low when compared to other New England and national peers. Patient drive rate is consistently high among large academic medical centers regardless of location. Therefore it is appropriate and reasonable to compare MMC patient parking needs on a space per bed basis to highly urban, suburban, and rural settings. MMC would need about 340 additional patient/visitor parking spaces to achieve the midpoint parking space/bed ratio (approximately 1.87) of its peers.

As shown in **Table 2.9**, MMC's 2,027 staff parking spaces equates to about 3.18 parking spaces per bed. This ratio is also low when compared to other peer institutions. When studying staff/physician parking needs, it is important to compare institutions that would reside in similar contexts where driving behavior and auto mode shares would be similar. Because of this, the list of institutions in **Table 2.9** is shorter, and only includes those that provide for a reasonable comparison to MMC, where the staff drive mode share is very high (over 90 percent).

Under current conditions, MMC would likely require about 150-200 additional on-campus parking spaces to alleviate current staff parking shortfalls that have been estimated via observations and data collection activities and eliminate on-street parking by MMC staff. To help alleviate these pressures, MMC continues to pursue a number of strategies to address its constrained parking situation, including:

- The study of enhanced Transportation Demand Management (TDM) actions to reduce single-occupancy vehicle trips and parking demand,
- Moving employees to off-campus locations (both program and parking), and,
- Securing additional remote parking and serving that remote parking with convenient shuttle services for staff.

See "Future Parking Conditions" on page 74 for MMC's future parking plan.

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Table 2.8 Peer Institutions: Inpatient Parking Demand Ratios

	Total Beds	Total Patient Parking Spaces	Parking Ratio (spaces /bed)
Maine Medical Center / Portland, ME	637	850	*lowest* **1.33**
Advocate Illinois Masonic Medical Center / Chicago, IL	211	292	1.38
VCU Health / Richmond, VA	1,125	1,830	1.63
University of Pennsylvania Health System / Philadelphia, PA	695	1,155	1.66
New Spaulding Rehabilitation Hospital / Boston, MA	132	230	1.74
Washington University Medical Center / BJHN / St. Louis, MO	220	402	1.83
Rush University Medical Center / Chicago, IL	674	1,249	1.85
Loyola University Medical Center / Maywood, IL	536	1,018	1.89
Brigham and Women' Hospital / Boston, MA	793	1,564	1.97
Beth Israel Deaconess Medical Center / Boston, MA	632	1,302	2.06
Massachusetts General Hospital / Boston, MA	902	2,057	2.28
Central DuPage Hospital / Winfield, IL	361	965	2.67
Florida Hospital Orlando – Ginsburg Tower / Orlando, FL	440	1,726	3.92
Edward Hospital / Naperville, IL	357	1,425	*highest* **3.99**

median **1.87**

Notes:
Gross on-campus patient parking spaces to total inpatient beds. Includes any related outpatient demand at each respective facility.
Florida Hospital Orlando - Ginsburg Tower includes some staff parking on-campus.

Table 2.9 Peer Institutions: Employee Parking Demand Ratios

	Total Beds	Total Patient Parking Spaces	Parking Ratio (spaces /bed)
Maine Medical Center / Portland, ME	637	2,027	*lowest* **3.18**
Washington University Medical Center / St. Louis, MO	986	3,569	3.61
Florida Hospital Orlando – Ginsburg Tower / Orlando, FL	440	1,726	3.92
University of Virginia Health System / Charlottesville, VA	600	2,895	4.83
Elliot Hospital / Manchester, NH	296	1,852	6.26
VCU Health / Richmond, VA	1,125	7,063	*highest* **6.28**

median **4.38**

Notes:
Gross employee parking spaces to total inpatient beds. Includes any related outpatient demand at each respective facility.
Elliot Hospital includes patient and visitor parking. Florida Hospital Orlando - Ginsburg Tower includes some staff parking on-campus.

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Public Transit Access

METRO provides bus service throughout the Greater Portland region and makes stops within walking distance of museums, galleries, shops, restaurants and historic landmarks. **Table 2.10** (page 41) and **Fig.2.13** (page 42) summarize and illustrate those key bus routes that the METRO operates that are within a 5-minute walk of the MMC Bramhall campus. METRO bus stops that are located near the MMC campus are also noted on **Fig.2.13**. MMC riders can transfer to other METRO buses at the Portland Transportation Center (PTC) and the Downtown Hub. The PTC also serves as the connection to Amtrak Downeaster service.

Bicycle Access and Storage

MMC is committed to supporting bicycle access to the Bramhall Campus. As shown in **Fig.2.7**, bicycling is prevalent within the City of Portland, however, bike use at and around the MMC campus is generally lower than in other Portland locations. This could be a result of the severe grades in the Bramhall neighborhood, but also the lack of strong municipal bicycling infrastructure, including dedicated bike lanes, paths and sharrows.

In recent years, the hospital has invested in bicycle racks, showers, and lockers. **Fig.2.6** on page 31 indicates the location of bicycle racks on campus. MMC currently has capacity to accommodate up to 193 bicycles on campus.

Pedestrian Entrances and Access

As illustrated previously in **Fig.2.6**, there are many options for MMC patients, visitors and staff to access the Bramhall Campus. Most notably, the major parking garages are directly connected to the hospital with elevated, covered, and temperature-controlled pedestrian walkways. This limits exposure to adverse weather conditions as well as minimizes on-street vehicle conflicts at intersections and pedestrian crossings.

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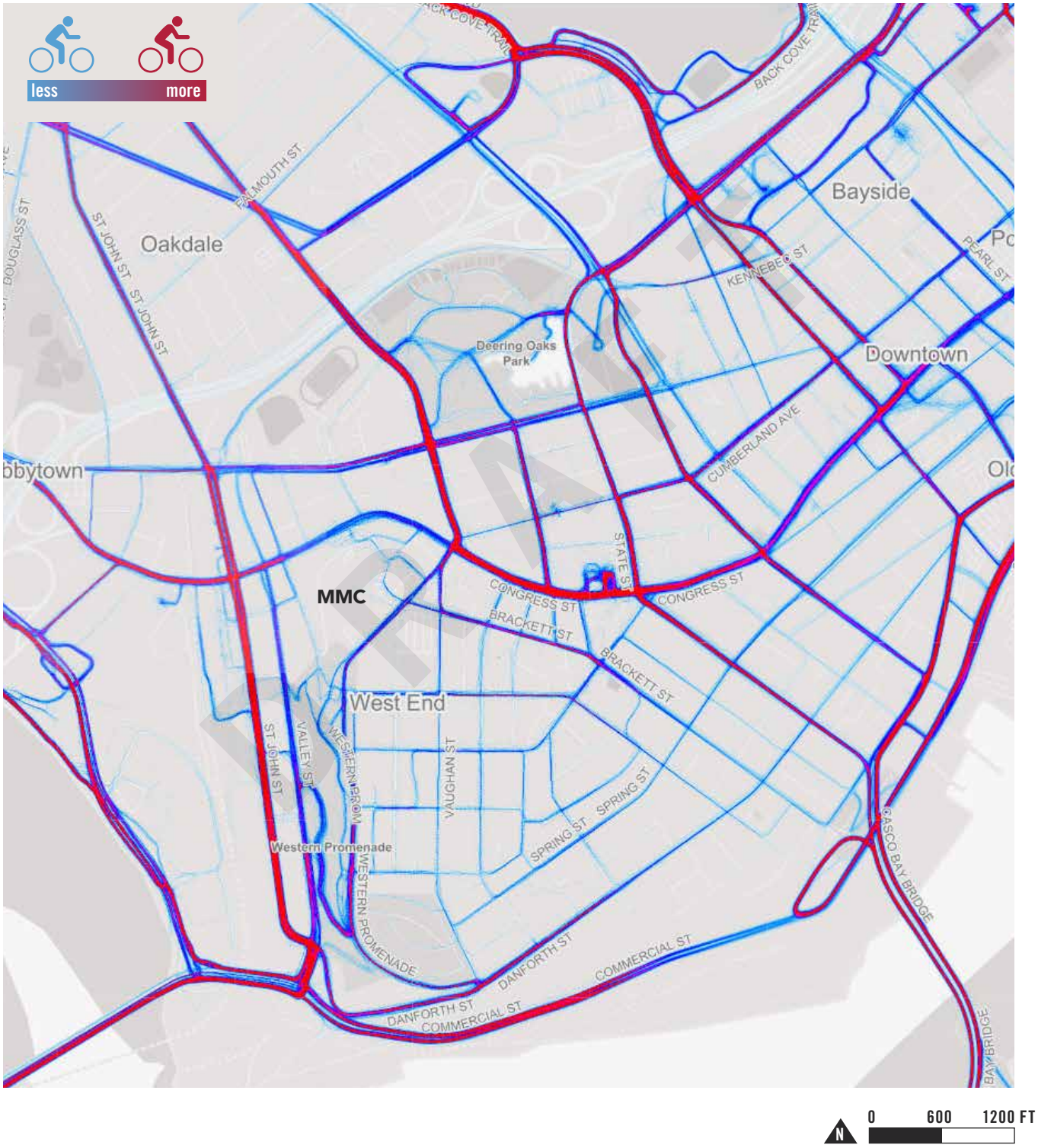
Fig.2.7 Heatmap Showing Popular Bicycle Routes in the Area, as Recorded by Strava App Users

Source: Based on self-tracking app data mapped by Strava Labs (labs.strava.com/heatmap)



Transportation Demand Management (TDM)

As part of its efforts to monitor and enhance the "Get on Board!" (MMC's existing TDM) program, MMC recently completed a survey of its employees to better understand existing conditions. The current mode split is shown in **Fig.2.8**.

Maine Medical Center is open 24 hours per day, 7 days per week, 365 days per year. Patients require the round-the-clock care that MMC provides. Robust public transportation is not available to service the needs of the broad geographic area. The high percentage of employees driving to work alone and parking near campus is not surprising given the nature of the services provided.

"Get on Board!" TDM Plan

MMC's TDM Plan, "Get on Board!" was successfully implemented in June 2008 and updated annually.

The "Get on Board!" Program, aims to reduce MMC's traffic impact on the peninsula by reducing the number of single-occupancy vehicles (SOV) trips to the campus. The goal is advanced through the subsidy, and marketing of alternative commute options including walking, bicycling, public transit, and rideshare.

"Get on Board!" has continued to grow since implementation. Its success is demonstrated in the growing enrollment in the "Get on Board!" program. The "Get On Board!" Program is administered through an employee portal that includes

Fig.2.8 MMC Bramhall Campus Employees Commuting Mode Split (2017)

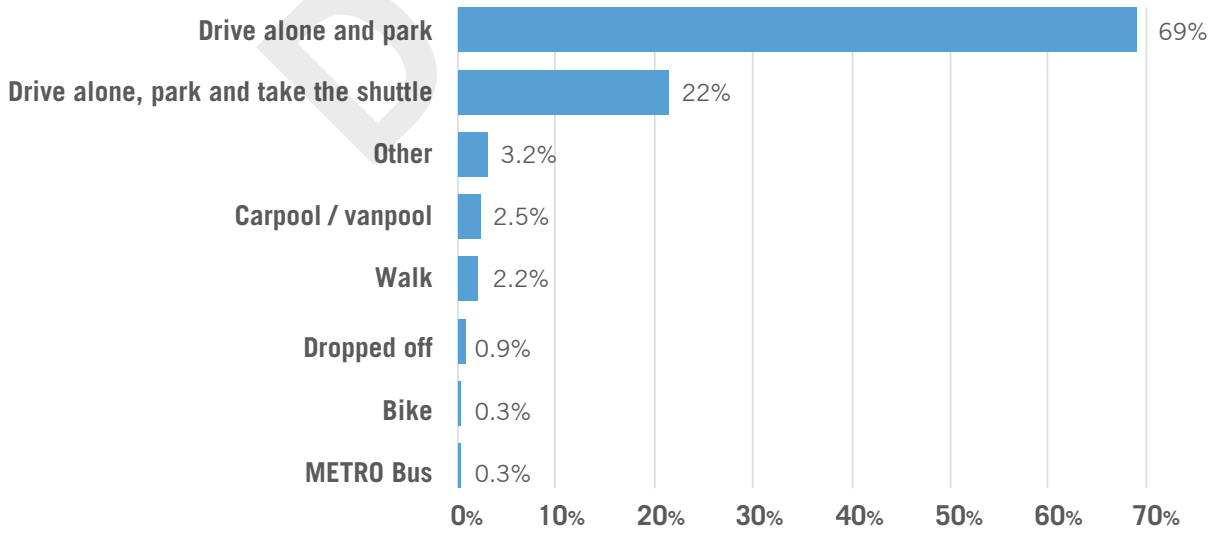


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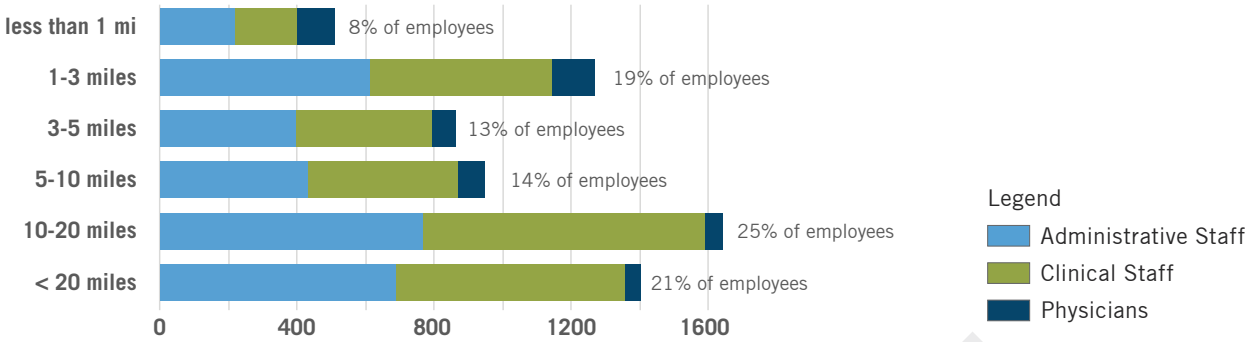
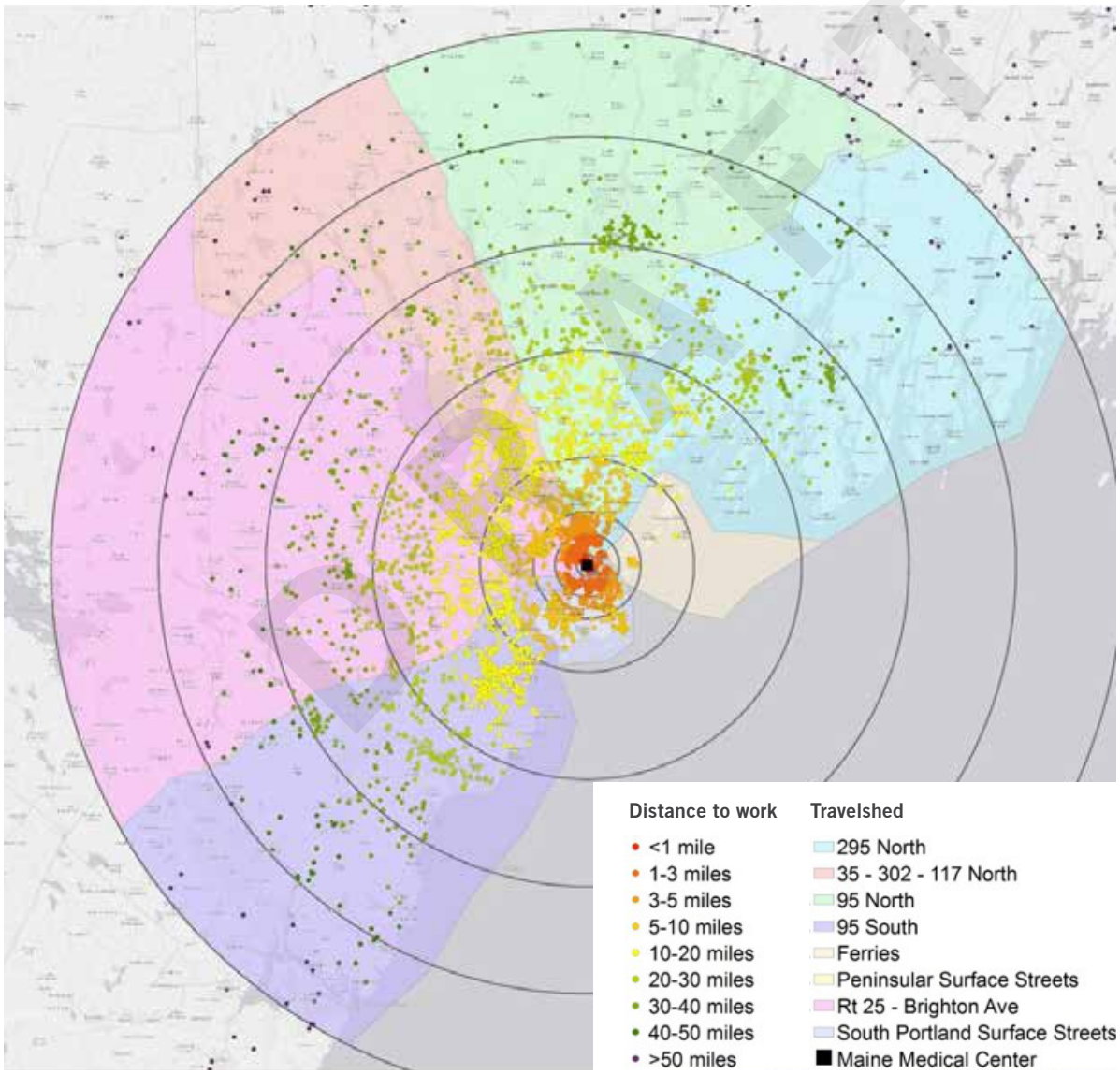
Fig.2.9 MMC Employees, Distance to Work





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information and resources for alternative commutes. The website provides links to Maine Department of Transportation and the Maine Turnpike Authority's "GO MAINE" program to provide employees easy access to additional benefits. All new employees receive "Get On Board!" information during orientation with instructions on how to join the program. This has increased the number of people that join the program at the start of their employment and has made "Get On Board!" a focus of institutional policy to help influence travel behavior by MMC staff.

Individual program elements and related incentives are outlined in the following section.

Supporting Mass Transit Commutes

Employees can purchase discounted bus tickets and Shuttle-Bus Zoom tickets conveniently in the cafeteria. MMC buys the tickets at the regular price and offers them to employees at the reduced prices listed below. This is a clear demonstration of MMC's commitment to making "Get on Board!" work. **Table 2.10** includes a list of buses currently serving the MMC campus. See **Fig.2.13** on page 42 for a map of these routes, and stops located within walking distance of the campus.

	MMC COST	EMPLOYEE COST
METRO	$13.50	$8
S. PORTLAND	$13.50	$8
ZOOM 10 RIDE	$39	$29.60
ZOOM MONTHLY	$100	$84.50
ZOOM QUARTERLY	$260	$197.50

Supporting Employee Carpools

Employees participating in the Ride Share (carpooling) program are given access to preferred parking in a gated, ID-card access only area of the Employee Garage that connects directly to the Main Lobby on the ground floor of the hospital.

Supporting Bicycle Commutes

The MMC campus is located in close proximity to popular bicycle corridors, including St John and Congress Streets which connect riders to destinations across the City of Portland (see **Fig.2.7** on page 36**).** MMC has worked diligently to support bicycle commuters. In 2008, MMC installed five strategically-located bike racks and ten bike lockers on their Bramhall Campus. Three new bicycle racks were added in the vicinity of the Main entrance and in the South Lot in 2016, bringing total storage capacity to 193 bicycles across campus (see **Fig.2.6** on page 31 for location of bicycle racks on campus). Bicycle commuters also have access to a shared toolshed with basic tools.

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MMC Employee Shuttles

The MMC employee shuttle operates Monday-Friday from 6am to 11pm. The number of shuttles running to off-site parking locations at any given time varies from 1-5 shuttles depending on traffic volume. These offsite lots fill to capacity on a daily basis. The employee shuttle service has three distinct routes and schedules:

A. Service to and from the offsite 1st Atlantic and Classic parking lots runs from M-F from 6am to 11pm, in a continuous loop. The 1st Atlantic parking lot (222 St John St) is utilized first in the mornings. Once it nears capacity, service shifts to the Classic parking lot (993 Congress St). Return trips in the evenings service both lots.

B. The Gateway shuttle moves employees between the MMC Bramhall campus, the Gateway office building / garage and the MaineHealth home office at 110 Free Street. The shuttle leaves every 20 minutes from the south entrance M-F from 6am to 4pm. Transportation is provided on an "On Call" basis between 4pm and 11pm. This shuttle also provides a limited courtesy transportation service to patient families staying at the Ronald McDonald House (250 Brackett St.).

C. A courtesy shuttle runs between Brighton Medical Center (335 Brighton Ave) and Maine Medical Center every 20 minutes from 6am to 4pm.

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Fig.2.12 Map of MMC Shuttle Routes A & B.

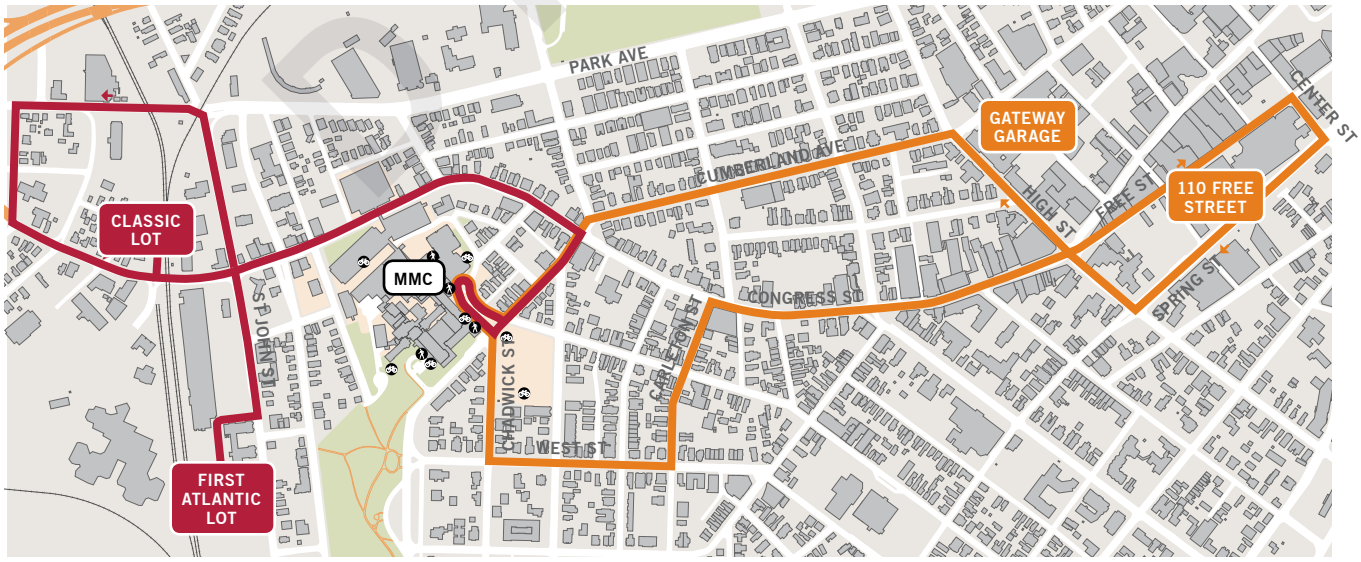

Table 2.10 Bus Routes Serving MMC Bramhall Campus

The following bus routes are accessible within a five minute walk of the MMC campus.

M1 **M1 – CONGRESS STREET**
Connection to Portland Transportation Center (PTC), Downtown, Munjoy Hill and Eastern Promenade

M5 **M5 – JETPORT / MAINE MALL**
Connection to Downtown, Hannaford Plaza, Maine Mall and Portland Jetport

M8 **M8 – PENINSULA LOOP**
Connection to Downtown, Franklin Towers, Whole Foods Plaza and Hannaford Plaza

9A/B **M9A / 9B – NORTH DEERING VIA STEVENS AVENUE**
Connection to MMC Brighton campus, Highlands, Rosemont, and North Deering

BRZ **METRO BREEZ EXPRESS (BRZ)**
Connection to PTC, Downtown, Falmouth, Yarmouth, Freeport

ZM **ZOOM Turnpike Express (ZM)**
Connection to Biddeford and Saco

Rte #	Closest Stop	Times of Operation	Headways
M1	Congress Street	5:35am to 11:10pm (M-F) 7:45am to 6:05pm (Sat) 8:10am-6:35pm (Sun)	Varies between every 30 minutes during daytime to every 45 minutes late evenings
M5	St John Street	5:30am to 10:45pm (M-F) 6:05am to 10:45am (Sat) 7:55am to 6:40pm (Sun)	Varies between 25-35 minutes during weekdays (day-time) to every 40-45 minutes on weekend evenings
M8	Bramhall	6:40am to 6:00pm (M-F) 7:50am to 6:17 pm (Sat) 9:35am-4:17pm (Sun)	Varies between every 30-40 minutes during weekdays to every hour during weekends
M9A/9B	Congress	5:35am to 10:35pm (M-F) 7:35am to 10:30pm (Sat) 8:35am-4:35pm (Sun)	Varies between 10 minutes on weekday mornings to every 1 hours on weekends and evenings
BRZ	Congress	6:00am to 7:45pm (M-F) 8:20am to 6:10pm (Sat) No Sunday Service	Varies between 45 minutes on weekday mornings to every 2 hours on Saturdays
ZOOM	Bramhall and Congress	6:00am to 6:40pm (M-F) No Weekend Service	5 buses in the morning b/w 6am-8:17am 6 buses in the afternoon b/w 2:46pm-5:35pm

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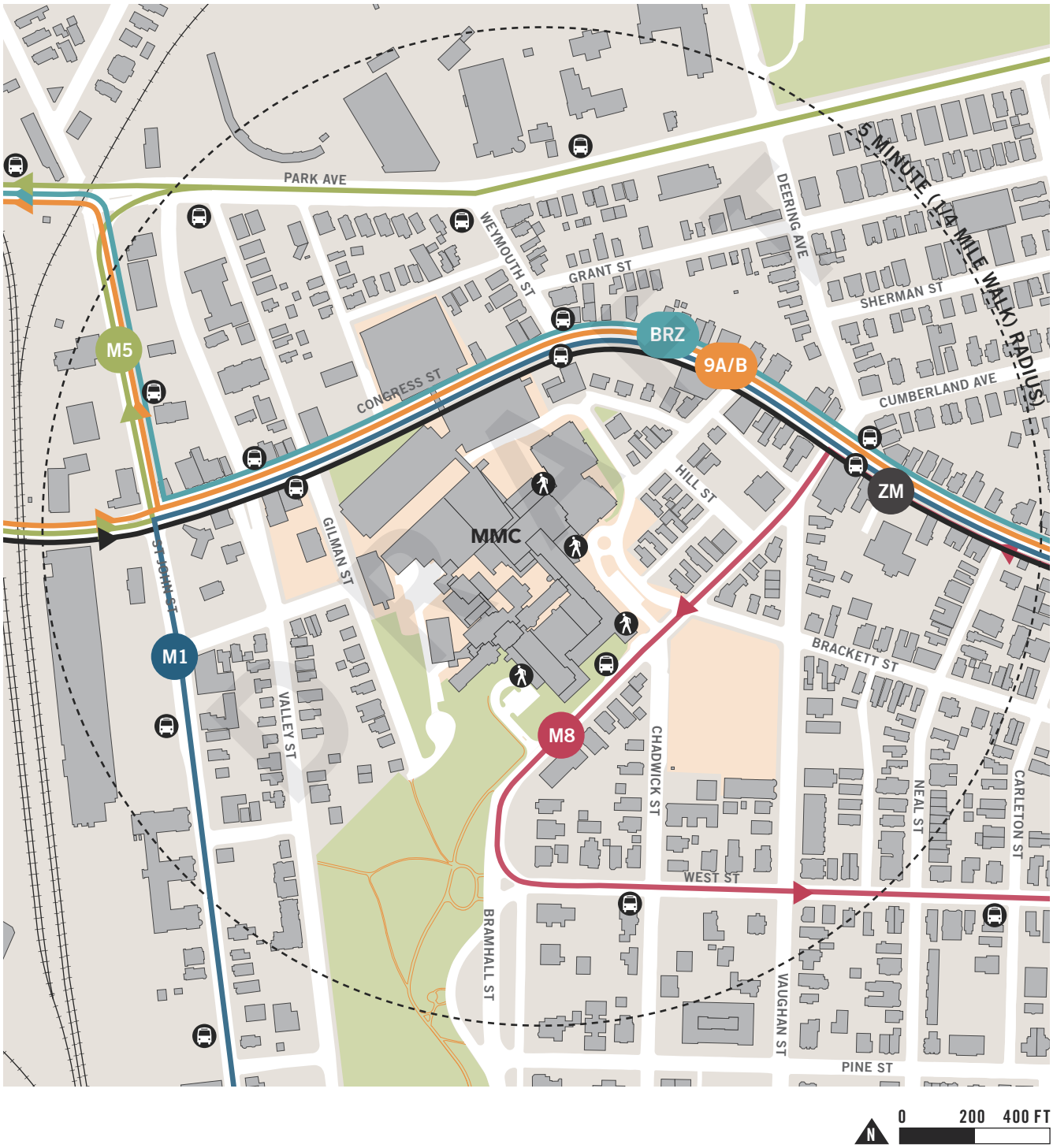
Fig.2.13 Map of Existing Transit Routes and Stops

MMC Main Pedestrian Entrance

Existing bus stops in the area (see previous page for transit route legend)



The shuttles provide a predictable alternative to employees commuting between the three sites while reducing vehicular traffic in and around campus.

Contractor Parking and Shuttle

MMC has instituted a shuttle service for contractors from the Classic Parking Lot (993 Congress Street) to the hospital to reduce traffic and parking impact on the campus and surrounding neighborhoods. In 2015, MMC added a 20-space contractor lot on Forest Street. Only essential contractor vehicles are permitted to park on campus: contractor parking passes are distributed by the Engineering Department on a case-by-case basis.

UCar

Through contract with Uhaul CarShare, MMC provides a UCar on its campus for use by employees as well as members of the surrounding community. Instituted in 2016, the UCar has been accessed 106 times over the last year. In March 2017 Uhaul representative Leo Sturger stated: "[The 106 rentals] is obviously low considering the amount of time, and the reason for that is that the Ford CMAX that we have at your location was effected by a recall and had to be taken offline for a period of almost 6 months. The vehicle is back online now and is renting again. We expect to see numbers climb significantly in the coming months."Working in conjunction with the City's Parking Division and UHaul's UCar program, MMC promotes the UCar as available gap transportation for employees who choose not to have a vehicle or choose to take alternative modes of transportation to work.

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ENVIRONMENTAL AND INFRASTRUCTURE CONTEXT

Environmental Context

The MMC Bramhall campus is located in an urban context with development history dating back to the late 19th century. The campus and adjoining neighborhoods benefit from proximity to the Western Promenade, which provides recreational open space, wildlife support, and natural stormwater management in the otherwise densely developed urban environment.

FEMA Flood Zones

The MMC Bramhall campus is not located in a FEMA-designated flood zone. The 100-year flood zone boundary is located at the western edge of the Pan Am rail line and consist of flood-prone flats along the Fore River. Redevelopment on MMC's campus is not expected to impact existing flood risk in this area.

Existing Utility Context

In 2008, MMC's 22 Bramhall Street campus went live with its upgraded and centralized utility plant. The Central Utility Plant (CUP) was designed to provide better management of and more efficient results for energy consumption by the hospital. The plant produces steam, chilled water, and back-up power for the Bramhall campus. The peak tonnage of the plant is currently close to 2,400 tons per hour of chilled water.

Since 2008, MMC has experienced dramatic energy consumption decreases directly resulting from the state of the art utility plant. The CUP controls both electrical and gas utilization, and heating and chilling functionality, and will service the short-term modernization project under development at the Bramhall campus.

Because MMC, of necessity, is such a large consumer of energy, it utilizes the services of an energy procurement broker, Competitive Energy Services, to provide it with strategic energy consulting services and management of energy procurement activities for electricity, natural gas, and oil in order to maximize efficiency and to ensure MMC achieves the most competitive pricing. MMC purchases its energy through a competitive bid-based energy procurement process.

The electrical consumption at MMC for calendar year 2016 was 35,375,765 Kw-Hr.

The CUP upgraded contains state-of-the-art dual natural gas /oil system allowing for switching between oil and gas depending upon price and availability. The oil consumption at MMC for calendar year 2016 was 411 gallons. The natural gas consumption at MMC for calendar year 2016 was 1,633,686 CCF units.

In addition to its conservation methods in the electric, oil and gas arena, MMC has also undertaken investment in infrastructure upgrades at its 22 Bramhall Campus to reduce building air changes and temperature set-points allowing for the monitoring and control of humidity and temperature

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during high demand use times. Upgrades in sequencing and timing of set points have achieved efficiencies of HVAC run times and energy demand.

Further, MMC has been investing in lighting and plumbing features that allow for reduced energy consumption. LED lights have been installed in its garages and in the public corridor within the Bean Building. Low flow plumbing fixtures with aerators are installed when replacements or renovations are required. These fixtures lower overall water consumption at the hospital.

Stormwater Management

The MMC Bramhall campus is located at a high point in the west end of the Portland peninsula. From the high point of the property along Bramhall Street, runoff from the site drains west, north and east entering the to the City of Portland's separated storm drain system and combined sewer system (see **Fig.2.15** on page 48).

In general, the campus redevelopment over the last 15 years has collected runoff from parking lots and new rooftops into a separated storm drainage system, including storm drains in the public right of way. Where feasible, the on-site separated drainage system has been connected to a municipal separated storm drain. This includes the storm drain A Street constructed by the City in 2001 and Gilman Street constructed by MMC in 2005.

Other locations abutting the campus including Congress Street, Wescott Street, Charles Street, Bramhall Street and Bracket Streets are only served by combined sewers. At these locations, MMC's recent drainage construction terminates in a separated storm drain manholes connected to adjacent City combined sewer manholes to provide points of connections for future municipal separated storm drains. The campus' stormwater conditions were most recently evaluated in a stormwater management report prepared by Sebago Technics, Inc. in 2004 as part of the Planning Board's review of the Bramhall campus expansion project,

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which included the construction of the Women and Infants Center, Emergency Department Expansion, Congress Street Parking Garage and the Central Utility Plant.

Stormwater Quality Features

To meet the 2004 stormwater treatment requirements, MMC installed two Downstream Defender Stormwater treatment units to treat runoff from impervious areas on the site. The redevelopment separated and redirected stormwater runoff from approximately 6.3 acres of existing development from the combined sewers in Crescent Street, Ellsworth Street, and Congress Street to the separated storm drain in A Street.

A 6' diameter unit has been installed in the Congress Street Parking Garage, treating runoff from the garage (see Location 2 on **Fig.2.15** on page 48), and a 10' diameter unit has been installed in Gilman Street (see Location 6 on **Fig.2.15** on page 48).

Sanitary Flows

The MMC campus is served by the City of Portland's combined sewer system. Located at a high point in the west end of the Portland peninsula, sanitary flows from the campus to the City's sewer system at approximately seven locations (see **Fig.2.15** on page 48).

This information is provided to the best of MMC's knowledge after researching its own records and those of the City of Portland. Due to the age of the public sewer system and MMC's buildings, record plans of the existing sewer systems may be incomplete and additional currently unidentified connections may exist.

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Fig.2.14 Diagrams Illustrating Elevation and Location of Steep Slopes

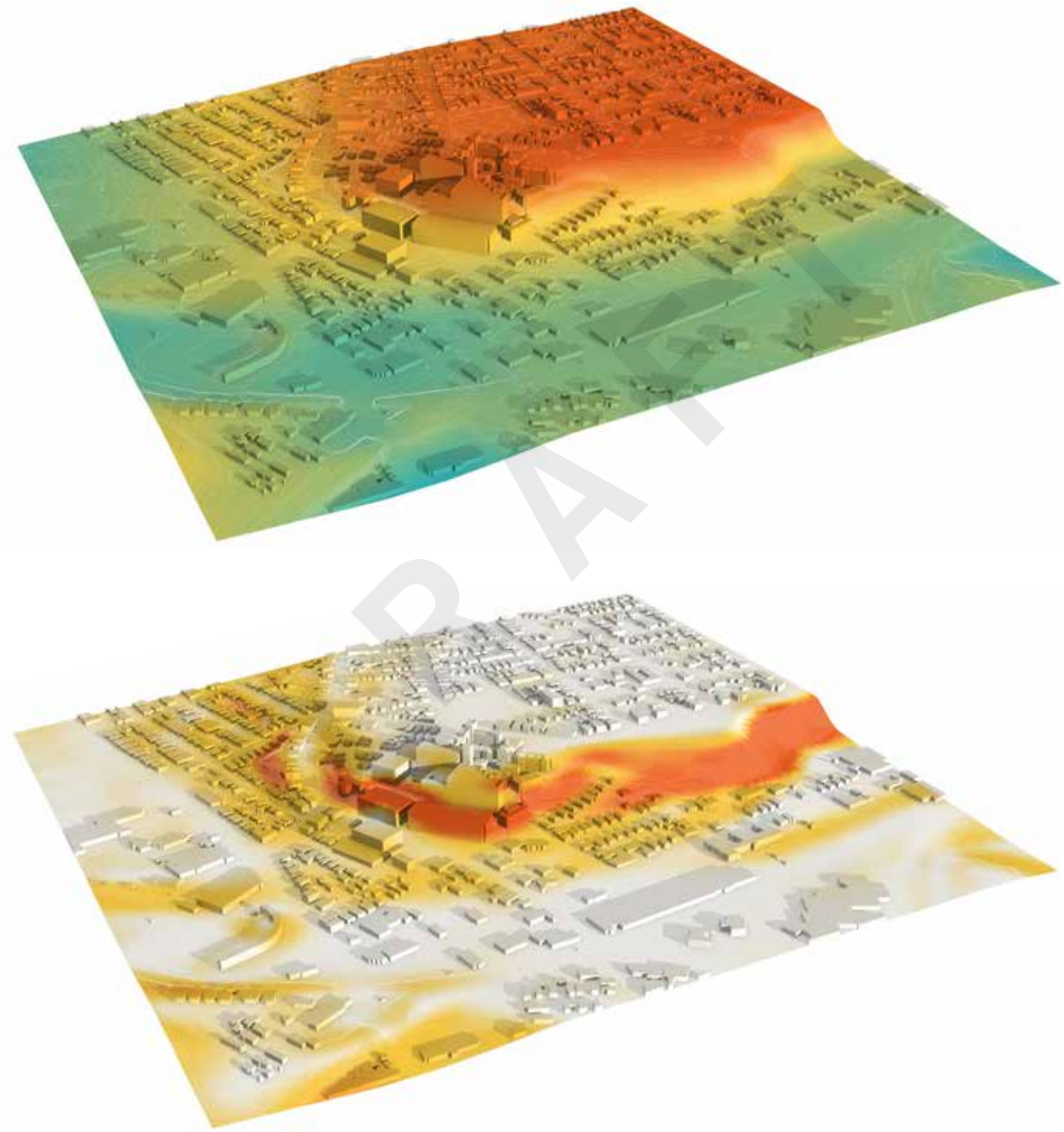

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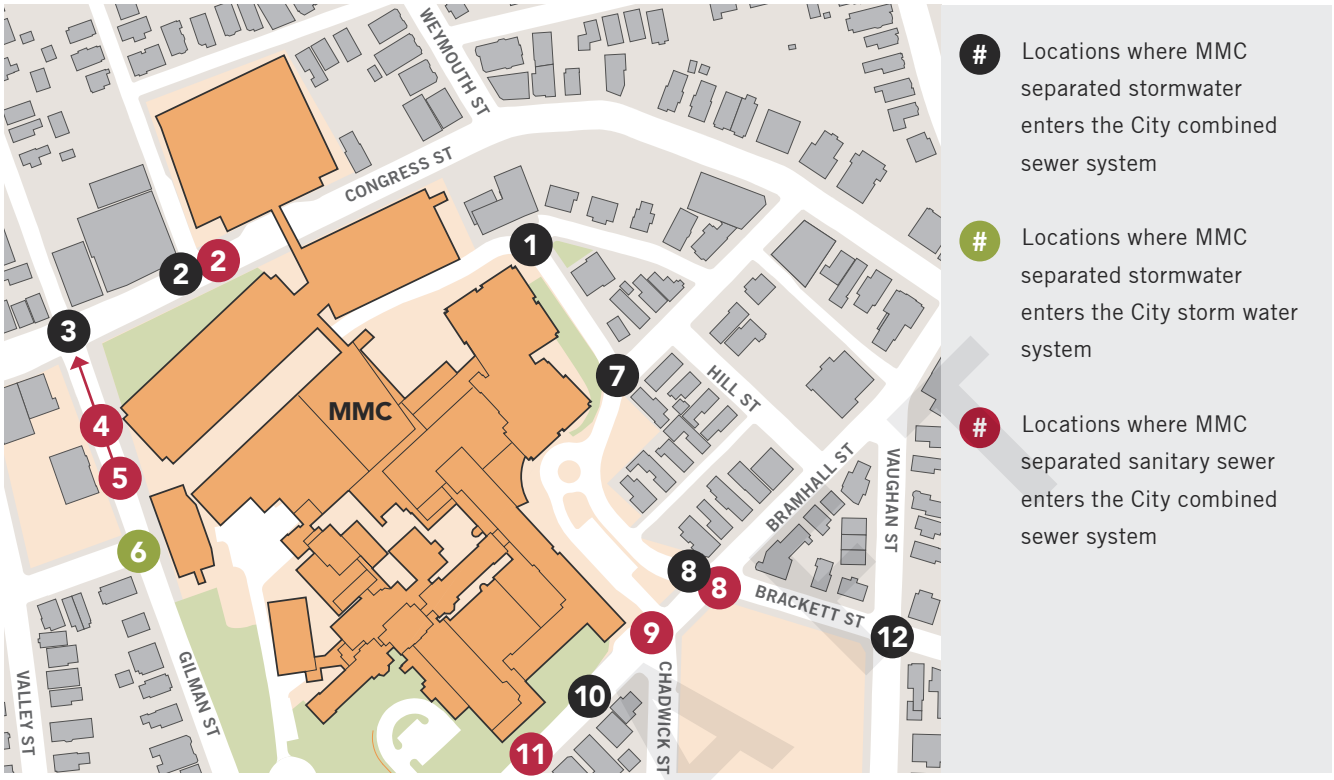
Fig.2.15 Existing Sewer Connection Points



LOC.	MMC STORM WATER FLOWS	MMC SANITARY FLOWS
1	Runoff from the campus and storm drains constructed by MMC in Wescott St enters a combined sewer manhole at the intersection of Wescott St and Crescent St. The outfall of this system a 12" combined sewer that drains in a westerly direction along Crescent St, eventually draining to Park Ave via sewers in Ellsworth St, Congress St and Weymouth St.	N/A.
2 2	Separated runoff from the MMC parking garage enters the municipal combined sewer at the intersection of Congress St and Forest St. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains north in Forest St to Park Ave.	Sanitary sewer outfalls from the MMC parking garages enter the municipal combined sewer at the intersection of Congress and Forest St. The sewer outlet from this manhole is an 18" reinforced concrete pipe that drains north in Forest St to Park Ave. Areas tributary to this system include the Emergency Department, Women and Infants Center and Richards Wing.
3	Runoff from areas of the campus along Congress and Gilman St enter catch basins connected to the City's combined sewer system at the intersection of Gilman and Congress St. From this point the combined sewer drains north in Gilman St to Park Ave. Runoff in the roadway that bypasses the catch basins at the intersection runs west along Congress to St John St.	Sanitary sewer flows from #4 and #5 enter the City combined sewer at this location.

LOC.	MMC STORM WATER FLOWS	MMC SANITARY FLOWS
4	N/A.	The sanitary sewer serving the LL Bean Building, Annex B / Maine General Bldg, and the Engineering Services Building enters the City's 12" concrete sewer in Gilman St. From this point the sewer drains north in Gilman St to Congress St (#3) and continues to Park Ave.
5	N/A.	The sewer service from the Central Utility Building enters the 12" concrete City sewer in Gilman St, a short distance above Location 4.
6	Runoff at the intersection of Gilman St and A St at the upstream end of a separated storm drainage system constructed by the City of Portland in 2001 as part of the St. John St sewer separation project. The storm drain was extended along A St, from its intersection with St. John St to a drain manhole in Gilman St opposite the MMC Central Utility Plant. This storm drain was extended to the hospital property specifically for the purpose of providing a point of connection for separated stormwater runoff from the hospital. In 2005 MMC constructed drainage on campus to collect runoff from areas of the site including the existing emergency room parking area, L.L. Bean Wing, and service areas abutting the Central Utility Plant to the A St storm drain. This project also extended the separated storm drain in Gilman St to the south, separating runoff in Gilman St and the Dana Center from the City's combined sewers.	N/A.
7	Runoff at the intersection of Ellsworth St and Wescott St. Separated storm drains constructed by MMC in 2005 connect to a combined sewer system manholes in Ellsworth St. The combined sewer drains in an east in Ellsworth St towards to Congress St.	N/A.
8 8	Separated storm drainage from the MMC parking lot enters the combined sewer in Charles St at its intersection with Bramhall St.	Sanitary sewer manhole in the intersection of Bramhall and Brackett Sts where sewer services from Pavilions A and C connect to the City sewer. The outfall of the manhole at this location is a 15" sewer that drains to the east in Bramhall St.
9	Runoff from small areas of the site along Bramhall St enters the combined sewer system at Location 8.	Sewer service from the south end of Pavilion A enters a City sewer manhole at the intersection of Bramhall and Chadwick St. From this location, the sewer continues east to Location 8.
10	Small areas along Bramhall St enter catch basins in the city right-of-way	N/A.
11	N/A.	Sewer manhole in Bramhall St where a sewer service from the Dana Center enters the City sewer in Bramhall St. From this location, the sewer continues east to Location 9.
12	Runoff at the intersection of Brackett St and Vaughan St where separated MMC storm drains in the Brackett St parking lot connects to the combined sewer draining southeast in Bracket St.	N/A.

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PUBLIC ENGAGEMENT IN IDP

MMC appreciates the importance of maintaining an open dialogue with its neighbors keeping its neighbors up to date on its evolving plans for replacement and modernization at its Bramhall Campus. In August 2016, MMC leadership met with the neighborhood representatives of its four adjacent neighborhood groups: St. John Valley, West End, Western Promenade, and Parkside to explain its need to modernize its campus. Since November 2016, MMC has met on a monthly basis with two representatives of each neighborhood ("Expansion Group") to engage in a productive dialogue regarding the City's new IOZ process and MMC's Institutional Development Plan. The City's Planning Director has been invited to each of these monthly meetings. Recently, an invitation was extended to a representative of the Libbytown neighborhood to join in the ongoing conversation. The minutes of the monthly meetings are distributed to the Group members who are asked to disseminate them to its neighborhood constituents.

MMC also has created a website (http://www.mmc.org/modernization) to ensure open communication with the community at large and specifically its

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Fig.2.16 Public Meeting #1 (January 12, 2017): Open House Portion for Collecting Public Comments

adjacent neighbors. The minutes of each Expansion Group meeting are posted on the website, as are any updates or current events occurring which involve MMC's plan. These include dates for the Planning Board workshops and hearings and a link to the City's Planning website. A designated contact email has been established where residents can ask questions, provide suggestions, etc.

Finally, to date, MMC has held two larger neighborhood meetings where information has been shared about MMC's needs and its plans to address its issues of bed capacity, operating needs and transportation and parking. These meetings have been well attended and have allowed time for participants to ask questions and to get answers. The minutes of these meetings, as well, are posted on the MMC website as well as submitted to the City of Portland.

MMC, its neighborhoods and the City staff have embarked, together, on the creation of a new zoning mechanism known as the IOZ/IDP.

Major Areas Of Public Concern

At the initiation of MMC's Master Facility Planning engagement with its neighbors, it was recognized there would be concerns identified by MMC as well as by the neighborhood residents which would require ongoing dialogue and an openness to new ideas or suggestions. It was understood that there may be many areas where consensus of approach will be reached, and other areas where reasonable minds could differ. MMC and the participants in this process have identified the following "areas of major public concern:"

- By far the biggest concern with the MMC proposed IDP revolves around transportation and parking, most notably the size of the MMC staff garage on the Gilman Block*;
- A fear of property acquisition by MMC in residential zones;
- Patients, visitors, or employees smoking in the neighborhood; and,
- Hope for continued public engagement between MMC and its neighbors.

* Note: Alternative employee parking solutions are currently being investigated.

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CHAPTER THREE

INSTITUTIONAL NEEDS

As it nears its 150th anniversary, Maine Medical Center continues to improve its facilities and services to fill its role as Maine's leader in patient care, education, and research. MMC is planning projects to address immediate clinical, building, and parking needs in the short-term.

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FACTORS AFFECTING HEALTHCARE PLANNING

There are a multitude of factors to consider in healthcare planning that are unique to the industry and some that limit the ability to plan too far into the future. Due to the unpredictability of many of these factors, healthcare planning beyond three years with relative accuracy is challenging. Therefore, healthcare planning is typically completed in three-year increments. For example, the rate of change in healthcare payment and policy often follows federal and state election cycles but can change as often as annually. A summary of factors that affect healthcare planning is included in the table below.

Table 3.1 Factors Affecting Healthcare Planning

Factor	Definition
POPULATION	Changes in utilization due to population growth: — Population increase or decrease — Population aging — Population distribution — Consumer preference
EPIDEMIOLOGY	The underlying causes of disease (divided into two categories): — Disease-based: Estimates the incidence and prevalence that are impacted in the long-run by preventative measure (i.e. vaccinations effectiveness) — Behavioral-based: Changes in disease incidence and prevalence due to behavioral and sociocultural factors (i.e. obesity, smoking, diet)
ECONOMICS	Macro-economic factors that affect healthcare utilization: — Employment — Healthcare Consumer Price Index — Gross domestic product growth or decline — Employer-based coverage levels — Benefit level and out-of-pocket expense — Regional/Local healthcare environment
PAYMENT & POLICY	Legislative and market-driven reform, including specific payment and policy innovations that will impact utilization: — Health insurance coverage expansion — Bundled payment initiatives/pilots — Accountable Care Organizations (ACOs) — Publicly-funded prevention and wellness initiatives
INNOVATION & TECHNOLOGY	Structural technology that shifts the site at which care is delivered or innovations that affect utilization across different care settings: — Imaging and diagnostics — New therapeutics — Pharmaceutical advancements — Quality innovations
SYSTEMS OF CARE	Increased efficiency resulting from better care coordination and serve integration across various care sites: — Clinical Integration: Use of evidence-based practices and elimination of redundant care — Alignment: Coordination between providers, including inpatient and outpatient providers — Information Technology: Includes computerized physician order entry (CPOE) and e-care
WORKFORCE AVAILABILITY	The healthcare workforce is highly specialized which requires years of training. The availability of qualified individuals can severely limit a healthcare organization's ability to provide care.

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MMC FUTURE NEEDS

Maine Medical Center (MMC) is a 637 licensed bed Academic Medical Center with an affiliation with Tufts University School of Medicine. MMC is the leading provider of tertiary services in the State of Maine. Tertiary services are defined as a set of Medicare severity diagnosis-related groups (MS-DRGs) that are rare and complex, require collaboration across treatment modalities, complex treatment decisions dependent upon unique diagnostic tests, regionalized care, and associated with complex co-morbidities and complications. MMC is the top provider of these services in the state. In 2014, MMC provided 42% of all the tertiary services for the state of Maine.

MMC treats Maine's sickest patients and estimates that the average patient seeking care at MMC will continue to get sicker. MMC's case mix index (CMI) was 1.86 in fiscal year 2015 (October – September); the highest in the state of Maine. A hospital's case mix index is calculated by finding the average severity of diagnosis-related groups at that hospital. The average case mix index for a hospital in the U.S. is 1.31 (CMS.gov). In fiscal year 2016, MMC's CMI grew to over 2.00 and is expected to continue to increase.

Key Drivers for Campus Transformation

MMC's facility needs are multi-factorial but can be summarized into three categories:

1. Immediate Clinical Need
2. Building Need
3. Parking Need

Immediate Clinical Need

On an average day, MMC can expect over 500 patients in the hospital and over 60 beds closed. On a routine day, MMC can expect approximately 100 admissions from Surgery and the Emergency Department and 30 to 50 transfer requests per day from other healthcare and provider organizations.

MMC routinely closes inpatient beds due to patient condition such as infection from disease-resistant organisms (DROs) or behavior related issues, room sharing restrictions such as male/female, and regular building maintenance. On average more than 60 beds are closed each day for these reasons. This along with construction closures for renovations and repairs reduces MMC's licensed bed capacity of 637 beds to an effective bed capacity closer to 560.

While MMC is licensed to operate 637 inpatient beds, the medical center operates at capacity with a census in the mid-500s. When 500 patients are in the hospital and over 60 beds are closed, a limited number of inpatient beds are available for new patients. Inpatient beds are specialized for medical/surgical, intermediate care, intensive care, psychiatric, pediatric, or infant care services. The actual number of beds available for specific populations of patients is much smaller. For example, if a patient needs a critical care bed but, the only beds that are available are general medical/surgical, then MMC struggles to meet that patient's needs.

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Fig.3.1 demonstrates a snapshot of the challenge MMC is faced with daily to meet the needs of the community. The challenge is expected to grow in complexity as patients get sicker and require highly specialized care.

Building Need

Facilities at MMC date back to the 1870's with the construction of the Maine General Building. Since the early 1900s, MMC has grown to meet the needs of patients. A building assessment was completed by a team of engineers in 2015 that evaluated essential systems in each of the buildings that comprise MMC's campus (see **Fig.2.2** on page 23). Close to 77% of MMC's clinical activities occur in buildings more than 30 years old. Nearly half of MMC's operating rooms are smaller than 500 square feet and over half of MMC's inpatient beds are in semi-private rooms.

MMC's Care teams work collaboratively with MMC's Facilities and Engineering teams to ensure patients are cared for in the best possible environment. This requires continuous maintenance and improvements to the facilities. The remaining opportunities for improvement and retrofits in the existing buildings are marginal. It is impossible to enlarge operating rooms or make semi-private rooms private without major disruptions to the delivery of patient care, reduction in capacity, major facility expansion, or some combination.

The proposed Development Plan (see page 58) will partially replace rooms and modernize MMC's campus to meet anticipated future need. Proposed patient rooms will be private and adaptable to the level of care needed by patients. They will be "universal rooms" capable of being occupied by a wide spectrum of patient populations from intensive care to recovery from surgery. Procedure rooms will be large enough to fit the equipment and technology needed for the complex procedures that patients increasingly require at MMC.

Parking Need

MMC hosts a wide variety of people on campus every day. Patients, families, staff, and students all require access to the facility. Patients and families from all over northern New England come to MMC for care. These people do not live close enough to take advantage of alternative methods of transportation like buses, cycling, or walking that are provided locally—even if they were healthy enough to do so. Clinical and support staff require safe, reliable, and often emergent, access to the facility in order to provide services to patients. Providing parking is a priority at MMC (see **Section 5** on page 80 for additional details).

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Fig.3.1 A Day In The Life Of Maine Medical Center: Bed Shortage

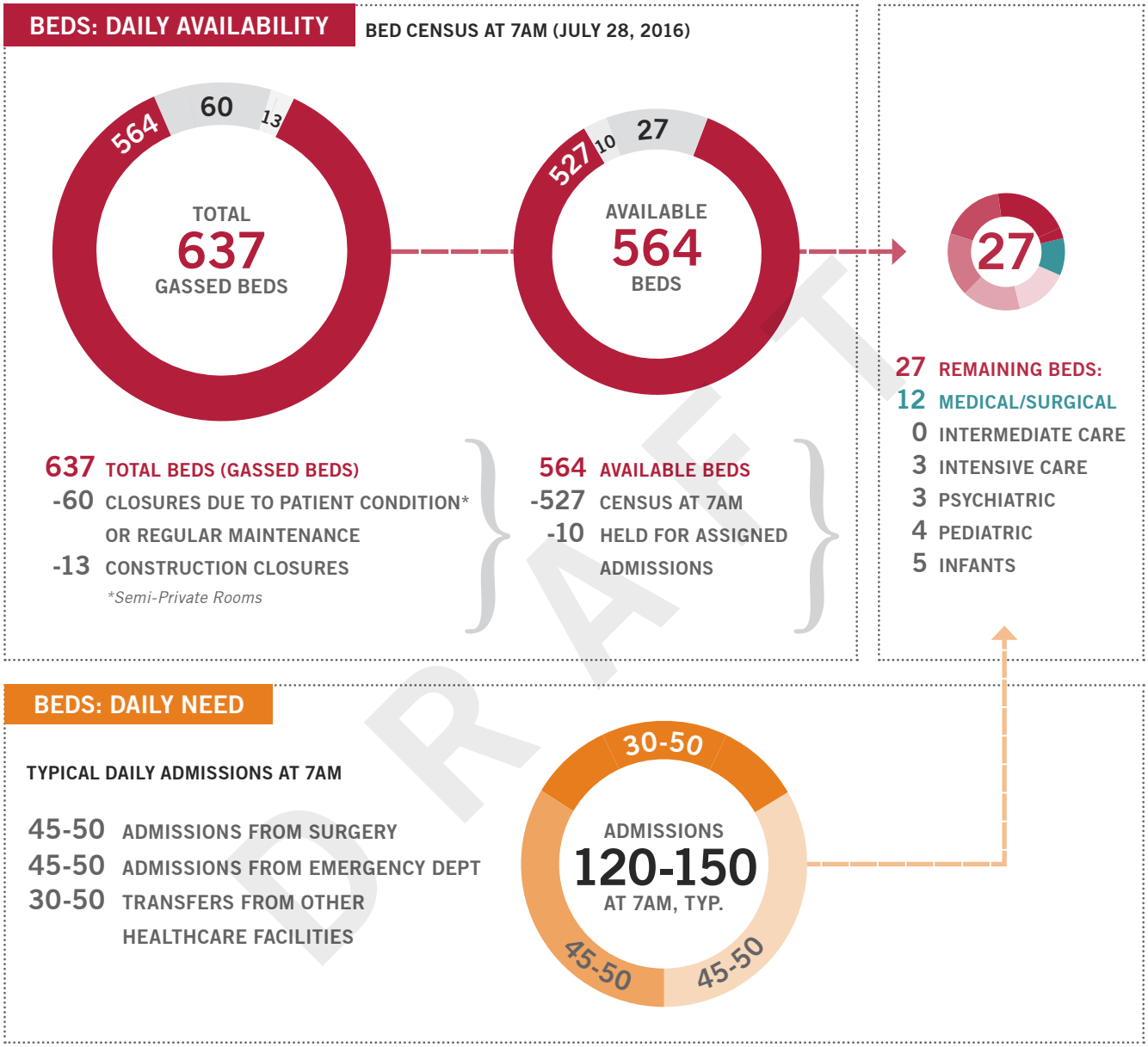
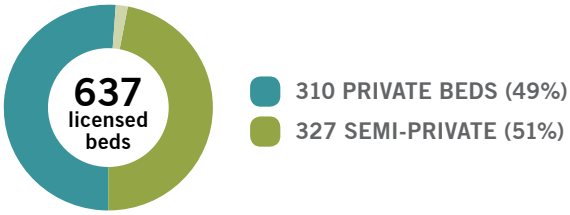


Fig.3.2 Existing Inventory of Private vs Semi-Private Beds



SHORT-TERM DEVELOPMENT PLAN (0-5 YEARS)

A series of projects have been planned throughout the campus to meet current needs and to improve the efficiency of care delivery. These projects are possible options for expansion.

The bed count will stay the same in the short-term. The Long-Term Plan adds approximately 770,000 GSF to the MMC campus over the next twenty years, and may also provide additional services and inpatient beds.

Demolitions

A Employee Garage Demolition
The 2015 building assessment does not recommend continued investment in this structure (see **Fig.2.2** on page 23).

D Removal of existing one and two-story structures currently used as office space and for small clinical functions will be required to construct the proposed parking garage.

E Abandonment of service road to enable connection between Congress Street Development (A) and existing facilities.

Additions / New Construction

A Congress Street Development, Phase I (New Construction, 285,000 GSF)
New six-story building along Congress Street on former site of the Employee Garage, plus two-story connector to the LL Bean Building. Building program includes: main hospital drop-off and entrance, universal, private inpatient beds and new operating rooms. The relocation of the main entrance changes the campus's orientation to Congress Street.

B Visitor Garage (Vertical Expansion)
Addition of three floors at top to accommodate 225 new parking spaces.

C East Tower (Vertical Expansion, 60,000 GSF)
Addition of two floors at top to accommodate 64 inpatient beds and relocated heliport.

D Gilman Garage (New Construction)
13-story free-standing garage to accommodate 1135 new parking spaces. **(Note: Alternative employee parking solutions are currently being investigated).**

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Fig.3.3 Short-Term Development Plan (0-5 Years)

EXISTING MMC FACILITIES
SHORT-TERM PROJECTS (0-5 Years)
DEMOLITION
ADDITION / NEW CONSTRUCTION (see opposite page for descriptions)

✱ Alternative employee parking solutions are currently being investigated.

LONG-TERM DEVELOPMENT PLAN (5-20 YEARS)

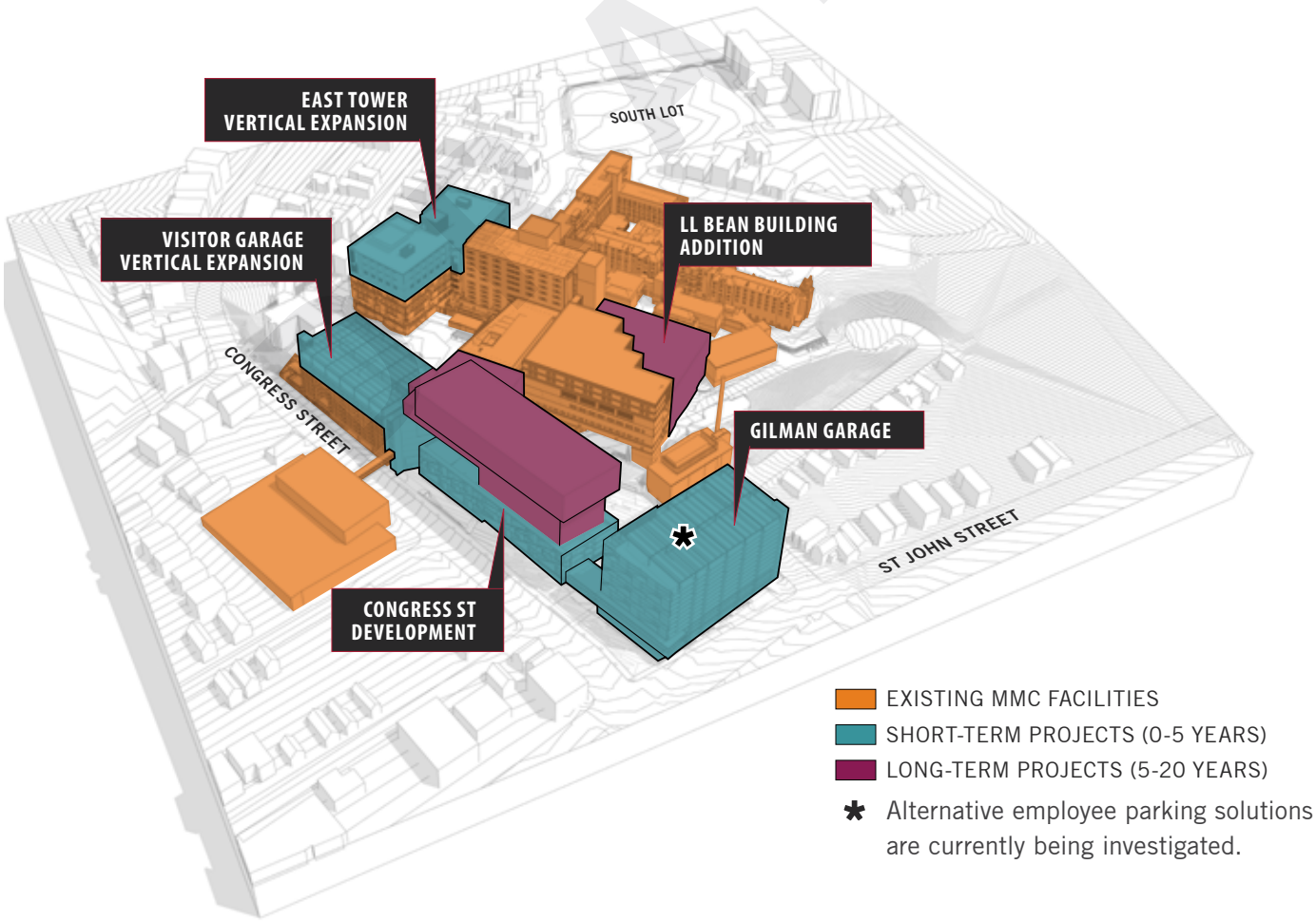
The facility planning process has also identified potential long-term projects that are identified below. Given the changing nature of the healthcare industry, it is currently uncertain if these projects will be implemented. MMC will continue to evaluate its facility needs, if any, following the implementation of the Short-Term Development Plan by 2023.

Long-Term Projects

Congress Street Development, Phases II and III (Vertical Expansion, Approx. 300,000 GSF)
Future vertical expansion to include additional private inpatient beds.

LL Bean Building, MFP Phase III (Addition, 120,000 GSF)
Expansion of diagnostics and treatment, and interventional platforms. If necessary, existing Laundry Building and Engineering Services Building may be modified or removed to facilitate expansion.

Fig.3.4 MMC Development Plan: Short- and Long-Term Projects



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Long-Term Redevelopment Zones

While no plans currently exists for other projects, all properties within the IOZ boundary are considered potential redevelopment zones for the long-term horizon. MMC may locate the following healthcare-related uses, including ancillary or supporting uses, within the City of Portland.

Table 3.2 MMC Potential Future Uses in the City of Portland

ON-CAMPUS (Within the IOZ Boundary)

Healthcare facilities including but not limited to the following ancillary and/or supporting uses:

- Hospital
- Medical Office / Clinic
- Laboratory Center / Services
- Research and Development Laboratory or Facility
- Educational Facility / Conference Center
- Administrative / Business Office
- Accessory Service or Trade Uses
- Guest House
- Medical Resident Apartments
- Rehab / Skilled Nursing Facility
- Retail Facility
- Restaurant / Cafe
- Employee Service Amenities
- Day Care Center (Child / Adult)
- Fitness Center or Gymnasium
- Parking Lot
- Parking Garage
- Bicycle Storage
- Heliport
- Antenna Station

OFF-CAMPUS (Outside the IOZ Boundary)

- Medical Office / Clinic, including Primary Care and/or Specialty Clinic
- Laboratory Center / Services
- Inpatient / Outpatient Surgery Center
- Imaging Services
- Physical Therapy Center
- Specialty Hospital
- Post-acute care
- Rehab/Skilled Nursing
- Respite Care
- Adult Daycare
- Administrative / Business Office
- Information Technology Center
- Distribution Center
- Parking Lot
- Parking Garage

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PROJECTED DAILY CENSUS

The anticipated change in campus users over time are summarized in **Table 3.3** on the following page. MMC developed this estimate considering the following summarized factors:

- MMC is Maine's largest medical center, the only American College of Surgeons Level 1 trauma center, the one of three American Academy of Pediatricians Level III nurseries and the largest academic medical center, in partnership with Tufts University School of Medicine and is therefore best equipped to meet the rising patient need.
- The number of Maine Residents seeking care outside of Maine has been decreasing over the past several years.
- MMC's share of inpatient discharges has increased over the past several years.
- MMC's Case Mix Index is increasing.
- Complex healthcare services are consolidating across the country.

MMC uses national healthcare consulting firm Sg2 and The Advisory Board to consider additional factors impacting the evolving healthcare industry and local demand for services. Additional factors considered in the volume estimate include:

- Changes in healthcare utilization as a result of changes in the population within the hospital's service area;
- Changes in the underlying causes of disease (i.e. incidence and prevalence of disease and the impacts of a focus on prevention) and behavioral-based impacts to health (i.e. smoking and obesity);
- Macro-economic factors affecting healthcare utilization (i.e. employment, employer-based insurance coverage, health care consumer price index);
- Legislative and market-driven healthcare reform;
- Innovations in technologies and models of care;
- Improvements in the systems of care that improve coordination among providers; and,
- Continuous process improvements within care models that reduce potentially avoidable admissions and 30-day readmissions.

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Table 3.3 Individuals on Campus on an Average Week Day, 10-Year Projection

	2016 (FYE Sept-Oct)	Forecast, 2026	Projected 10-Year Growth	CAGR (2016-2026)
Inpatient Discharges	99	107	7.84 %	0.76 %
Inpatient Visitors	248	267	7.84 %	0.76 %
Outpatient Activity	594	620	4.45 %	0.44 %
Outpatient Visitors	594	620	4.45 %	0.44 %
Bramhall Outpatient Clinics	153	150	-1.79 %	-0.18 %
Employees: Shift 1	3,639	3,892	6.96 %	0.67 %
Employees: Shift 2	206	220	6.96 %	0.67 %
Employees: Shift 3	519	555	6.96 %	0.67 %
Students on Campus: Medical	100	110	10 %	0.96 %
Students on Campus: Nursing	86	95	10 %	0.96 %
Other Students (PA, Pharma, etc.)	20	22	10 %	0.96 %
Non-MFP Related Contractors	25	25	--	--
TOTAL / AVERAGE	**6,283**	**6,683**	6.43 %	0.63 %

CAGR = Combined Annual Growth Rate

Assumptions:

- Daily inpatient discharges for 2016 estimated from annual count, using six-day weeks to accommodate for reduced activities Sun-Tue.
- Daily outpatient activity for 2016 estimated from annual count, using five-day weeks.
- Inpatient visitors estimated at 2.5 per patient for the base year of 2016.
- Outpatient visitors estimated at one per patient for the base year of 2016.
- 60% of employees are estimated to be on campus at one time for the base year of 2016.

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COMPLIANCE WITH THE COMPREHENSIVE PLAN

MMC, being a long term member of the City of Portland community, recognizes the City's Comprehensive Plan contains the overall goals for growth and change within the City by its articulation of a variety of policy directives and goals for the development of the City. Among other things, the Plan address the City's infrastructure, commercial/ business development, transportation resources, industry, and commerce and residential housing.

The IDP and the Regulatory Framework of MMC are in basic harmony with the City's over arching goals and policies. With its IDP and Regulatory Framework MMC has balanced and accommodated the many City goals and policies in a way that advances the City's overall best interests while at the same time addresses the high priority healthcare needs of Portland's residents and the people of the State of Maine. This balancing is exactly the type of flexibility that the City's recently drafted Institutional Overlay Zone zoning policy is meant to facilitate.

MMC's Institutional Development Plan: Compliance with the Comprehensive Plan

In this IDP, MMC communicates its needs to modernize its facility in order to meet the healthcare needs of the people of Northern New England. This includes not only upgrading clinical space and providing for the needs of its patients, but also continuing its investment in its personnel and their ability to travel to and from the workplace and secure needed parking. The Portland Comprehensive Plan "promotes the orderly expansion of institutional uses, such as educational and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies."

Economic Growth

Employee engagement indicators reveal that one of the issues of greatest importance to current and future employees, in addition to compensation, is parking availability. In order to attract a high quality, highly educated workforce, MMC factors into its operations these two important considerations. Following the completion of its short-term modernization project, MMC projects a growth in its employment base into the future in part because of its status as an excellent academic medical center located in the city of Portland. Portland's Comprehensive Plan promotes the growth in employment base and supports sustainable growth in education and medical institutions.

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Transportation

MMC has also considered its transportation needs holistically, factoring into its future development alternative means of transportation. Since 2009 the Medical Center has had in place a Transportation Demand Management plan called "Get on Board!". MMC is updating that plan and considering enhancements to encourage more walking, cycling, and public transportation by its employees. Changes by the City and State will be needed in order to make this Plan successful and allow for reliable alternatives to driving. It is recognized that this endeavor is a joint responsibility between MMC and the City and State which will take years to address. The Comprehensive Plan challenges the City to "support the vision of large, transformative projects [such as the MMC modernization project] through strategic, cost effective, and incremental actions. " MMC has been, and continues to be, committed to the process and has often been cited by the City of Portland Planning Department as a TDM role model in the City.

Environment

A clean environment is important for healing and health. MMC is environmentally conscious and engages in recycling to minimize the generation and environmental impacts of solid waste. The Hospital conserves water when possible, and has switched away from pesticides to more organic landscape solutions reflecting Portland's goal of "model[ling] environmentally sound landscape management practices, such as planting native species, and limiting the use of pesticides and fertilizers." Buildings are built with energy efficiency standards in mind. Local farmers market truck visits the campus weekly during harvest months and employees are encouraged to support the local food movement. The Comprehensive Plan also notes the need to "support a healthy, resilient, and sustainable food system by collaborating with local and regional stakeholders."

MMC's Regulatory Framework:
Compliance with the Comprehensive Plan

In keeping with the goals of the Comprehensive Plan, MMC has projected its future expansion needs, taking into account the neighborhood in which it is situated. MMC has minimized any expansion into residential areas adjacent to its campus, thereby preserving housing stock in the City. It has appreciated the neighborhood involvement in its zoning process and has been responsive to the concerns raised.

MMC is taking the bold step of reorienting its front entrance to Congress Street, which serves as a gateway corridor to the City of Portland. The area presently is commercial in nature and in need of investment and activation as is recognized by the City's Comprehensive Plan. Welcoming the public at

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the new front entrance accomplishes a number of land use goals: it adds tremendous activity to the streetscape, with people coming and going. It also eliminates traffic in the residential neighborhoods of the West End and Western Promenade by providing clear wayfinding directly off of Interstate 295 and the major arterials entering the City. Further, investment in this area will transform the area with the expectation that other properties in the vicinity will likewise invest. In fact, the owners of Union Plaza, located at the junction of Congress Street and St. John Street, testified before the Portland Planning Board that they have been waiting for such investment before they took the step of redesigning and investing further in that property. MMC expects, and is excited about, a transformation of the area into a more vibrant, active and clean area, good for local merchants, hospitality businesses, restaurants and residents.

The Comprehensive Plan identifies the St. John Street/Congress Street area as a "priority node, an area that has seen disinvestment, grown in sprawling patterns, simply have the potential to serve as focal points for change in the forms of increased density or, height, streetscape improvements, or diversification of uses to better serve neighborhood needs" (see **Fig.3.5** on page 67). MMC's IDP will serve as the catalyst to stimulate new development, investment and reinvestment in this area of the City.

From an analysis of MMC's IDP, it becomes clear that the IDP is consistent with the City's Comprehensive Plan and the Purposes contained within the City's Institutional Overlay Zone.

From an analysis of the Regulatory Framework that accompanies MMC's IDP, it becomes clear that the Regulatory Framework is consistent with the City's Comprehensive Plan and MMC's Institutional Development Plan.

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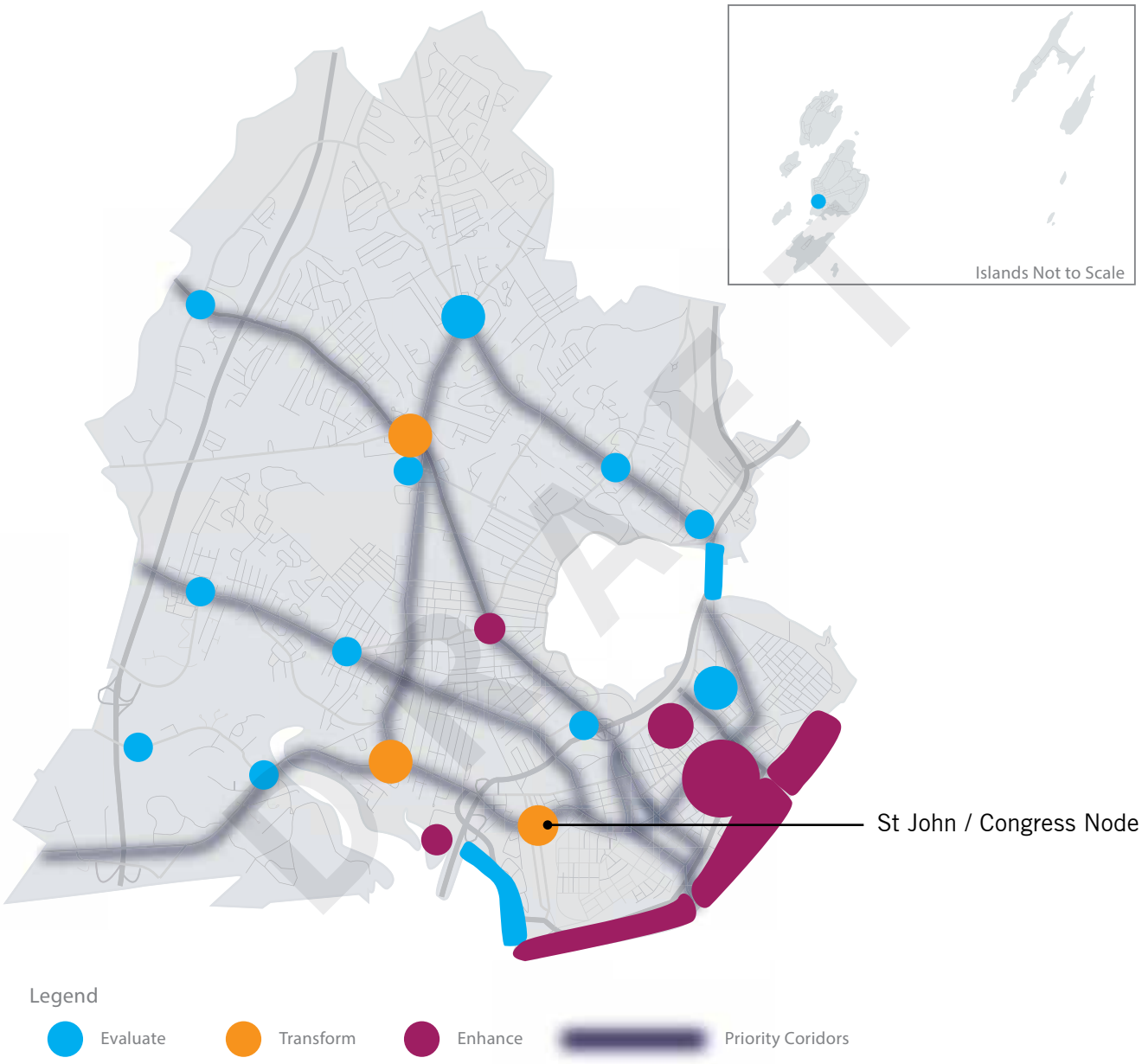
Fig.3.5 Diagram Showing Priority Nodes and Corridors, City of Portland Comprehensive Plan (2017)



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TRANSPORTATION PLAN

Maine Medical Center is developing a long-term transportation plan that will improve campus access, circulation, and wayfinding for patients and visitors. Ongoing initiatives are aimed at providing alternative transportation options to reduce traffic and parking impacts.

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Maine Medical Center's plan of transportation and parking improvements is designed to improve campus access, circulation, and wayfinding for patients, visitors, physicians, and staff. This plan will be developed and refined during the MDOT required Traffic Movement Permit process, with input from the City of Portland staff and the public, including adjacent MMC neighbors. This plan includes an assessment of the hospital's parking needs to adequately support the Bramhall Campus, and includes strategic initiatives aimed at providing alternative transportation options to reduce both traffic and parking impacts. The overriding goal throughout this transportation plan is to provide effective and intuitive transportation solutions that emulate Best Management Practices in transportation infrastructure and operations that support tertiary academic medical centers, enhance and optimize the patient experience, and improve overall traffic flow in the surrounding area.

The purpose of this chapter is to provide a framework for the key transportation elements of the transportation plan and for supporting infrastructure improvements that will address neighborhood concerns of on-street parking shortages and accommodate anticipated increases in MMC patient demand and staffing.

VEHICULAR ACCESS AND CIRCULATION

Well-designed curbside drop-off/pick-up areas for patients and visitors are critical to the functionality of any medical center campus. These amenities provide the opportunity for patients and visitors to quickly reach their destination, without the need to park their vehicle, and in some cases, having to walk long distances, often times unprotected from weather conditions. MMC provides both ambulatory /outpatient care and complex inpatient care at the Bramhall campus. Ambulatory/outpatient care services experience higher curbside demands for patient drop-off/pick-up activities because of the shorter visits and higher "turnover". Inpatient care centers have less turnover, but those patient's medical concerns are generally of a higher acuity, and with that comes higher rates of accessibility need. In addition to general patient access and egress by private vehicles, Maine Medical Center will also experience other demands created by taxis (including ride-share such as Uber, Lyft, etc.), shuttle buses, short-term deliveries (like flowers, etc), and staff – vehicles that do not necessarily park, but intend to only drop-off passengers and then exit the hospital campus.

Proposed Main Entrance Relocation

MMC's Short-Term Development Plan includes a new Main Entrance on Congress Street to improve access and egress for patients and visitors. As previously described in the Existing Conditions section, most motorists arrive on campus via

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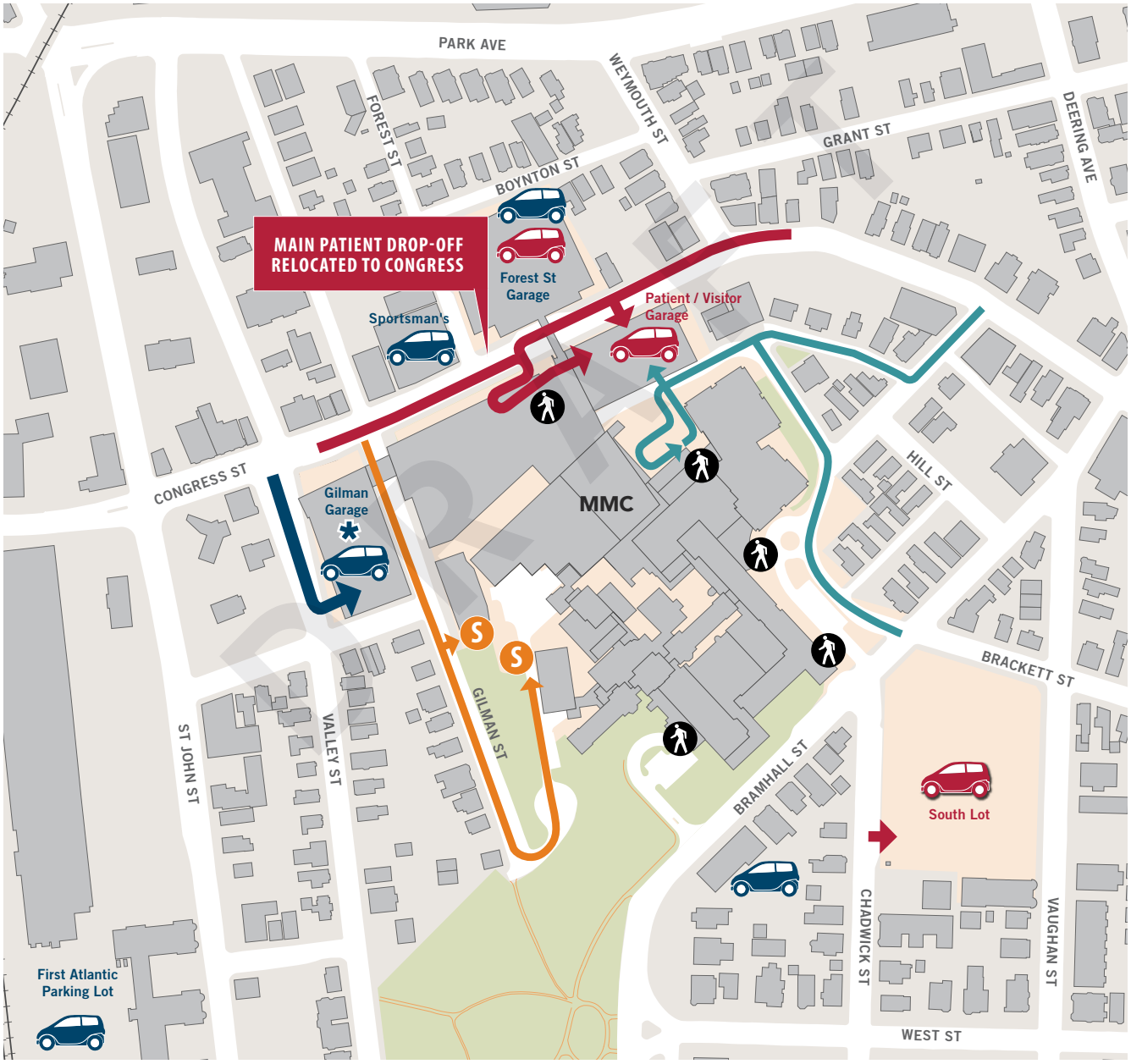
Fig.4.1 Transportation Plan (Future): Vehicular Access and Parking

KEY VEHICULAR CIRCULATION ROUTES

- Patients / Visitors
- Emergency Drop-off / Ambulance
- Staff
- Service

PARKING

- Patients / Visitors (including parking after emergency drop-off)
- Staff Parking (In map extent only)
- Limited Parking for Service Vehicles / Service Staff



✱ Alternative employee parking solutions are currently being investigated.

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Congress Street and either park off Congress Street in the Congress Visitor Garage, or use Bramhall Street to reach the emergency room or main entrance on Charles Street.

It is anticipated that the new Congress Street main entrance will be used primarily by vehicles dropping off or picking up patients, shuttle buses, or short-term deliveries (like flowers, etc). The design will allow vehicles to either exit back onto Congress Street or directly enter the adjacent Congress Visitor Garage after passing through the drop-off zone without having to go back onto the public street. The existing hospital entrance (at the East Tower) will remain open and continue to accommodate some defined patient demand. Changes to patient/visitor circulation and the impacts on Congress Street traffic operations will be studied as part of the Traffic Movement Permit Application (TMP) process as described in a following section of this report.

The new main entrance is expected to improve access to the campus while reducing vehicular traffic on neighborhood streets. Work is currently underway to identify design options for the new main entrance and drop-off that minimize impact on existing pedestrian, bicycle, transit and vehicular traffic along Congress Street. MMC is currently studying queuing demands in order to estimate the projected demand at the drop-off/pick-up at the proposed main entrance on Congress Street and ensure that the geometric configuration of that space is suitable to support future anticipated demands and does not generate adverse traffic impacts along Congress Street. The proposed site plan will be reviewed as part of the State's Traffic Movement Permit (TMP) Application and the City's Site Plan review process.

Proposed Employee Parking Garage Relocation

As part of MMC's Short-Term Development Plan, the existing 1,274 space Employee Garage will be demolished. MMC is looking at multiple sites currently for the replacement of lost employee parking spaces.

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Loading and Service Vehicles

Loading and service vehicles will continue to use Gilman Street to access the Utility Plant and Engineering and Services Building. This IDP submission does not anticipate changes to how loading and service functions are handled at the MMC Bramhall campus. The current configuration provides for separation between loading/service vehicles and patient, visitor and employee vehicles on-campus. The current location also provides for direct, convenient access to arterial roads and regional highway connections. Trucks will continue to access/egress loading dock bays off-street and not impede vehicular flows on area roadways or in surrounding residential neighborhoods.

Traffic Movement Permit

As mentioned previously, the traffic impacts of the MMC Short-Term Development Plan will be studied comprehensively as part of the MaineDOT TMP application process delegated to the City of Portland. A project generating a net increase of 100 peak hour trip ends or greater must apply for and obtain a TMP prior to receipt of a Certificate of Occupancy. The proposed Development Plan will be required to obtain a TMP, as it does trigger this 100 peak hour trip end threshold.

Some of the traffic items reviewed as part of this application include:

- Trip generation methodology
- Trip distribution assumptions
- Weekday morning and evening traffic operations/capacity analyses
- Average and 95% queue analyses for key intersection approaches
- Pedestrian and bicycle safety evaluations
- Identification of potential mitigation to address identified deficiencies created or exacerbated by the proposed development.

The conduct of a comprehensive Traffic Impact Study typically requires several months to develop, and involves close inter-coordination between the City and the applicant. Since the TMP is technically a MaineDOT permit, it is a separate process from all other City processes; however, it typically runs concurrent with the site plan approval process.

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FUTURE PARKING CONDITIONS

With regard to Parking, the goal of MMC's transportation plan is to accomplish the following key objectives:

1. Address neighborhood complaints of MMC staff occupying on-street parking spaces.
2. Support a premier arrival experience for patients and visitors
3. Where feasible, allow for segregation of MMC patients/visitors and staff parking
4. Rely upon an enhanced TDM program to help reduce vehicle trips and parking demands wherever reasonably feasible
5. Provide for a parking supply that is sufficient to support the medical center and is comparable to other peer institutions.

The aspects of the parking plan are described in greater detail in the text below.

Future MMC Parking Demand Summary

As MMC implements their Transformation Plan, there will be an increased demand for parking that is driven by growth in patient demand. Currently, MMC anticipates that the overall patient demand will grow by 8 percent over the next ten years (or 0.75 percent per year). Similarly, employment at MMC is expected to grow by approximately 7 percent over the next ten years (or 0.7 percent per year). These expected trends will result in increased parking needs.

As described previously in the Existing Conditions chapter, the Bramhall campus is served primarily by three large on-campus facilities that accommodate both patient/visitor and physician/staff parking. There are also several off-campus parking facilities that provide additional remote staff parking. The following key points summarize MMC parking activity under current conditions, and provide the context for assessing and understanding the parking objectives that are proposed for the transportation plan:

- Under current conditions, the MMC parking system typically operates at capacity during the weekday daytime hours.
- The hospital requires about 150-200 additional on-campus parking spaces to alleviate current 2017 staff parking shortfalls that have been estimated via observations and data collection activities, and to eliminate the need for MMC staff to park on neighborhood streets.
- When compared to other peer academic medical centers, MMC generally has a lower parking-to-licensed bed ratio both for its patients as well as its physicians and staff.

Modifications

Key patient/visitor and physician/staff parking supply actions resulting from the MMC Transformation Plan are summarized as follows:

- Congress Visitor Garage Addition: MMC will expand its existing 480-space Congress Visitor Garage by three levels to

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accommodate an additional 225 spaces by 2019.

- New Gilman Garage: MMC will demolish the existing 1,274-space employee garage and construct a replacement Gilman Employee Garage on Congress Street that will contain a supply of 1,135 spaces. (NOTE: Alternative employee parking solutions are currently being investigated.)

Patient/Visitor Parking

The patient/visitor parking needs will be fully accommodated by the Short-Term Development Plan. However, there will be a period of time when there will be a temporary shortfall of patient parking spaces. This period of time is associated with the construction of the Congress Visitor Parking Garage Addition, which requires some parking to be taken out of service temporarily. To help alleviate this shortfall, MMC intends to maximize parking opportunities elsewhere and/or increase valet services from satellite lots. All other means of assisting patient and visitor parking will be considered prior to the commencement of construction of the visitor garage addition. The Development Plan will increase patient/visitor parking supply from 850 spaces to 1,075 spaces (or an increase of 225 parking spaces). As a ratio of parking spaces per bed, MMC's position will improve from an existing ratio of 1.33 (a rate that is low when compared to peers) to 1.68 (average to its peers). Parking rates for peer institutions are listed in **Tables 2.8 and 2.9** in Chapter 2.

Staff / Physician Parking

Detailed review and observation of existing staff/physician parking supply/demand and anticipated growth indicates that there will be a measurable shortage of available parking to support anticipated future staff demands. This shortfall is driven by the following factors, based on an evaluation of current parking practices and future parking capacity:

- Future staff growth
- Staff parkers relocated from patient parking facilities
- Staff parkers prohibited from using neighborhood on-street parking

In total, MMC estimates a need for 500-600 additional staff/physician parking spaces to accommodate future demands. Studies to determine an appropriate parking solution that accommodates these demands and is supportive of the IDP are currently underway.

This increase in staff / physician parking supply will improve MMC's ratio of staff / physician parking to patient beds from their existing ratio of 3.18, which is very low when compared to peer academic medical centers, as illustrated in **Table 2.9** in Chapter 2.

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FUTURE TDM STRATEGIES

MMC is committed to reducing single-occupant vehicle (SOV) commuting. As the Medical Center looks to the future, it seeks to build on the past successes of its "Get On Board!" Program. Based on a review of census data, employee travel origin and destination information, existing employee travel mode split, and transportation survey results, MMC believes it can further reduce the portion of employees driving alone to work, thus reducing trip making and resultant parking demands. An initial estimate is that an additional 1.5% of the daytime population could be shifted into alternative modes of accessing the campus. This represents approximately 65 fewer individuals driving alone to campus.

The reduction would be achieved through MMC's existing TDM initiatives, as well as new strategies. MMC is considering the following range of new programs. It will endeavor to reduce the number beyond the target identified above through further enhancements or program expansions in the coming years.

Increased Education of Employees about the "Get on Board!" Program

Presently, all new MMC employees receive information and sign up materials for the "Get on Board!" program during the MMC New Employee Orientation process. MMC will be enhancing that education process by periodically educating existing employees of the options and benefits available through the "Get on Board!" program. Additionally, newsletters will be distributed highlighting the environmental, health and other benefits of TDM.

"Get on Board Coordinator!"

MMC will be hiring a "Get on Board!" Coordinator responsible for the implementation, operation and continuing sustainability of MMC's TDM. This individual will continually monitor the program, its operations and future opportunities to reduce vehicle dependency by staff at MMC. The Coordinator will also be responsible for data collection and TDM updates as required.

Pay for Parking

MMC will charge its employees no less than $3 per paycheck to utilize MMC parking.

Guaranteed Ride Home (GRH) Program

For those employees who regularly use alternative modes of transportation to and from its Bramhall Campus, MMC will guarantee a ride home in emergency situations.

Enhanced Active Transportation Network

As noted above, changes along Congress Street and adjacent streets should enhance the streetscape and overall quality of experience for pedestrians and cyclists. MMC supports enhancements for pedestrians and cyclists improving access to the campus. As the City, generally, experiences an increase in its residents walking and biking to other work locations throughout the City, an increase in people visibly using alternative forms of transportation the streets of Portland may spur more participation by MMC employees in the future.

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Fig.4.2 Portland Bikeway and Pedestrian Network *(Source: City of Portland, 2014)*

EXISTING FACILITIES

- Bicycle Lane
- Paved Shoulder
- Neighborhood Byway
- Shared Use Pathway
- Shared Lane, with Marking
- Shared Lane

PLANNED FACILITIES

- On Road Bikeway
- Neighborhood Byway
- Shared Use Pathway or Rail with Trail

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Enhanced Transit Fare Discount

MMC employees can currently purchase METRO bus tickets at a discounted price from MMC. Increasing the discount on METRO tickets would provide employees with an additional financial incentive to use the transit system serving the MMC district. METRO may need to improve its services in order to meet hours of operation at twenty four hour facilities such as MMC, however.

Enhanced Carpool/Vanpool Matching

"Get on Board!'s" most successful initiative to date has been its carpooling program. Most of these connections are ad-hoc. MMC could increase participation by actively matching potential riders. Additionally, while Go Maine is the primary administrator of vanpools in the state, MMC could work to proactively identify and assist with the formation of vanpools.

Active Transportation Incentives

MMC will undertake an internal marketing program which offers fun and useful prizes for those participating in alternative modes of transportation. Making alternative transportation fun and a community-wide effort is likely to increase participation by some who might not otherwise engage in the process.

UCar

Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar presently located in its Congress Street parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and use of the UCar.

Transportation Survey

MMC will conduct a Transportation Survey of its employees every 2 years to collect data about commuting mode split, barriers to TDM use and marketing effectiveness.

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FUTURE TRANSPORTATION PLANNING CONSIDERATIONS

The patient experience of getting to and leaving MMC is also critically important to the transportation plan. Inefficient area traffic operations can lead to delays in patient treatment and an increase in patient frustration in addition to negative impacts on the adjacent local neighborhoods. MMC will need to accommodate new patients/visitors and add employees to the campus, increasing traffic demands on the existing roadways, however modestly. Initially identified issues and possible improvements that should receive additional consideration include the following measures:

- Community Access Circulation: Focus on logical traffic flow, pedestrian access and safety, bicycle access and on-street parking.
- Managing key neighborhood access and circulation concerns:
  - » Chadwick Street: A portion of Chadwick Street is one-way. The conversion to two-way could reduce the amount of traffic going further into the West-end neighborhood. MMC will work with the City to investigate the viability of converting this road section into two way travel.
  - » Chadwick Street at West Street: Develop potential safety improvements at this unsignalized intersection. Neighborhood comments have indicated observations of low compliance with stop-signs and two-way travel. However, if Chadwick is made two –way, the need for improvements may be eliminated.
  - » Vaughan Street at Bramhall Street: This is a difficult intersection geometry for pedestrians, cyclists and vehicles. Develop potential safety improvements for the unsignalized intersection.

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CHAPTER FIVE

ENVIRONMENTAL AND INFRASTRUCTURE PLAN

Sustainable and resilient infrastructure is key to ensure safe and efficient operations of healthcare facilities in the 21st century. Maine Medical Center is seeking to advance its good stewardship of environmental and infrastructure resources through its Institutional Development Plan.

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NATURAL RESOURCE PROTECTION

The Maine Medical Center Bramhall campus is located at a high point in the west end of the Portland peninsula. There are several locations where natural resources are significant (see **Fig.5.1** on page 82):

- The Western Promenade, a culturally significant public park that is listed in the National Registry of Historic Places (NRHP'89);
- MMC-owned landscape along Bramhall Street abutting the Western Promenade and serving as a foreground to the Maine General Building and original hospital structure;
- MMC, located in an urban setting, maintains small landscaped areas that provide visual respite from surrounding hard scape. These areas are well maintained, flowers watered and mulched and trees fertilized in order to preserve the pleasing aesthetics important to its neighbors, employees and patients. landscaped campus; and,
- MMC-owned natural area along Gilman Street. This steeply sloping zone contains natural vegetation consisting primarily of mature evergreen tree growth which serves as a natural buffer between the hospital and residences on Gilman Street.

The Western Promenade, in particular, is a treasured resource for the public, including employees, patients and visitors to the MMC Bramhall Campus. The Development Plan utilizes vertical expansion and/or previously developed sites to minimize impact on natural resources and maintain existing campus open spaces. The plan does not encroach upon or negatively impact any of the natural resources listed above.

Fig.5.1 Campus Relationship to the Western Promenade

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PROJECTED UTILITY DEMAND

Green Building Design

The historic Maine General Hospital incorporated natural light and ventilation as an important part of the healing process. The design of buildings identified in the Development Plan will take advantage of the natural light, heat, and ventilation, which will not only contributes to the healing process and improves the quality of patient and family spaces, but it also improves the building's energy performance.

Energy

Healthcare projects and hospitals are traditionally some of the largest consumers of energy by building type due to the demands of the internal programs. It is the goal to reduce the impact of these projects by minimizing energy consumption. A key element is to lower the Energy Use Intensity (EUI) for each project against the traditional code minimum baseline to both address sustainable goals and reduce the impact on infrastructure. Use of industry standards such as LEED will serve as a model for evaluation of future buildings on the MMC campus.

Each project in the Development Plan has specific needs and vary in their impacts. The proposed projects combined are anticipated to generate 5,400 KW of additional electricity demand (see **Table 5.1** for details). MMC is currently working with Central Maine Power to identify capacity for the projected energy loads.

Steam

The steam loads are met by the Central Utility Plant and will not impact city infrastructure. The removal of the laundry facility to an off-site location has created extra steam capacity for the campus. MMC's Central Utility Plant has the capacity needed to service MMC' short term growth needs.

Gas

The gas infrastructure has capacity to handle any increases to the current steam load.

Table 5.1 Projected Energy Demand

		Projected Net Energy Demand	Potential On-Site Energy Production (Rooftop PV)
Gilman Garage*	Stand-alone project not on the campus primary metered system	1,250 KW	300 KW
East Tower Vertical Expansion	Utilizing new systems for efficiency	300 KW	--
Visitor Garage Vertical Expansion	Utilizing existing systems	350 KW	150 KW
Congress Street Development	Net demand with the deletion of the existing garage currently on site	1,700 KW	
Central Utility Plant Expansion	Additional summer cooling demand	1,800 KW	
TOTAL ENERGY DEMAND		**5,400 KW**	**450 KW**

* Alternative employee parking solutions are currently being investigated.

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Sanitary and Stormwater Flows

The development site is served by a combined sewer system at multiple locations surrounding the campus. We are unaware of any existing capacity issues in the City's existing system and will have to rely on the City to identify known off-site deficiencies.

Sanitary Sewer Impacts

The East Tower expansion will increase sanitary flows in the combined sewer located at the intersection of Congress Street and Forest Street ultimately discharging to the Forest Street combined sewer. The increased sewer flow has not yet been determined. The East Tower project is not expected to affect stormwater flow rates.

The Congress Street Building will increase sewer flows in the Congress Street combined sewers. The sewer connection locations and loads have not yet been determined and more than one connection location may be required. New sewer flows from the Congress Street Building are expected to increase sanitary flows in the combined sewer located at the intersection of Congress Street and Forest Street ultimately discharging to the Forest Street combined sewer. The Congress Street Building may also include a sewer connection increasing flow in the combined sewer located at the intersection of Congress Street and Gilman Street ultimately discharging to Gilman Street.

Stormwater Impacts

The East Tower and Visitor parking garage projects are vertical expansion and are not expected to increase or decrease stormwater discharge. Both of these project currently discharges stormwater to the combined sewer located at the intersection of Congress Street and Forest Street ultimately discharging to the Forest Street combined sewer

The Congress Street Building will be required to meet the City's stormwater management ordinance requirements and mitigate any increases in discharge to the extent practicable. The current design of the building and project site redevelopment includes an extensive green roof component and proposes removals of existing impervious area. The net impact of this design is expected to result in no increase in the peak rates of runoff from the site. If necessary, a subsurface chamber system is being considered as a stormwater treatment measure to further mitigate increases in discharge to the City system. The project may however alter the location of the discharge points to a limited extent.

The primary existing stormwater discharge point for the Congress Street Site Congress Street Site is the combined sewer at the intersection of Congress Street and Forest Street ultimately discharging to the Forest Street combined sewer system. A limited amount of stormwater from the Congress Street Site drains to the Gilman Street combined sewer. It is expected that the primary post-development

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stormwater connection will be to the Forest Street Combined sere at the intersection of Congress Street and Forest Street

The Congress Street Building will be required to meet the City's stormwater management ordinance requirements and mitigate any increases in discharge to the extent practicable. The new Gilman Garage* is comprised of the redevelopment of an existing site removing buildings and surface parking and replacing it with a new parking garage. Preliminary studies indicate that the rate of runoff from the site will be relatively unchanged. A subsurface chamber stormwater treatment system is proposed to provide stormwater quality treatment measure, further mitigating increases in discharge to the City System. The site will discharge to the existing combined sewer in Congress Street discharging west toward Saint John Street.

Other Impacts to City Infrastructure

The electrical meter and service for the street lights on Congress Street in front of the Congress Street building will be relocated as part of MMC's Short-Term Development Plan. At least one city street light will be removed for the construction of the new Congress Street entrance. We are not aware at this time of other impacts to City owned infrastructure.

* Note: Alternative employee parking solutions are currently being investigated.

OPERATIONAL IMPACTS

Noise Impact

MMC's Development Plan aims to minimize noise and disturbance both for the benefit of its neighbors and its patients. Key to this is relocating the main campus entrance to Congress Street. This will limit traffic and associated noise from moving up onto the hill. The relocation of the helipad will maintain current flight paths, which were designed to minimize neighborhood noise impacts by following the recommended approach to the hospital over the Congress Street corridor as opposed to over dense residential areas.

Hazardous Waste Generation and Disposal

MMC has a Hazardous Materials and Waste Plan supported by policies for the handling and disposal of hazardous waste, universal hazardous waste and biomedical waste.

Biomedical and Hazardous Waste

Biomedical waste sharps, biomedical waste, pathological waste (tissues, etc), and hazardous pharmaceutical and other chemical waste are collected by MMC Environmental Services or contractors, and stored at secure locations across campus prior to pick up, transfer, and ultimate disposal by contractors. DEA controlled substances are wasted at the point of generation (e.g. medication rooms), solidified, and collected by MMC Environmental Services at a secure holding room for pick-up, transfer and ultimate disposal by contracted vendor. All hazardous materials leave the campus through the loading docks (see **Fig.5.2**).

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MMC's Short-Term Development Plan is not expected to create significant increases waste volumes. No changes are currently planned to hazardous materials storage and transfer locations on campus.

Grease Discharge

MMC will be installing a grease trap system capable of separating grease from waste water as part of its Short-Term Development Plan.

Soiled Linen

MMC has its own Linen Services department that is responsible for overseeing the processing of laundry for all of MMC and Maine Medical Partners (MPP) locations. The plant is located in Westbrook, and the linen is transported between these locations by MMC's Materials Management team.

Sustainable Operations

MMC expects to continue, and where possible, expand on the following sustainable operation strategies as part of its long-term plan.

Campus Recycling

MMC separates paper and cardboard out of the waste stream through on-campus recycling. MMC Kitchen and Café provide recycling for can and bottle returnables, and separate compostable items from the waste stream. MMC has also switched to reusable needle boxes to reduce plastic waste. Expired medical equipment and devices are reprocessed by contractors.

Landscaping

MMC contracts with an outside landscaping company. In renewing its contract, MMC is requiring the use of organic pesticides and fertilizers for all planting and green space on campus.

Snow Removal

MMC contracts with an outside snow removal company. The environment requires the use of melting agents, but MMC has taken steps to minimize its use by installing heated sidewalks at the front entrance and South lot entrance as well as the Emergency Department entrance. MMC will continue to use replace calcium chloride instead of salt, when possible, to reduce environmental impact of snow removal.

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Fig.5.2 Environmental Protection Plan

MMC FACILITIES
- Existing Buildings To Remain
- Short-Term Projects
- Long-Term Projects

PROTECTED OPEN SPACES
- A Western Promenade (NRHP'89, City-owned)
- B Bramhall Street Landscape (MMC-owned)
- C Gilman Street Landscape (MMC-owned)

MMC OPERATIONS
- Hazardous Waste Departure Point
- New Grease Trap System (Location TBD)

✿ Alternative employee parking solutions are currently being investigated.

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DESIGN

Maine Medical Center aims to continue its tradition of design excellence with its new campus projects. Future buildings are being designed to improve care delivery while also providing a new gateway to Portland on Congress Street.

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NEIGHBORHOOD IMPACTS

MMC's vision is "Working together so our communities are the healthiest in America." MMC sees the IDP as an opportunity to design an environment for better care delivery that also improves the overall neighborhood condition.

The following section outlines some of the different design aspects that MMC's Development Plan takes into account to improve its immediate context.

Minimizing Shadow Impact

In order to understand the shadow impact on the campus surroundings, the design team has done detailed shadow studies (see **Fig.6.1** on page 91). The objective of the new building massing is to minimize the shadow impact to surrounding areas.

Along Congress Street and Valley Street, the Development Plan is minimizing the shadow impact of the new buildings by either bringing the overall building height down as much as possible and/or by setting the building massing back from the sidewalk to allow more sunlight to hit the street.

Context-Appropriate Lighting

By modulating the lighting intensity along the campus edges, the Development Plan responds to its immediate context in a respectful way. Providing appropriate artificial lighting will help create a safe environment within and around the campus. At the same time, the lighting design takes into account the necessary lighting cut-offs to minimize the impact on the neighboring properties.

For instance, the Development Plan proposes having the highest level of lighting intensity along Congress Street since this is a commercial street. Indoor circulation and waiting areas are located along Congress Street animating the streetscape 24/7. Along streets that are adjacent to residential areas, the lighting intensity is minimized and strict light cut-offs prevent artificial lighting from spilling into the neighbors' properties.

Mitigating Wind Impact

Upon final design of MMC's applicable site plans, it will consult with the City of Portland's Arborist to selectively determine the placement of trees or other landscape features on any new landscape areas on the campus to minimize the amount of wind created by the buildings' mass.

Mitigating Impact of Building Heights

The overall buildings' heights are kept to a necessary minimum. Generous setbacks and potential public landscaped areas along sidewalks will mitigate the buildings' heights along Congress Street and Valley Street.

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Fig.6.1 Future Campus Buildings Solar and Wind Studies

SUMMER SOLSTICE (JUNE 21)

WINTER SOLSTICE (DEC 21)

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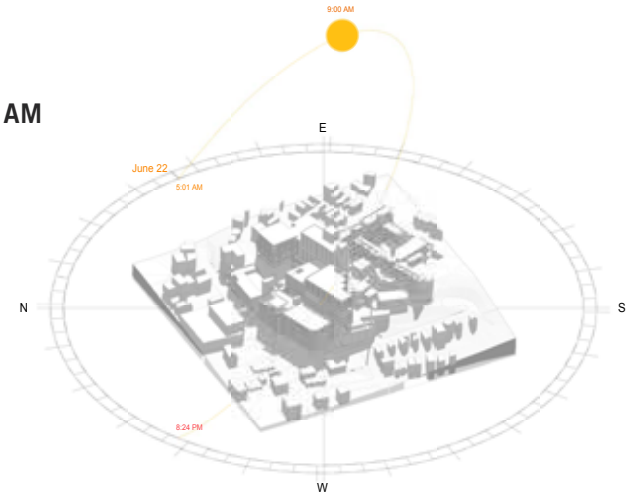

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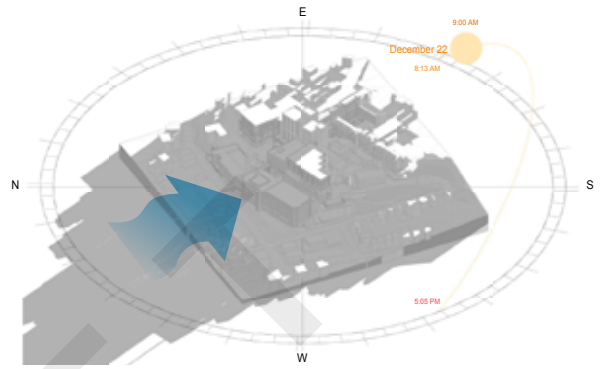

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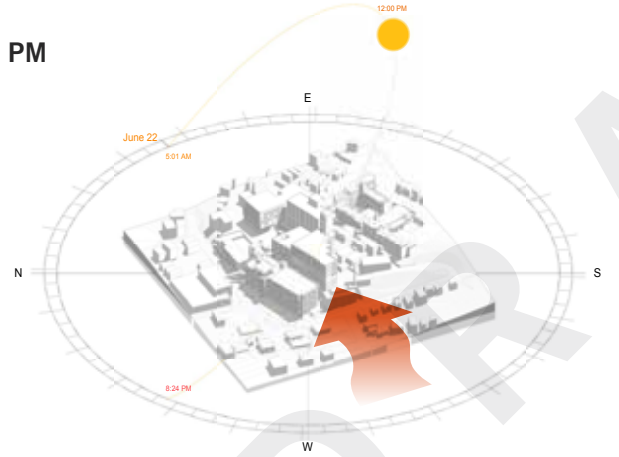

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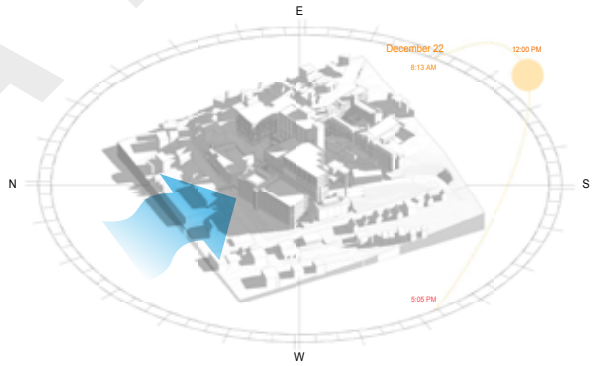

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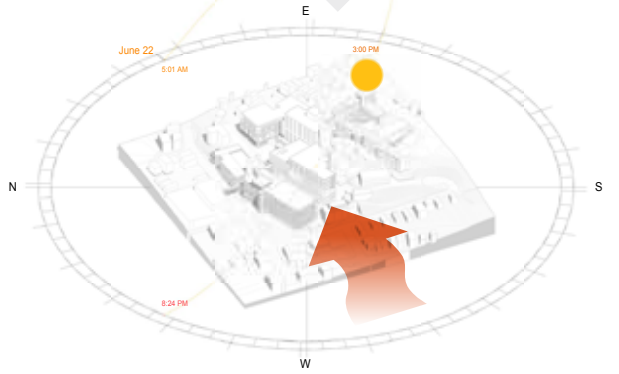

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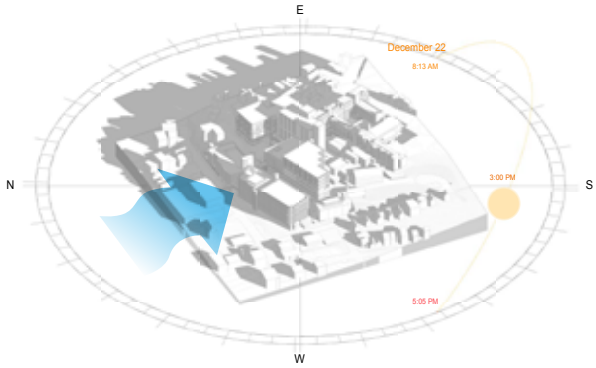

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Building on the Western Promenade

MMC's IDP embraces the historic Western Promenade as valuable open space amenity for campus users as well as the broader community. The landscape framework is built on the basic idea that access to views, natural light and nature create a positive patient and visitor experience that supports healing. Landscape plays a key role in MMC's Development Plan: in a strategic move that extends the experience of the Western Promenade into the campus, a series of landscapes are introduced along the revised main circulation route to provide views, and where possible, physical access to landscape for the benefit of all campus users (see **Fig.6.2** on page 92).

NEIGHBORHOOD TRANSITION

The design goal is to create a campus that belongs in Maine and engages with the surrounding community. Maine's natural environment is an important source of inspiration for the campus design and the landscape design intends to incorporate the different Maine landscape typologies (from tundra plateau to coastal outcrops). The future campus will be designed to create a seamless transition between the bucolic character of Western Promenade and the urban condition along Congress Street. With the addition of the new buildings, the campus extends its reach down from the top of the hill to engage with the community along Congress Street.

While a holistic design approach gives coherence to the overall campus, the site plan design will pay special attention to the neighborhood context.

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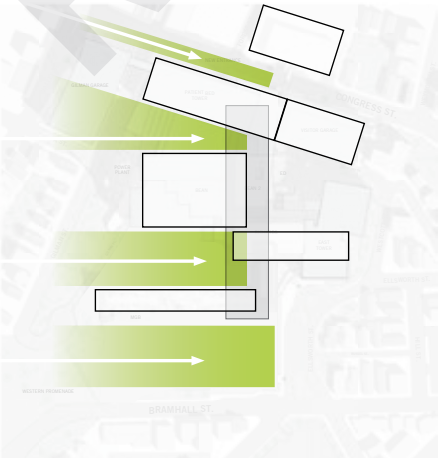
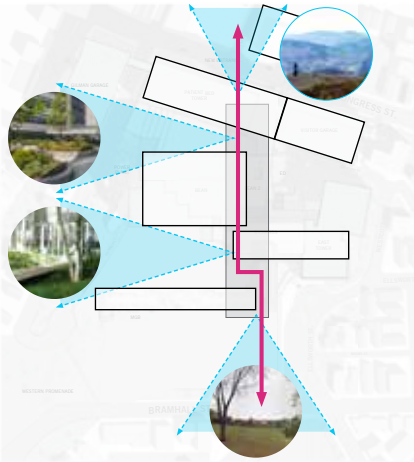


Pulling Western Promenade into the campus with a series of landscape spaces at different levels



Clear wayfinding with views out to nature

Fig.6.2 Landscape Design Framework inspired by the Western Promenade

Congress Street

This area has an urban and active character, which MMC's Development Plan intends to strengthen.

Transparency of large portions of the building facades along Congress Street at the pedestrian level will activate the streetscape 24/7. Active inside and outside uses, such as a café area and waiting area, are on the lower levels. The articulation on the bed floor elevation helps bringing down the building scale. The building mass of the clinical block and the new Gilman Garage* is set back providing a generous public landscape area along the sidewalk enhancing the pedestrian and vehicular experience.

Valley Street

Valley Street defines the western edge of campus. This active vehicular road transitions from a residential area to Congress Street, which is a commercial Street.

The Gilman Garage* massing is set back along Valley Street to give room to a new green area. The landscape design creates a buffer zone between the building mass and the pedestrian sidewalk. The presence of the exposed circulation that ties this garage structure back to the new lobby will make the streetscape safer and create an active backdrop at the intersection of Valley Street with Congress Street.

East Upper Campus

This campus area is adjacent to a residential neighborhood and brick is the predominant material on the campus buildings.

The East Tower addition fits and blends within its immediate campus context. The use of brick as the main material reinforces the existing character of this part of campus. The goal is to preserve the current relationship between the existing campus and the neighboring buildings.

Upper Campus

This part of campus benefits from the presence of the Western Promenade and includes the original Maine General building. The IDP does not propose any changes for this section of the campus.

*Note: Alternative employee parking solutions are currently being investigated.

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CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

MMC aims to create a healthy and safe environment for the surrounding community. MMC plays an active role to enhance the safety within the adjacent neighborhoods. MMC's Development Plan incorporates the Crime Prevention Through Environmental Design (CPTED) principles. These principles are implemented through the following design strategies:

- Design clarity and an aesthetically pleasing environment, will improve pedestrian experience for users, neighbors and passers-by.
- Clear and properly-sized signs located in strategic locations will provide safe wayfinding.
- The circulation paths from parking areas to the main building entrance are secured, conditioned and well-lit with clear sight lines.
- The ground floor of the new buildings are designed to avoid entrapment areas. By creating a continuous elevation without recesses, the design minimizes potential hideouts.
- The large number of people walking through the transparent bridge that connects the Gilman Garage* with the clinical block will provide natural surveillance of less visible areas such as Gilman Street.
- The use of vandal resistant materials and proper maintenance of the green open spaces will create territorial reinforcement, discouraging vandalism as well as misuse of the streetscape.

*Note: Alternative employee parking solutions are currently being investigated.

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PUBLIC REALM PLAN

A conceptual public realm plan for the proposed short-term development is shown below.

Fig.6.3 Public Realm Improvements along Congress and Valley Streets

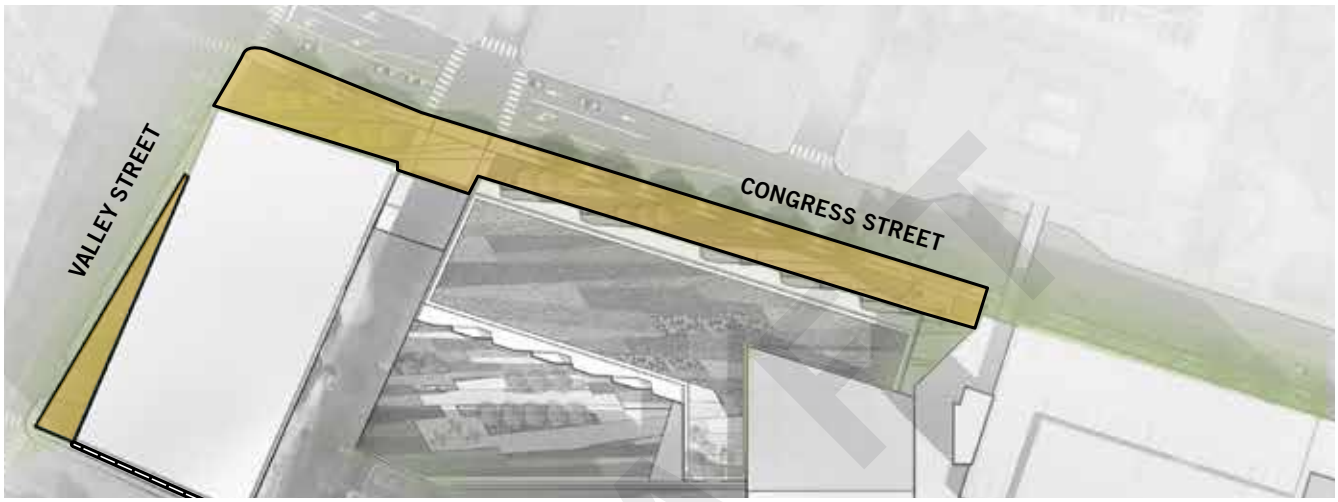
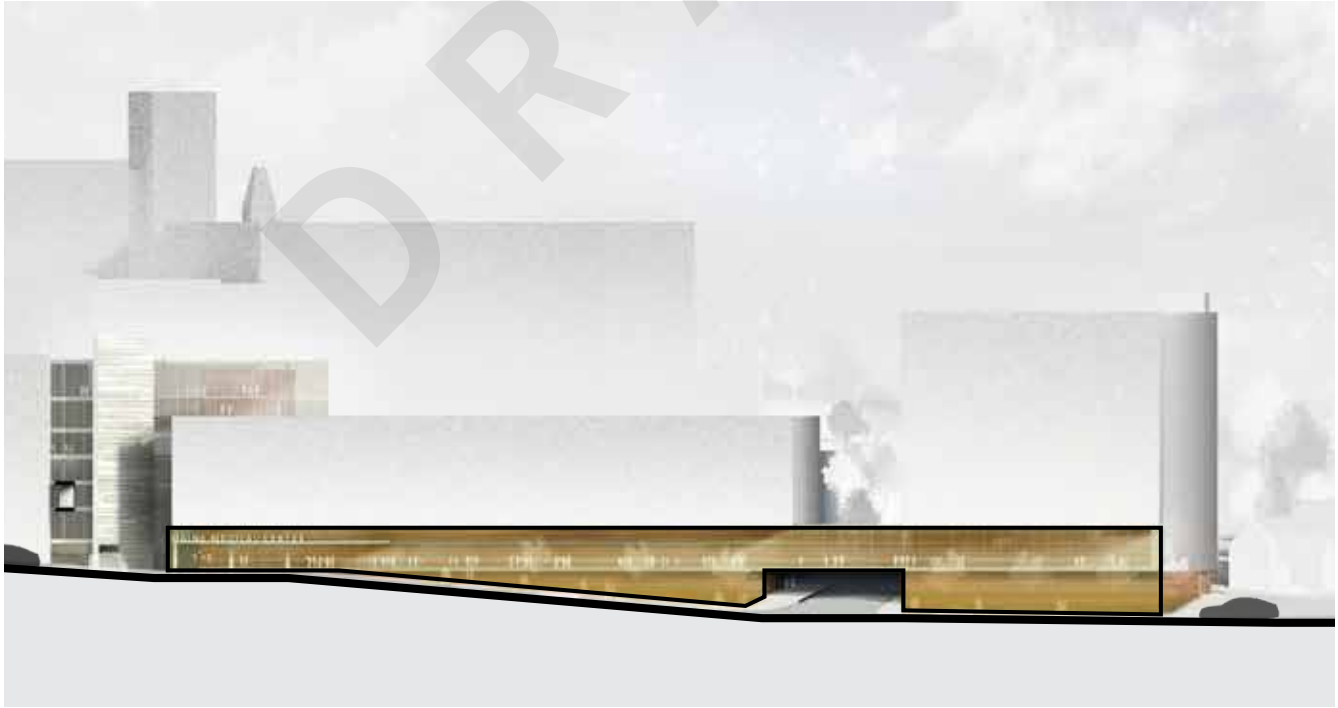


Fig.6.4 Pedestrian Concourse and Congress Street Landscape



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NEIGHBORHOOD ENGAGEMENT

Maine Medical Center strives to be a good neighbor to surrounding communities. Ongoing dialogue and exchange of information and ideas is a core tenant of MMC's neighborhood engagement plan.

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ONGOING COMMUNITY ENGAGEMENT

It is important for MMC and its neighbors to maintain the dialogue that has been established during the development of MMC's IDP. As a result, MMC proposes the following ongoing community engagement to ensure community members are informed throughout the MMC build out period and beyond:

- For the purposes of keeping the surrounding residential areas apprised of its future development plans, and to address any neighborhood issues related to the operations of the MMC campus, no less than quarterly, MMC shall invite representatives of the adjacent neighborhood associations to meet with designated MMC representatives. MMC will engage neighbors in more routine dialogue during major planning efforts. These meeting invitation shall also be extended to the Director of Planning at the City of Portland. Minutes of such meeting shall be taken.
- MMC shall host at least two neighborhood meetings during the development of future IDPs in compliance with IOZ requirements.
- During construction, MMC will designate MMC shall provide contact information for a designated community liaison on its website for day-to-day inquiries and complaints.
- MMC shall also employ social media to make information about any pending project readily available to the public. This shall include a dedicated website page and a dedicated email address for residents to ask questions, provide suggestions or voice concerns.
- Finally, MMC will set up a text alert system to notify any subscriber of advance construction impacts which may be necessary during construction (for example, road closure, large truck delivery etc.)

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CONSTRUCTION MANAGEMENT PRINCIPLES

The following section provides an overview of the construction management principles that MMC has identified to minimize impacts from noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding buildings and communities. It is MMC's full intent to schedule and conduct operations in a manner that will minimize, to the extent feasible, the disturbance to the public in areas adjacent to the work and to occupants of buildings in the vicinity.

Communication Initiatives

MMC appreciates the importance of keeping its neighbors up to date on planned construction activities that may impact them. To that end MMC will implement a communication strategy using social media and texting to alert surrounding neighbors of activities that may cause disruption.

MMC has created a dedicated webpage on its website devoted to the MFP Project to inform the public of important information related to the Project. (http://www.mmc.org/modernization) Information and updates on the Project are regularly posted including project updates, neighborhood meeting minutes, Portland Planning Board information related to the project, news releases, fact sheets and frequently asked questions. As construction commences, important alerts regarding construction activity such as activities impacting roadways, potential creation of dust, vibration, or noise, etc. will also be posted. To the extent possible, MMC will provide two week advance notice of such activities.

MMC has created a dedicated email address which allows for members of the public to ask questions and provide information directly to the Construction Team. These emails will be answered in a timely fashion by the people directly involved in the construction activities.

MMC has created a dedicated email address which allows for members of the public to ask questions and provide information directly to the Construction Team. These emails will be answered in a timely fashion by the people directly involved in the construction activities.

Construction Schedule

The construction period for the project is expected to be approximately 54 months in duration. It is anticipated that the project is estimated to start on or about January, 2018 and last through June, 2022. Estimated dates for the project phases identified as follows:

- East Tower: Dec 2017-Oct 2019
  (Helipad Occupancy: July 2019)
- New Garage (location TBD):
  Oct 2017-June 2019
- Visitor Garage Expansion: Jun-Oct 2018
- Removal of Employee Garage: June-Dec 2019
- Congress Street Clinical Building:
  Jan 2020-July 2022

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Schedules are subject to change based on site conditions and other considerations.

Construction Management Plan

Prior to construction, MMC will develop comprehensive Logistics and Safety Programs. Maintaining normal campus operations and public safety, and minimizing impacts to areas surrounding the campus will be the primary considerations in this process.

Project Work Hours

Construction will occur during the daytime hours as defined by the Portland Noise Regulation (7am to 6pm, Monday through Friday). In some unavoidable instances, weekday night hours could extend to beyond 6pm when a second shift is employed. Weekend work hours will be 7AM to 4PM on the Saturdays and Sundays when required.

Perimeter Protection/Public Safety

In general, secured fencing will be used to isolate construction areas from pedestrian traffic and Police Details will be provided, when necessary, to facilitate traffic flow. MMC will work to ensure the sidewalk protection minimizes impact to pedestrian and vehicular flow. The specific configuration of sidewalk protection and pedestrian access around the site will vary depending on the phase of the work being performed. Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities. MMC will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed.

Construction Noise Impacts

The project will require the use of equipment that can be heard from off -site locations. MMC is committed to mitigating construction noise impacts. Increased community sound levels, however, are an inherent consequence of construction activities. When these events are scheduled, advance notice will be provided.

Construction Traffic and Parking Impacts

Construction Workers

The number of workers required during the construction will vary with an estimated average daily workforce of 150 during the peak of construction. Jobsite personnel shall park at an offsite parking area and will be shuttled to the construction site. MMC will work with the Construction Management Company to identify an off-site parking location and shuttle service. No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets. The construction company and its subcontractors shall encourage the use of public transportation by their workers, if available.

Truck Routes and Volumes

Truck traffic will vary throughout the construction period, depending on the activity. It is expected that

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truck traffic will average 8-10 trucks daily spread evenly throughout the day. An off-site marshalling area will be utilized for trucking.

MMC will install way finding signage at strategic locations identifying no travel zones for construction vehicles. To the extent possible, all truck traffic will be directed to enter the sites utilizing Congress Street. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queueing on Congress Street or Gilman Street, unless during specific times as addressed on the site logistics plans.

Construction Air Quality Impacts

To reduce emission of fugitive dust and minimize impacts on the local environment, MMC will adhere to a number of strictly enforced mitigation measures. These include the use of wetting agents to control and suppress dust; covering stock piles of soils and trucks transporting debris; managing construction practices to reduce unnecessary transfers of loose materials; periodic cleaning of streets and sidewalks; and, use of wheel wash stations.

Fig.7.1 Screenshot of MMC Website dedicated to the Project

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MMC COMMUNITY BENEFITS

MMC provides much to the City of Portland community, which often goes overlooked. These benefits are not only to our adjacent neighbors but also to the residents elsewhere in the City.

Smoking Policy and Related Initiatives

MMC, as a health care institution, understands that smoking is an addiction that has harmful effects—effects from directly inhaling nicotine, as well as the effects of second hand smoke. The effects are serious and can be life threatening. In order to advance its vision to make the people in Maine the healthiest in America, MMC, like other businesses in the City of Portland—including the City itself—has instituted a no smoking policy on its premises.

But the hospital also recognizes that addiction is difficult to overcome and the ability to quit smoking is often difficult. That is why MMC offers assistance to its employees, patients and visitors to quit smoking and to reduce and eliminate noxious fumes in the environment. MMC provides free smoking cessation classes to its employees. It offers free nicotine gum to visitors to the hospital in an effort to reduce the desire to smoke. MMC conducts periodic "walk-abouts" in the neighborhood to talk with people about smoking and its health impacts.

Neighborhoods throughout the City all deal with unwanted smoke. MMC has heard the concerns of its neighbors relating to people walking on the public sidewalks in their neighborhoods while smoking. Whether or not people smoking in MMC's adjacent neighborhoods are affiliated with the Hospital, MMC has taken significant measures to respond in a positive fashion to these concerns. In addition to the proactive walk-abouts providing education about smoking and resources to assist in quitting (such as providing the hotline telephone number for the Center for Tobacco Independence), the Hospital has taken steps to alleviate the unsightliness of cigarette butts on public streets near its campus. As documented in its MMC Neighborhood Council Meeting minutes of June 23, 2016, MMC has purchased 30 "butt butlers" for use by the City in areas around the MMC main campus. In 2016 MMC and the neighbors collaboratively walked the neighborhood and identified areas for installation of the butt butlers.

At the request of the neighborhood representatives, MMC also modified its smoking policy as follows:

- Limits the distance from entrances within which individuals can smoke from 50 feet to 20 feet;
- Remove MMC Tobacco Free signs installed along the perimeter of the open "South Lot" (Bramhall, Chadwick, Vaughan, and Brackett Streets).
- Letter to employees sent by the MMC CEO and COO regarding these changes and the expectations for employees to abide by them
- MMC has hired, at its expense, a trash removal vendor to collect cigarette butts and trash in the areas surrounding the

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hospital. This vendor provides such service between April 1 and first snow, on M, W, and F at 4–6 hours per day.

- MMC has a telephone line dedicated to the receipt of concerns from neighbors regarding MMC related events in their neighborhoods

While MMC recognizes that it cannot prevent people from smoking, it is committed to ongoing efforts to address this public health issue.

Neighborhood Garden

The St. John Valley Neighborhood requested the use of property owned by MMC at 268-270 Valley Street. In an effort to respond to the neighbors, MMC contacted the City for guidance on how it permitted use of public property for such community gardens. MMC fashioned an agreement with SJVNA which mimicked the Agreement used by the City for use of its land by gardening neighbors. As of June 2016 SJVNA was looking into procuring insurance of the same type required by the City.

Neighborhood Clean Up Days

MMC has sponsored neighborhood clean-up days in the past in an effort to partner which its adjacent Neighborhood Associations to beautify the neighborhood. It has supplied lunch, trash bags, gloves and water for those participating.

Snow Ban Parking

MMC allows its neighbors the use of its parking garage at 887 Congress Street on those days when the City calls a snow ban. Although there have been glitches of this policy by MMC in the past, as well as abuses of this policy by neighbors leaving cars parked long-term in the past, for the most part the locations of vehicle parking and the hours for such parking have been respected and appreciated by the neighbors.

City-Wide Benefits

MMC is actively involved in giving back to the City of Portland. The following initiatives provide some examples of the actions undertaken by MMC to give back to the community.

- MMC-Preble Street Learning Collaborative: MMC nurse practitioners, primary care residents, medical students, and MMC Homeless Health Partners, provide services to the most vulnerable underserved people in Portland, allowing them access to quality, barrier-free health care.

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City-Wide Benefits, *continued*

- Portland School Based Health Clinics are made possible through a partnership between Maine Medical Center and Portland Public Health.
- Portland School Athletic Contributions: The Sports Medicine division at MMC's Family Medicine Center provides physical exams and training room support for area school teams, marathons and other sports events.
- MMC RN Health Fairs: MMC RN's routinely hold community health fairs on MMC's time to benefit vulnerable populations. Locations of health fairs include: the Preble Street Teen Center, Boys and Girl's Club of Portland, and the Florence House, a permanent shelter for chronically homeless women. The events are frequently accompanied by a collection of supplies.
- Sagamore Village Health Center: MMC provides staff and support at the Sagamore Health Resource Center, a community-based nurse managed clinic that provides public health, primary care and mental health services to residents. MMC provides the services and support in collaboration with the USM School of Nursing and Portland Housing Authority. In addition to staff and administrative support, MMC provides direct financial support to the Health Clinic.
- MMC Care Partners: A "safety net" program designed to provide care for those who cannot afford commercial insurance but are not eligible for government programs. CarePartners provides administrative support to help serve the target population, including comprehensive eligibility assessment, care management, and access to low cost or free pharmaceuticals.
- Virology Treatment Center: A resource to patients and physicians caring for patients with HIV/AIDS; it also provides education and conducts clinical trials, including many that otherwise would not be available in the community.
- International Clinic: Provides services and healthcare education to immigrants and refugees from around the world who have settled in Portland.
- Northern New England Poison Center: MMC is the home of the NNEPC. The NNEPC provides a 24 x 7 hotline and chat service to provide 24 x 7 consultation with healthcare professionals and the public regarding accidental pediatric or geriatric poisonings, therapeutic errors and adverse

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effects/interactions, management of drug- or poison-related suicide attempts and substance abuse misadventures, environmental exposure, food poisoning and other toxic exposures. The Center also provides education for the public and healthcare professionals, including school nurses and law enforcement, assists with preparedness and toxic-surveillance for events including food or water contamination/tampering, weapons of mass destruction, regional antidote management, and infectious disease.

- Sexual Assault Response Services of Maine (SARSSM): MMC, through its Emergency Department, teaches classes to support SARSSM. Emergency department members present at meetings and conferences in support of these services.

- The Maine Medical Center Research Institute (MMCRI) is the largest hospital-based biomedical research facility in northern New England. Many clinicians author scholarly work or participate in various studies and research activities, and the institute offers a summer student program. Residents and community members participate in clinical trials to manage and treat diseases and medical conditions, which would otherwise not be available in the community.

- MMC Classroom Facilities at the MMC Dana Center are used by health care mission focused community groups for meetings and educational sessions. Local Chapters of Alcoholics Anonymous, Al-Anon, the National Alliance for the Mentally Ill and Take Off the Pounds Sensibly meet weekly at the Dana Center. HOPE Support Group, Making Strides against Breast Cancer, an Autism Parent Support Group, and Survivors of Suicide are some of the organizations that make use of MMC's facilities on a weekly basis throughout the year.

- MMC's Certified Nursing Assistant (CNA) Program: In affiliation with Portland Adult Education this program has graduated approximately 1,200 graduates to date. Offered 3 times a year at no charge to students, this state-approved 180-hour course incorporates experienced MMC nursing staff as faculty/mentors within classroom presentations, skills labs, and supervised clinical experiences. Clinical nurses and others throughout MMC instruct and mentor these student team members, highlighting MMC's belief in CNAs as integral to the comfort, care, and outcomes of our patients and services. An average of 75 participants attend per session. Near the end of this eleven-week program, students take the

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City-Wide Benefits, *continued*

state certification examination during the course at no cost to the student.

- Medical Explorers: Provides opportunity for High School students to experience a combination of lecture, experiential learning, and hand-on skills practice. MMC also offers summer internships and opportunities through the school year for High School students to meet, observe and interact with many disciplines in the medical profession.

- Doc for a Day: MMC provides students, chosen from underrepresented minority groups or educationally or economically disadvantaged backgrounds, an overview of what is involved in becoming a physician, and participate in hands on clinical activities in the simulation lab.

- Disaster Preparedness and Emergency Services: MMC is deeply involved in disaster planning at the local and State levels. It is one of three state Regional Resource Centers for Emergency Preparedness, and the hospital has a full-time Director of Emergency preparedness. Additionally, MMC is a member Southern Maine Regional Resource Center for Health Emergency Preparedness, which coordinates all Emergency Preparedness Activities of the Southern 4 Counties of Maine including: York, Cumberland, Sagadahoc and Lincoln. These Public Healthcare Emergency services include services and support to other local Hospitals and Medical Centers, Laboratories, Clinics and Ambulatory Centers, Assisted Living and Long Term Care Facilities and Home Health Agencies in the greater Portland Community.

- Financial Support to Community Agencies: MMC supports financially and provides in kind services to various community agencies and sponsors events throughout the City, including the Heart Walk; American Cancer Society walk, Hospice of Southern Maine, Let's Go Program, Ronald McDonald House, March of Dimes and National Multiple Sclerosis Society. MMC and its employees participate in the United Way, which donations benefit numerous local agencies.

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Fig.7.2 Photographs from Community Benefit Events Supported by MMC

The Annual Maine Children's Cancer Program (MCCP) Walk

Tobacco Cessation Program

Park Clean-Up

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Maine Medical Center
MaineHealth

Institutional Overlay Zone (IOZ) Regulatory Framework

INTERNAL DRAFT FOR REVIEW BY MMC / March 20, 2017

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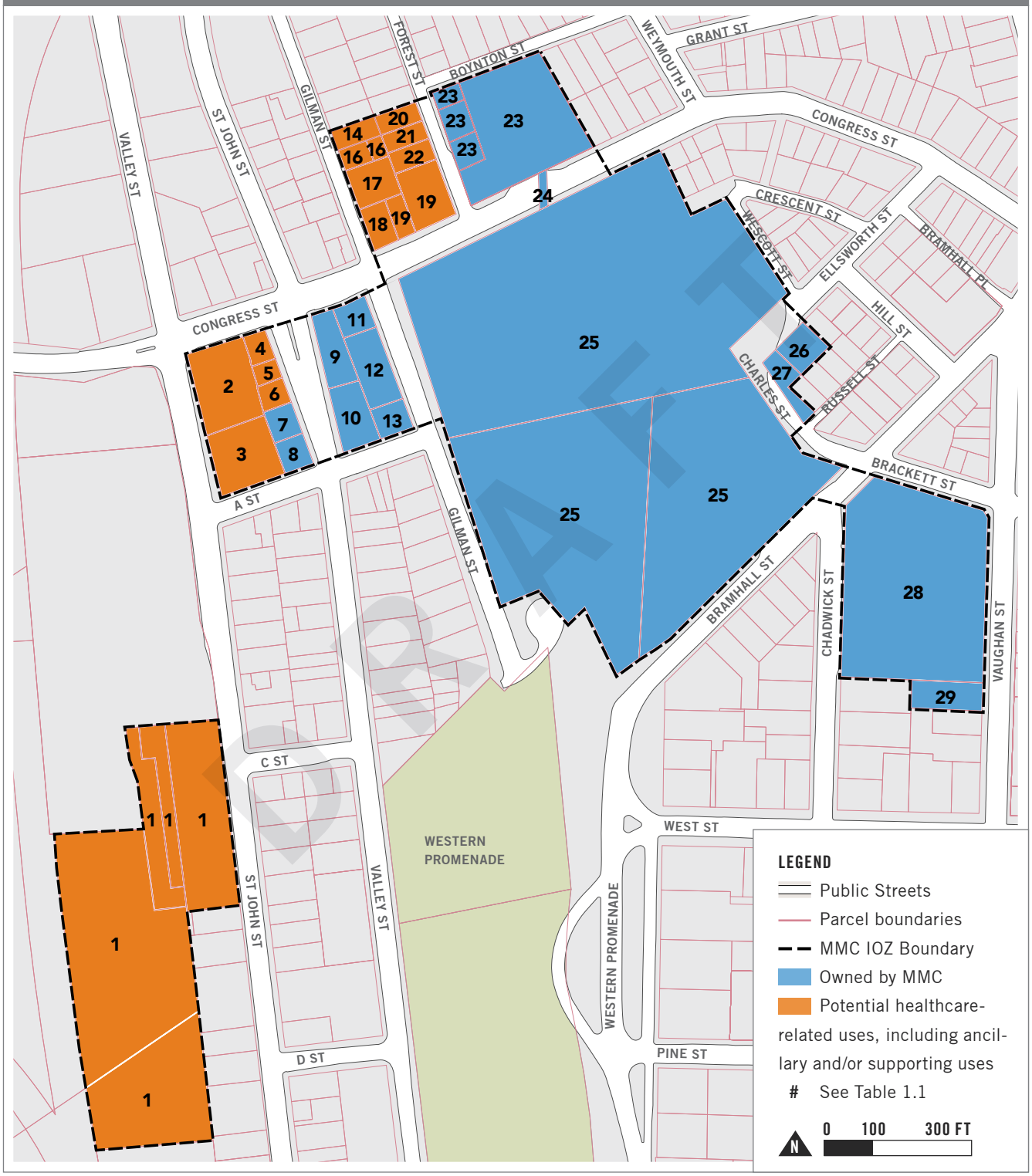
1. BOUNDARY

MAP 1.1 Maine Medical Center IOZ Boundary



1. BOUNDARY

TABLE 1.1 List of Properties Included in the Maine Medical Center IOZ

Map#	Legal Description	Address	Acreage	MMC Title?
1	64-A-2-8-9-11 74-A-7 / 75-A-6	222 St John St	4.6516	No
2	65-G-1	950 Congress St	0.4628	No
3	64-B-1	275 St John St	0.4163	No
4	65-G-2	942 Congress St	0.0659	No
5	65-G-3	940 Congress St	0.0482	No
6	65-G-4	274 Valley St	0.0667	No
7	65-G-5	268-70 Valley St	0.0978	Yes
8	64-B-2	264 Valley St	0.0895	Yes
9	65-H-1	932 Congress St	0.1864	Yes
10	65-H-9	261 Valley St	0.2185	Yes
11	65-H-2	930 Congress St	0.1040	Yes
12	65-H-5	52 Gilman St	0.2384	Yes
13	65-H-8	44 Gilman St	0.1128	Yes
14	65-E-18	93 Gilman St	0.0826	No
15	65-E-22	85 Gilman St	0.0565	No
16	65-E-32	85 Gilman St	0.0282	No
17	65-E-24	81 Gilman St	0.1653	No
18	65-E-28	919 Congress St	0.1059	No
19	65-E-29-30	909 Congress St	0.3233	No
20	65-E-21	18 Forest St	0.0831	No
21	65-E-23	14 Forest St	0.0826	No
22	65-E-25	12 Forest St	0.0883	No
23	53-I-1-2-3-12	887 Congress St	1.3400	Yes
24	53-X-1	Congress St Air Rights and Pedestrian Walkway	---	Yes
25	53-D-7 54-H-1 64-C-1	22 Bramhall St	12.563	Yes
26	54-C-6	34 Ellsworth St	0.1341	Yes
27	54-C-10	40 Ellsworth St	0.1155	Yes
28	54-I-1	308 Brackett St	2.5200	Yes
29	63-B-8	214 Vaughan St	0.1983	Yes

Notes: Properties owned by MMC are listed under Maine Medical Center or MMC Realty Corp.

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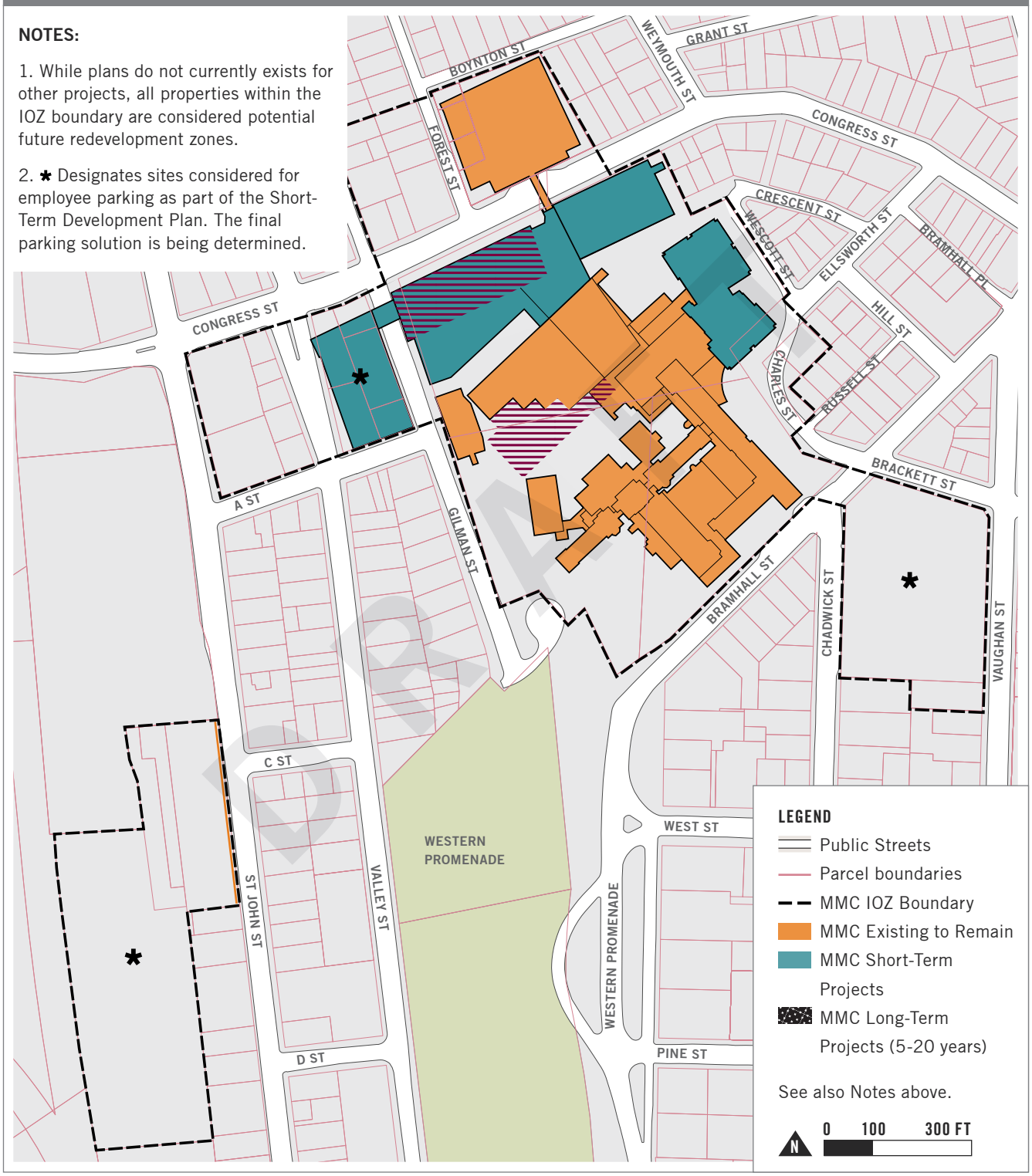
2. PHASING AND SCHEDULES

MAP 2.1 Maine Medical Center Development Phasing Plan



2. PHASING AND SCHEDULES

TABLE 2.1 Thresholds for Plan Amendments

Plan Name	Threshold for Update
Maine Medical Center Institutional Development Plan (IDP)	Every ten (10) years, or, prior to development projected to increase total facility holdings by more than 800,000 GSF of healthcare uses, not including parking.
Maine Medical Center Transportation Demand Management (TDM) Plan	Every five (5) years. Monitoring reports to be provided every 5 years upon request by the City.

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3. USES

TABLE 3.1 List of Uses Permitted by Right within the IOZ	
Healthcare facilities including but not limited to the following ancillary and/or supporting uses:	
• Hospital • Medical Office / Clinic • Laboratory Center / Services • Research and Development Laboratory or Facility • Educational Facility / Conference Center • Administrative / Business Office • Accessory Service or Trade Uses • Guest House • Medical Resident Apartments • Rehab / Skilled Nursing Facility	• Retail Facility • Restaurant / Cafe • Employee Service Amenities • Day Care Center (Child / Adult) • Fitness Center or Gymnasium • Parking Lot • Parking Garage • Bicycle Storage • Heliport • Antenna Station

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4. DIMENSIONAL REQUIREMENTS

TABLE 4.1 Dimensional Requirements	
Building Heights (max.)	See Map 4.1. for maximum building heights.
Floor-Area-Ratio (max.)	None
Building Setbacks (min.)	See Map 4.3 for minimum building setbacks.
Congress Street Build-to-Zone*	A Build-to-Zone is identified for properties that abut Congress Street. The Congress Street Build-to-Zone extends between 0 to 40 feet from the right-of-way boundary. Buildings located in these parcels must have a minimum of 70% of the façade facing Congress Street located anywhere within the build-to-zone.
Transition Zones	Transition zones are identified inside the IOZ boundary in areas where the IOZ abuts or is located across a public right-of-way from a residential use district or a historic-designated district. See Map 4.2. for location of transition zones. i. Transition zones that abut a Residential District with an intervening public right-of-way that is not an alley shall have a height limit that matches the maximum height across in the Residential District. ii. Buildings located in transition zones that abut a Historic District may be subject to review by the Historic Preservation Board per the City of Portland zoning ordinance. iii. In areas where the IOZ abuts a Residential or Historic District without an intervening public right of way or an alley, minimum side and rear yard requirements of the abutting Residential or Historic District apply within the IOZ boundary.

*A "build-to zone" is the area on the lot where all or a portion of the street-facing building facade must be located, measured as a minimum and maximum yard (setback) range from the public right-of-way boundary.

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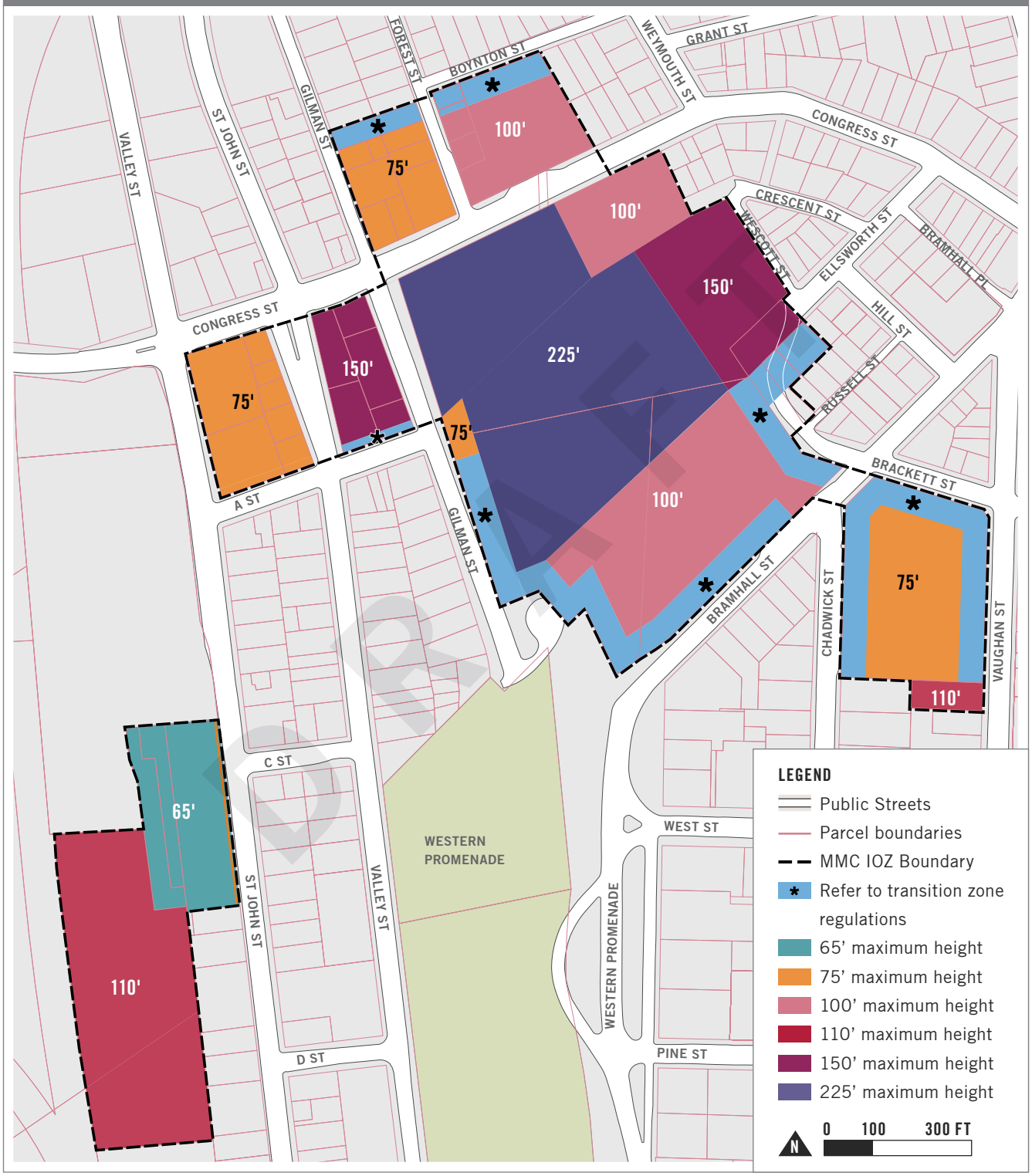
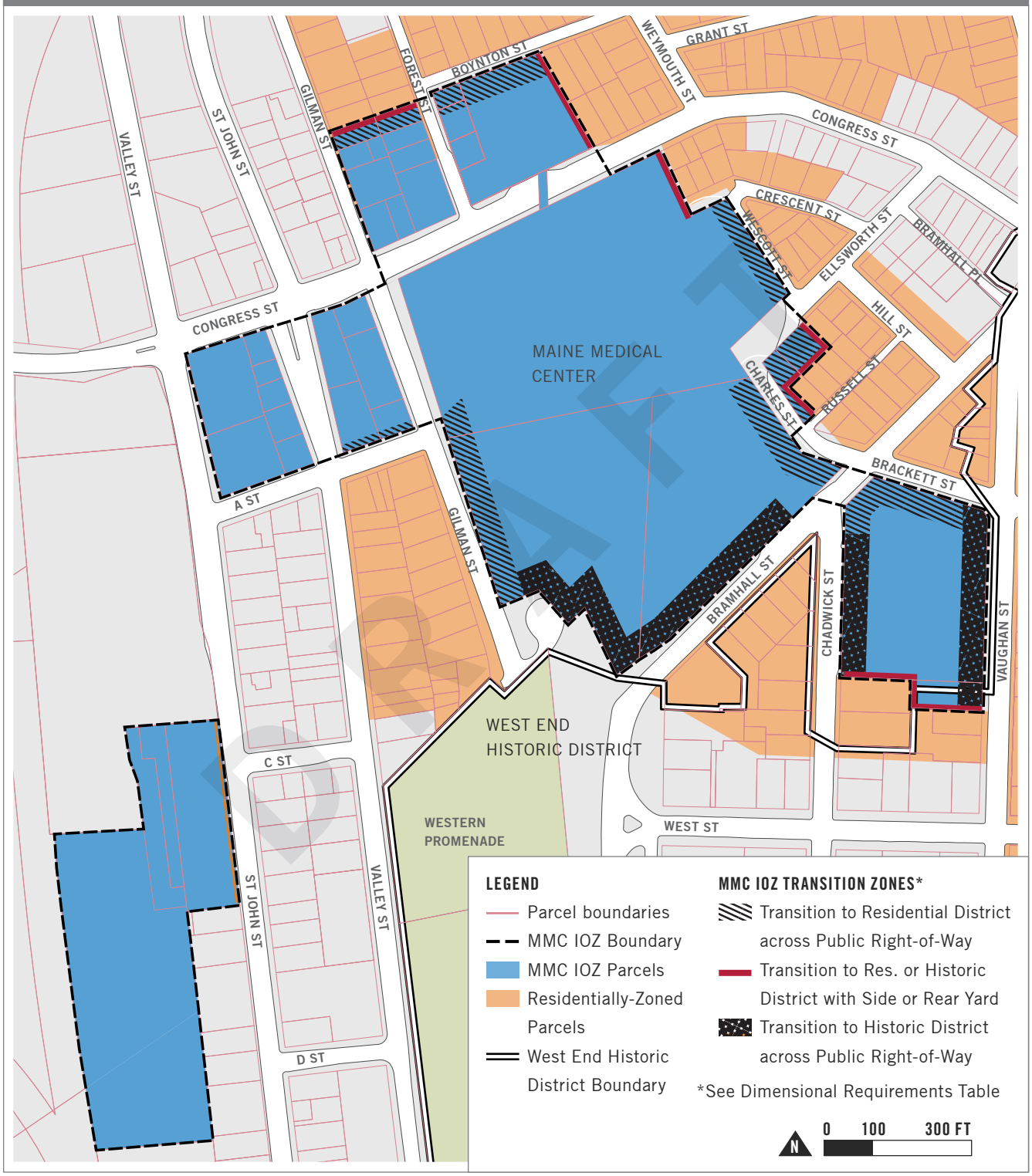
4. DIMENSIONAL REQUIREMENTS

MAP 4.1 Building Heights Map



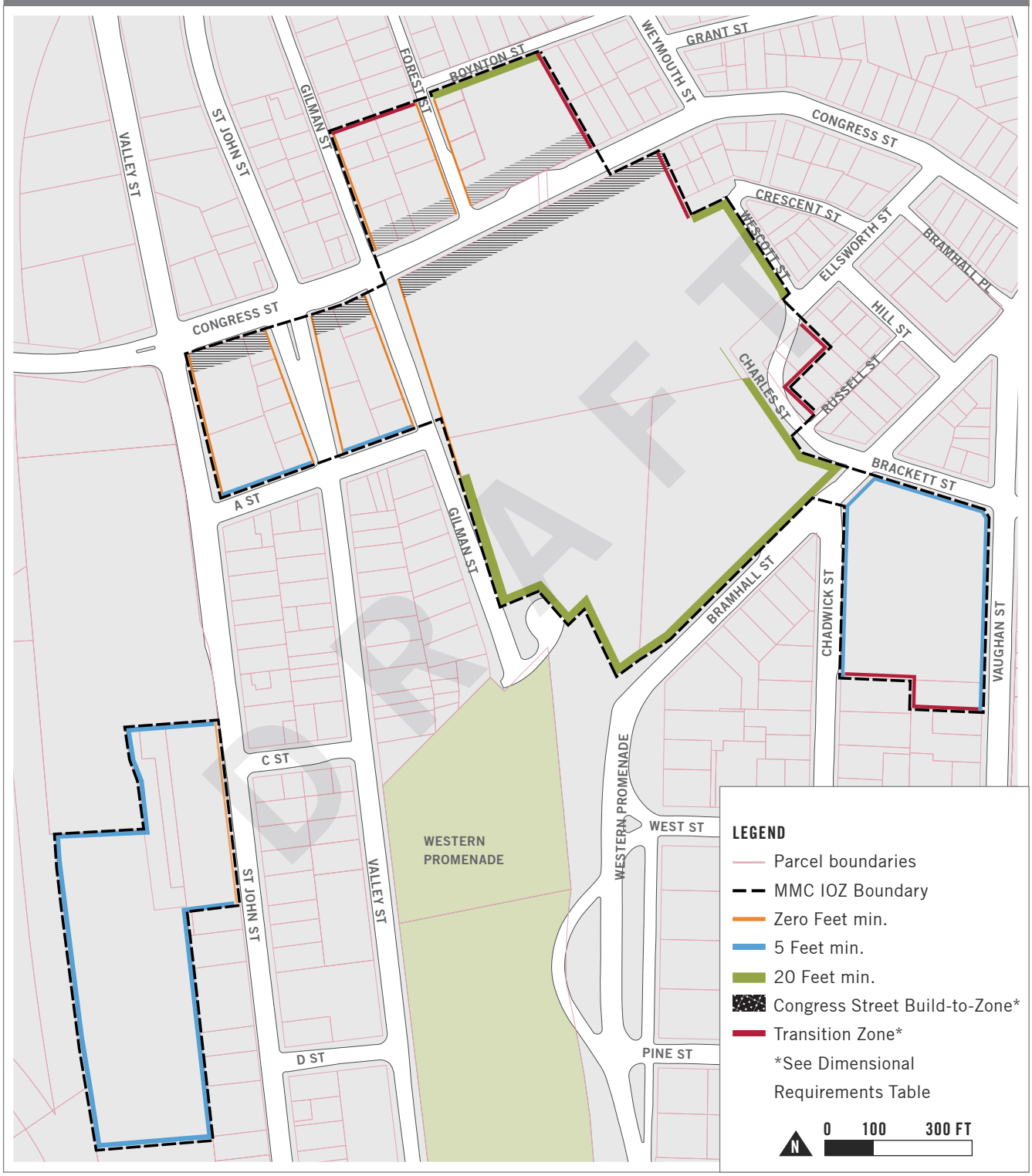
4. DIMENSIONAL REQUIREMENTS

MAP 4.2 Map of Transition Zones



4. DIMENSIONAL REQUIREMENTS

MAP 4.3 Map of Minimum Setbacks



5. TRANSPORTATION

A. Maine Medical Center shall comply with City of Portland Site Plan Standards for ensuring pedestrian, vehicular, bicycle and transit access and safety.

   i. Sidewalk Material: In order to maintain the safety of patients and visitors to/from the hospital, MMC need not comply with the City's brick sidewalk policy but may use alternative material substantially similar to that used along the sidewalks abutting the Bramhall Street entrance.

B. Maine Medical Center shall endeavor to meet a TDM trip reduction target of 65 by year 2020.

C. Maine Medical Center shall meet thresholds for access improvement upon the issuance of a Traffic Movement Permit.

D. Maine Medical Center shall provide no less than 915 parking spaces for patients and visitors and no less than 2325 parking spaces for employees. Parking requirements shall be revised with every TDM update.

6. SITE PLAN REVIEW

The following elements shall be considered by the Planning Board at Level III Site plan review:

- Building envelope design
- Landscape and public realm design
- Vehicular circulation and safety
- Pedestrian and bicycle safety measures
- Mitigation measures for development impact
- Construction management approach

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7. OTHER REQUIREMENTS

A. Helipad Permitted Use and Specifications

The Helicopter Landing Pad shall not be subject to the provisions of section 14-409 (Heliports), but shall be governed by the provisions of the Helistop Overlay Zone (Sections 14-325 through 14-327), except as follows:

i. Setbacks. Because it is to be located on the roof of an existing structure, the landing pad shall not be required to meet the setback requirements of Section 14-327(3) or the fencing requirements of Section 14-327(4).

ii. Flight Routes. MMC shall identify preferred flight routes, to be approved by the CITY, designed to minimize noise impact of helicopter flights on surrounding residential areas, shall notify all flight providers likely to use the Helicopter Landing Pad of such preferred routes, and shall take the following measures to ensure that such preferred routes are utilized whenever weather conditions, safety considerations and the best interests of the patient being transported permit, with the expectation that this will be the usual case. MMC will instruct all providers which regularly use the Helicopter Landing Pad that pilots must file an exception report with the Air Medical Provider Administration of Lifeflight of Maine or its successor entity for operations modified for safety considerations or at the direct request of Approach Control at the Portland International Jetport. Logs of these exception reports will be made available to MMC and to the City upon request but no more frequently than annually. When and if the Portland Jetport has the capacity to maintain and preserve data which specifically identifies flight routes actually taken by aircraft utilizing the Helicopter Landing Pad, the City shall consult such data to review compliance with this paragraph, and MMC, upon request of the City, shall be responsible for the cost of translating this data into usable form but not for the costs of the flight monitoring.

Initially, such preferred flight routes shall be as shown on the flight map (see **Map 7.1**). At the initiative of either the City or MMC, the map of preferred flight routes may be amended from time to time by agreement between MMC and the City.

MMC will continue to engage providers of helicopter emergency medical transport who operate in compliance with the "Fly Neighborly Guide," third edition, (and any subsequent revisions) prepared by the Helicopter Association International Fly Neighborly Committee and published by the Helicopter Association International.

Helicopter landings on the Helipad shall be used for emergency patient care only, and on the rare occasion for emergency management training by federal or state management agencies or U.S. military or government aircraft.

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7. OTHER REQUIREMENTS

MAP 7.1 MMC Helicopter Flight Path

7. OTHER REQUIREMENTS

B. City Snow Ban Parking

MMC recognizes that City snow ban parking locations in the vicinity of MMC is limited. MMC also recognizes the need to prioritize its parking for patients, visitors and staff. However, during winter months when the City of Portland implements citywide parking bans for snow plowing and or snow removal, MMC will offer to its neighbors the ability to park in a designated area of the Forest Street garage for so long as such spaces are not needed to service MMC and according to the following requirements:

Hours: Due to the patterns of patient flow in the hospital, the hours that we are able to offer community parking during the announced City of Portland Snow Parking Bans is strictly limited to 6:00pm until 6:00am. On Saturdays and Sundays, the morning deadline is 8:00am.

Note: Vehicles that are not moved out of this Lot prior the applicable time each morning will be towed, without notice, and at the owner's expense.

C. Signage

MMC shall abide by the requirements of sections 14-366 through 14-372.5 of the Portland Land Use Code, except as otherwise approved by the Portland Planning Board under Chapter 14, Article V.

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PERKINS+WILL

PLANNING BOARD REPORT
PORTLAND, MAINE

58 Fore Street
Traffic Movement Permit
Project #: 2016-224
CPB2

Submitted to: Portland Planning Board Public Hearing Date: April 25, 2017 CBLs: 018 A001, 018 A002, 018 A003	Prepared by: Christine Grimando, Senior Planner Date: April 20, 2017

I. INTRODUCTION

CPB2 LLC submitted a Traffic Movement Permit (TMP) simultaneously with a Master Development Plan (MDP) application in September 2016, initially reviewed by the Planning Board beginning in October 2016. The MDP was approved on December 20, 2016. Over the course of the MDP review the TMP was given a separate timeline, as it necessitated additional review and analysis and was not a requirement of the MDP. The TMP is for a (+/-) 10 acre site at 58 Fore Street known as the Portland Company Complex. The proposed development includes retail, office, residential, hotel, restaurant, function space, a marina, and residential units. The site also contains a linear parcel owned by the Maine Department of Transportation that includes the Maine Rail/Trail corridor and the Eastern Promenade Trail, which will continue to traverse the site. In addition to the approximately10 acres, the property includes a 13.2 acre submerged land lease, currently containing a marina. There are currently a variety of the uses on the developed site, including storage, office, a marina, event space and the Maine Narrow Gauge Railroad Museum.

There have been two primary prongs of review of the TMP for 58 Fore Street: traffic analysis, and developing a framework for mitigation of the project's anticipated offsite traffic impacts. For a project of this scale, anticipated to be developed over several phases, with traffic impacts diffused over a relatively large study area, determining appropriate mitigation presented distinct challenges and opportunities. City staff and the applicant agreed to pursue a pilot impact fee methodology to account for the phased impacts of this particular site. The process of developing impact fee methodology for 58 Fore Street has the additional advantage of aiding the City's eventual implementation of a new impact fee system.

Key documents from the September submission are included as attachments, supplements through December, and updates to traffic analysis and mitigation since this was last before the Planning Board.

This development is being referred to the Planning Board for compliance with Traffic Movement Permit requirements. A total of 354 notices were sent to property owners within 500 feet of the site and a legal ad ran in the *Portland Press Herald* on April 17th and April 18th.

Applicant: CPB2 LLC, c/o Jim Brady

Consultants: David Senus/Mary McCrann, Woodard & Curran; Randy Dunton, Gorrill Palmer; Mary Costigan, Bernstein Shur; Owen Haskell, Surveyor; Perkins+Will, Architect

II. REQUIRED REVIEWS

Review	Applicable Standards
Traffic Movement Permit	14-527(e)(xii), 23 MRSA 704-A, Chapter 305 Rules and Regulations

III. PROJECT DATA

Existing Zoning	B-6 & Eastern Waterfront Port Zone, w/Shoreland & Floodplain overlays. Historic District on a portion of the site.		
Existing Use	Mixed use, including full service marina, parking, warehouses, boat storage, office, event space, blacksmithing.		
Proposed Use	Mixed use (including commercial, residential, office, marina)		
Proposed Development Program	958,679 sf of mixed residential and commercial uses, 435,200 sf parking (736 spaces), and 638 residential units.		
Property Size	+/- 10 acres		
	Existing	*Proposed*	*Net Change*
Building Footprint	111,822 sf	215,306 sf	103,484
Building Floor Area	167,500 sf	958,679 sf	791,179
Impervious Surface Area	335,000 sf	409,000 sf	74,000
Parking Spaces (on site)	+/-105	736	631
Bicycle Parking Spaces	0	38 racks/78 spaces	78
Estimated Cost of Project	TBD		

IV. EXISTING CONDITIONS & SITE CONTEXT

The project is adjacent to Portland Harbor to the southeast and Fore Street to the northwest. The Eastern Promenade is adjacent to the east; bounded by the harbor and by Fore Street. The property is contiguous with active waterfront uses, bordered by the Ocean Gateway Terminal and near the Maine State Pier, both serving deep water dependent large vessels, including cruise ships. The neighborhood to the immediate north is residential, with Waterville, St. Lawrence and Atlantic Streets perpendicular to the Fore Street-side boundary of the property, and abutted by Munjoy South apartments. Also to the north but immediately west of this residential area is the India Street neighborhood, which contains residential uses and a diverse mix of commercial uses – Shipyard Brewery, parking garages, the shops and restaurants of India Street, hotels, and the Eastern Cemetery.

The majority of the site is located within the B-6 Eastern Waterfront Mixed Zone. The Eastern Waterfront Port Zone (EWPZ) has a depth of 75 feet, and encompasses approximately 1,000 feet of waterfront frontage. In addition to the two base zones, there are multiple other overlays on the property - a portion of the site is in the Shoreland Zone; a small area is partially in the A2 flood zone; and the B-6 portion of the site is included in the Building Height Overlay & Building Envelopes map. The property is a local historic district (as shown on Attachment P39). The immediately adjacent zones to 58 Fore Street are the R-6 residential zone to the east and north, ROS (Recreation and Open Space) to the east, B-6 to the west, and EWPZ to the west and south. A portion of the property is a local historic district.

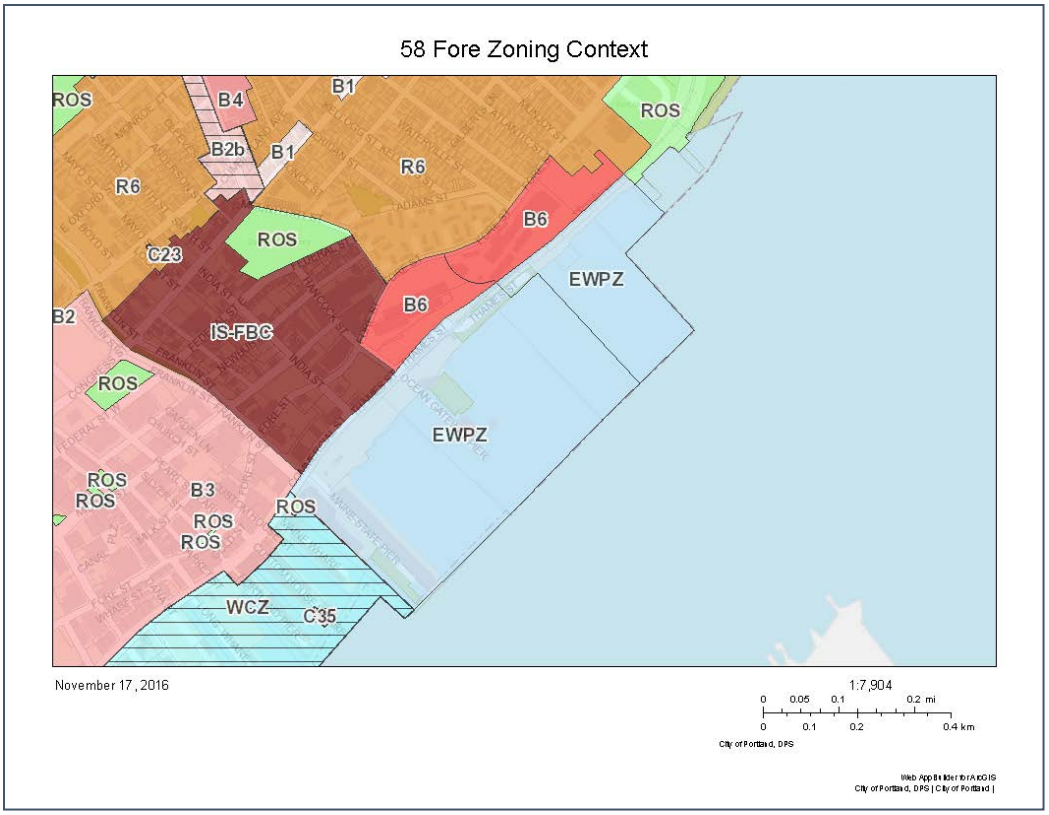

Figure 1, Zoning Context

58 Fore Street had been in continuous use since 1846, when it was established as the Portland Company for the manufacture of railroad equipment. An industrial site at its inception, it continued as one well into the 20th century, continuing to manufacture steel until 1978. It's now occupied by multiple tenants and uses, including a marina with associated parking and laydown areas, the Narrow Gauge Railroad, office, and storage. A 50' wide strip of Maine Department of Transportation (MDOT) land that encompasses both the Maine Narrow Gauge Railway and a public, shared use pathway that is an extension of the Eastern Promenade, maintained by Portland Trails and the City of Portland, bisect the site. Two easements run with the MDOT land.

V. PREVIOUS REVIEWS

A Master Development Plan was approved for the site on December 20, 2016, following three workshops and site walk. The MDP application included the initial TMP and traffic review. The MDP review process incorporated recommendations of the Historic Preservation Board.

This MDP application was preceded in the previous three years by three significant review processes, involving the Planning Board, the Historic Preservation Board and the City Council. In February 2016, following an extensive designation process by the Historic Preservation Board and Planning Board, the Portland City Council voted to designate a portion of the 58 Fore Street property as a local historic district subject to the provisions of Portland's historic preservation ordinance. The Portland Company Historic District as approved by the Council ensured the preservation of seven of the sixteen Portland Company structures on site. Figure 4 is a visual of the historic core of the site and the current historic district in the context of the overall site master plan.

An application for zoning map and text amendments for this site was submitted in August 2014, with the final changes adopted by the City Council on June 1, 2015. The application included a map amendment to rezone the property from the Waterfront Special Use Zone to B-6 and Eastern Waterfront Port Zone, with accompanying text

amendments and amendments to the existing Building Height Overlay & Building Envelopes overlay (Figure 6). There was an extensive, detailed review of the application in 2014 and 2015 leading to a Planning Board recommendation to the City Council on February 24, 2015, and the approval of the application in June 2015.

Below is a chronology of the map and text amendments:

- August 22, 2014. Application submitted to Department of Planning & Urban Development
- September 17, 2014. Applicant's Neighborhood Meeting
- October 21, 2014. Planning Board Workshop
- November 18, 2014. Planning Board Workshop and Site Walk
- January 8, 2015. Staff-Lead Neighborhood Meeting
- February 10, 201.5 Planning Board Workshop
- February 24, 2015. Planning Board Public Hearing
- February 9, 2015, City Council Workshop
- March 30, 2015, City Council Workshop/1st Reading
- June 1, 2015, City Council Public Hearing

The property was rezoned from the now non-existent WSUZ to a combination of B-6 and EWPZ in June 2015. The rezoning application included text, map, and B-6 height overlay amendments. All three of these zoning elements were created to serve the specific needs of the Eastern Waterfront and were a direct result of the recommendations of the Eastern Waterfront Masterplan. The 2015 rezoning extended the existing height overlay, B-6 and EWPZ zones eastward to encompass 58 Fore Street. Previous to the rezoning of 58 Fore Street, these zones were in place on the land immediately adjacent to the southwest, of 58 Fore Street, and in 2015 were extended eastward to encompass the property. The WSUZ was eliminated altogether.

VI. PUBLIC COMMENT

Attached is public comment regarding particular concerns with traffic conditions and impacts at the India Street and Middle Street intersection. Additional public comment regarding traffic impacts arose during the course of the MDP review. Only new comments have been included as attachments but all comments regarding traffic that were submitted when the Traffic Movement Permit was originally submitted can be viewed with the MDP Report here: http://portlandmaine.gov/AgendaCenter/ViewFile/Agenda/_12202016-1888?html=true

VII. TRAFFIC MOVEMENT PERMIT SUBMISSION REQUIREMENTS

The applicant has made submissions regarding traffic analysis and mitigation according to the requirements of 23 MRSA 704-A and Chapter 305 Rules and Regulations. Attached are pertinent items submitted in the course of the MDP review, and items submitted since the MDP approval.

a. Traffic Movement Permit (TMP) Application with Master Development Plan (MDP) – September 16, 2016. (**Attachment A**)
b. Traffic Impact Study (TIS), and Parking Study – September 16, 2016. (**Attachment B**)
c. Bay House Trip Generation and Parking Demands Memo – October 5, 2016. This was requested to help evaluate the appropriateness of the parking ratios used for the project, at the City's request. (**Attachment C**)
d. Revised TIS and Transportation Demand Management (TDM) Plan – October 31, 2016; This includes analysis updates, including revisiting the PACTS model data, trip assignment, expanding trip assignment to include additional intersections, and comparing 58 Fore trip generation with Franklin Street trip generation**. (Attachment D)**
e. Traffic Analysis and Recommendations Memo – December 6, 2016. This addresses point by point the traffic requirements of the Master Development Plan. This information was requested when the TMP

application was moved to a different timeline, so that the MDP application would include sufficient traffic analysis to meet the requirements of the Land Use Code under 14-527(e)(xii), until the TMP could be concluded. **(Attachment E)**

f. Impact Fee/Mitigation Memo – April 20, 2017. This summarizes a methodology and associated results of an impact fee calculation completed for the project. An impact fee methodology was requested by the City to identify a potential contribution as mitigation for the proposed impacts in the study area, with particular attention to short term improvements on Franklin. **(Attachment F)**

g. Supplemental Traffic Analysis Memo – April 20, 2017; This memo addresses comments to the applicant by the City in January. The key items of this memo included revised study area, revised capacity analysis, and a discussion on the Transportation Demand Management (TDM) plan. It also identifies and responds to the mitigation as required by the City. **(Attachment G)**

VIII. REVIEW OF TRAFFIC MOVEMENT PERMIT

Off-Site Mitigation

City staff has communicated extensively with the applicant over recent months to advance the traffic analysis for the project, as well as approaches to TMP-related mitigation of anticipated off-site traffic impacts. The application proposes a new model for mitigation for the City in the form of a pilot impact fee system. The fee system brought forward with this application (see Attachment F, 4-20-2017 summary memo from Gorrill Palmer) is a PM Peak Hour cost per-trip end fee ($650), for each of 585 total PM Peak Hour trip ends (approximately $380,000), to be paid as phases of the project are brought forward for consideration. This approach allows mitigation for short term improvements to proportionally and accurately track the development as it unfolds rather than a lump sum payment based on anticipated buildout and anticipated impacts. It also keeps impact fees predictable for the applicant and the City. Anticipated improvements to the Franklin Street corridor, based on Preliminary Design Report data, formed the basis of the analysis, as financial contributions to this corridor would produce significant traffic benefits for the study area. Though the analysis focused on Franklin Street, the City would have the discretion to apply impact fee contributions to other critical locations in the study area, depending on needs and priorities at the time of each phase of construction. In addition to offering an acceptable system for mitigation of traffic impacts for this particular, phased project, it also creates a helpful template as the City explores implementation of impact fee systems city-wide.

The impact fee system described in Attachment F would account for the project's off-site mitigation for the purpose of fulfilling the requirements of the Traffic Movement Permit. There may be other, related impacts the applicant would be obligated to over the course of site plan review related to sidewalk improvements, access and circulation, and associated site plan standards that are not encompassed by the TMP. TMP mitigation also does not include any costs that may be associated with the design and construction of the Fore Street Connector, as depicted in the 58 Fore Street Master Development Plan.

Transportation Demand Management

This TMP assumes robust trip reductions based on various factors, one of which is an aggressive and successful Transportation Demand Management plan for each phase. This applicant has included comments on the future TDM plan in Attachment F, and had previously supplied a narrative on TDM in October 2016. They have asked to bring forward specific TDM actions as part of each Level III Site Plan applicant, in the context of the overall framework outlined.

The proposal to develop the details of the TDM plan at such time as actual development proposals comes forward is reasonable. However, it's important that the Planning Board, applicant, and others understand what is likely to be expected in each TDM phase:

- Each Level III Site Plan will need to include a specific and realistic TDM plan that builds on the plans of earlier phases.
- The first Level III Site Plan will need to have the most details, and explain how the TDM plan is scalable to future phases.
- It is likely that financial, in-kind, and/or other contributions to METRO and other trip reduction activities will be required to achieve the anticipated trip reduction levels. Applicant will consult with METRO as part of each TDM effort.
- The proposed TDM plan for each phase will be evaluated by City staff and/or third parties with specialized experience in TDM implementation as part of the Level III Site Plan review process.
- If it does not appear that the TDM plan will achieve the anticipated trip reductions, the applicant will make adjustments to that TDM plan to improve its planned effectiveness, or the applicant will pay a per-trip impact fee based on the higher trip generation expected.
- Conversely, if the applicant's TDM plan is expected to achieve trip reductions higher than anticipated, the applicant will be eligible for a reduction in the expected trips for that phase and the resultant impact fee cost. However, it should be noted that the current trip reduction levels are already very optimistic and it may be difficult to achieve higher reductions.
- The TDM effort will include annual monitoring at the applicant's expense to determine effectiveness and inform TDM plans for subsequent phases.

Consulting Traffic Engineer Review
Thomas Errico, P.E., consulting Traffic Engineer for the City, has submitted the following comments (included as Attachment 1), based on his initial review of the September submission materials. Each item is now followed by his determination, based on the applicant's subsequent analysis and updated submittals, of resolution in the **Status** section, finding that the application meets TMP requirements.

- *The proposed project is expected to generate 424 new AM peak hour trips and 474 new PM Peak hour trips during a weekday. This level of trip generation requires a Traffic Movement Permit. The applicant submitted a Traffic Movement Permit Application and a Scoping Meeting was held on October 17, 2016. Given that the proposed project is expected to be phased over many years (market driven) and that the eastern waterfront area is experiencing significant growth, I would suggest that the Traffic Movement Permit be structured for an initial development phase. At the October 17th scoping meeting it was requested that a development phasing plan be provided and that information has not been provided. The applicant should provide details on a phasing plan with an initial phase for Traffic Movement Permit considerations.*
  Status: The applicant has provided a likely phasing plan for the project. The Traffic Movement Permit is being issued for the full build project with mitigation/monetary contributions tied to build-out phasing. The trip generation noted above has been updated to reflect staff comments. I have no further comment.

- *I have reviewed the existing base line traffic volumes and I find it to be reasonable.*
  Status: I have no further comment.

- *Based upon information provided by the Planning Department, the applicant has estimated background traffic volumes from other approved and unbuilt developments and I find the estimate to be reasonable.*
  Status: I have no further comment.

- *The applicant estimated trip generation volumes for the project according to trip generation rates from the Institute of Transportation Engineers (ITE). I find the methods used to be reasonable.*
  Status: I have no further comment.

- *The applicant incorporated adjustments to ITE traffic volumes according to inter-captured or shared trip usage and that given the location of the project, mode share adjustment is warranted. According to national research methods, the project can expect a reduction in trips levels – due shared use – of between 12 and 18% entering and exiting the site during the AM and PM peak hours. I find this estimate to be reasonable. For Mode Share adjustment (walk/bike/transit), the applicant is estimating a reduction of 35.8% for most project uses (the hotel reduction was assumed to be 10%). When considered in combination with the fact that the project is not taking credit for existing site traffic, I find the modal reduction assumption to be reasonable.*
  Status: As noted I find the adjustments to be reasonable, but would note that the reductions will be directly related to the effectiveness of the TDM plan. Accordingly, the details, monitoring and adjustment of TDM strategies will be an important part of ensuring the assumed mode share percentages are realized.

- *At the TMP Scoping meeting the applicant was requested to review information from the PACTS regional travel demand model in estimating the assignment of project traffic to the roadway network. The applicant has provided revised assignment percentages based upon conversations with the staff person managing the PACTS model. No backup information or explanation is provided and thus approval of the assumptions is outstanding. I would note the following:*
  - *No traffic is being assigned to Fore Street to the east and along Eastern Promenade. I do expect some traffic to travel in this direction.*
  - *It appears that 24% of the PM peak hour site traffic is destined to I295 southbound. Of this amount 8% appears to be via Franklin Street and 16% via Veterans Memorial Bridge. My knowledge of local traffic patterns does not support this assignment assumption.*
  - *It is not clear regarding the assumptions used to assigning I295 northbound traffic to Washington Avenue and Franklin Street.*
  - *A significant amount of traffic (17%) is destined to Preble Street during the PM peak hour. It is unclear of the routing to Preble Street Extension.*

  Status: The applicant has provided additional supporting information and based upon guidance from City staff the applicant has revised the trip generation assignment. Final capacity analyses of conditions account for these revisions and accordingly I have no further comment.

- *The general study area for assessing traffic impacts seems reasonable. I would note that at the TMP Scoping meeting, it was requested that the assignment continue to I-295 on Franklin Street and Washington Avenue. This is outstanding.*
  Status: As noted in the previous comment, the applicant has addressed this comment and I have no further comment.

- *The applicant has conducted a traffic analysis using the Synchro/SimTraffic model and I do not find the results to be acceptable. The applicant shall update the model according to the following:*
  - *The results of the capacity analysis indicate intersections currently operate at excellent levels of service. My field observations do not support this conclusion. The applicant shall create a base existing model that is calibrated to existing conditions from a delay and vehicle queue perspective.*
  - *The study area includes some of the most active pedestrian areas of the City and pedestrian movements directly impact traffic operations. The model shall be revised to include pedestrian movements and specific pedestrian signal phasing and timing.*
  - *The study shall document proposed vehicle queue lengths and the adequacy of existing turn lanes to provide adequate storage.*

  Status: The applicant has conducted a refinement of the SimTraffic model and I generally find the results to be reasonable and acceptable.

- *The applicant conducted a safety analysis and the results indicated that two locations within the study area are classified as a High Crash Location, the Franklin Street/Middle Street intersection and Fore Street between India Street and Montfort Street. The applicant has reviewed crash data and has noted winter maintenance enhancements at the Franklin Street/Middle Street intersection is suggested. In general, crash experience is somewhat low in the study area (outside of Franklin Street intersections). There are other non-High Crash Locations that I continue to review with City staff. I will continue to review crash information and suggested mitigation improvement strategies.*
  Status: The applicant has conducted a detailed review of crash reports and their analyses concluded that patterns did not warrant mitigation improvements. I find their conclusions to be reasonable and I have no further comment.

- *The traffic study* (dated October 6, 2016) *does not identify the need for off-site transportation mitigation strategies to address system infrastructure deficiencies and project impacts. I will continue to review information but would note the following:*
  - *As noted previously, the analysis needs to be updated and accordingly conclusions on transportation system adequacy may change.*
  - *The applicant should note any deficiencies in existing traffic control, including traffic signal equipment, coordination, phasing and timing adjustments.*
  - *Given that the applicant is assuming a significant portion of project trips are non-auto trips, inventory and identification of pedestrian, bicycle and transit infrastructure should be provided and discussion on system needs is suggested.*
  - *The study conducts analyses with and without future Franklin Street improvements. Given the uncertainty of implementation, an interim improvement plan may be warranted. For longer-term needs, financial contributions towards the implementation of adopted Franklin Street improvements may be a consideration.*

  Status: At the request of the City, the applicant developed a cost-sharing method associated with implementation of improvements along Franklin Street between Commercial Street and I-295. From that method a monetary contribution amount has been identified and I find this contribution to reflect project mitigation responsibilities associated with the Traffic Movement Permit.

IX. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board approve the proposed Traffic Movement Permit for 58 Fore Street.

X. PROPOSED MOTIONS – TRAFFIC MOVEMENT PERMIT

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on April 25, 2017 for application #2016-224 relevant to the Traffic Movement Permit; and the testimony presented at the Planning Board hearing, the Planning Board finds that the proposed plan **is/is not** in conformance with 23 MRSA 704-A and Chapter 305 Rules and Regulations pertaining to Traffic Movement Permits, subject to the following condition of approval, which must be met prior to the issuance of a building permit:

1. The applicant shall provide Traffic Movement Permit-related off-site mitigation in the form of per PM peak hour trip impact fees for each phase of development, as detailed in the April 20, 2017 Gorrill Palmer memo, *Impact Fee Calculation – 58 Fore Street Mixed Use Development*.

XI. ATTACHMENTS

Planning Board Report Attachments

1. Traffic Engineer Review (memo from Thomas Errico, 4/21/2017)

Public Comment

PC1. Shafer 4_15

Applicant's Submittal

A. Cover letter, Application Form 9-16-2016
B. Traffic Impact Study 9-16-2016
C. Trip Generation – Bay House Supplement 10-5-2016
D. Revised TIS 10-31-2016
E. MDP Traffic Analysis 12-6-2016
F. Impact Fee/Mitigation Memo 4-20-2017
G. Revised Traffic Analysis 4-20-2017

Portland Maine Yes. Google's good here.

Christine Grimando <cdg@portlandmaine.gov>

58 Fore Street - Final Traffic Movement Permit Comments

Tom Errico <thomas.errico@tylin.com> Fri, Apr 21, 2017 at 9:46 AM
To: Christine Grimando <CDG@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>

Hi Christine – The following outlines a status update regarding prior staff comments and represents final traffic comments as it relates to a Traffic Movement Permit.

Traffic Impact Study/Traffic Movement Permit

- The proposed project is expected to generate 424 new AM peak hour trips and 474 new PM Peak hour trips during a weekday. This level of trip generation requires a Traffic Movement Permit. The applicant submitted a Traffic Movement Permit Application and a Scoping Meeting was held on October 17, 2016. Given that the proposed project is expected to be phased over many years (market driven) and that the eastern waterfront area is experiencing significant growth, I would suggest that the Traffic Movement Permit be structured for an initial development phase. At the October 17th scoping meeting it was requested that a development phasing plan be provided and that information has not been provided. The applicant should provide details on a phasing plan with an initial phase for Traffic Movement Permit considerations.

Status: The applicant has provided a likely phasing plan for the project. The Traffic Movement Permit is being issued for the full build project with mitigation/monetary contributions tied to build-out phasing. The trip generation noted above has been updated to reflect staff comments. I have no further comment.

- I have reviewed the existing base line traffic volumes and I find it to be reasonable.

Status: I have no further comment.

- Based upon information provided by the Planning Department, the applicant has estimated background traffic volumes from other approved and unbuilt developments and I find the estimate to be reasonable.

Status: I have no further comment.

- The applicant estimated trip generation volumes for the project according to trip generation rates from the Institute of Transportation Engineers (ITE). I find the methods used to be reasonable.

Status: I have no further comment.

- The applicant incorporated adjustments to ITE traffic volumes according to inter-captured or shared trip usage and that given the location of the project, mode share adjustment is warranted. According to national research methods, the project can expect a reduction in trips levels – due shared use – of between 12 and 18% entering and exiting the site during the AM and PM peak hours. I find this estimate to be reasonable. For Mode Share adjustment (walk/bike/transit), the applicant is estimating a reduction of 35.8% for most project uses (the hotel reduction was assumed to be 10%). When considered in combination with the fact that the project is not taking credit for existing site traffic, I find the modal reduction assumption to be reasonable.

Status: As noted I find the adjustments to be reasonable, but would note that the reductions will be directly related to the effectiveness of the TDM plan. Accordingly, the details, monitoring and adjustment of TDM

strategies will be an important part of ensuring the assumed mode share percentages are realized.

- At the TMP Scoping meeting the applicant was requested to review information from the PACTS regional travel demand model in estimating the assignment of project traffic to the roadway network. The applicant has provided revised assignment percentages based upon conversations with the staff person managing the PACTS model. No backup information or explanation is provided and thus approval of the assumptions is outstanding. I would note the following:

    - No traffic is being assigned to Fore Street to the east and along Eastern Promenade. I do expect some traffic to travel in this direction.

    - It appears that 24% of the PM peak hour site traffic is destined to I295 southbound. Of this amount 8% appears to be via Franklin Street and 16% via Veterans Memorial Bridge. My knowledge of local traffic patterns does not support this assignment assumption.

    - It is not clear regarding the assumptions used to assigning I295 northbound traffic to Washington Avenue and Franklin Street.

    - A significant amount of traffic (17%) is destined to Preble Street during the PM peak hour. It is unclear of the routing to Preble Street Extension.

Status: The applicant has provided additional supporting information and based upon guidance from City staff the applicant has revised the trip generation assignment. Final capacity analyses of conditions account for these revisions and accordingly I have no further comment.

- The general study area for assessing traffic impacts seems reasonable. I would note that at the TMP Scoping meeting, it was requested that the assignment continue to I-295 on Franklin Street and Washington Avenue. This is outstanding.

Status: As noted in the previous comment, the applicant has addressed this comment and I have no further comment.

- The applicant has conducted a traffic analysis using the Synchro/SimTraffic model and I do not find the results to be acceptable. The applicant shall update the model according to the following:

    - The results of the capacity analysis indicate intersections currently operate at excellent levels of service. My field observations do not support this conclusion. The applicant shall create a base existing model that is calibrated to existing conditions from a delay and vehicle queue perspective.

    - The study area includes some of the most active pedestrian areas of the City and pedestrian movements directly impact traffic operations. The model shall be revised to include pedestrian movements and specific pedestrian signal phasing and timing.

    - The study shall document proposed vehicle queue lengths and the adequacy of existing turn lanes to provide adequate storage.

Status: The applicant has conducted a refinement of the SimTraffic model and I generally find the results to be reasonable and acceptable.

- The applicant conducted a safety analysis and the results indicated that two locations within the study area are classified as a High Crash Location, the Franklin Street/Middle Street intersection and Fore Street between India Street and Montfort Street. The applicant has reviewed crash data and has noted winter maintenance enhancements at the Franklin Street/Middle Street intersection is suggested. In general, crash experience is somewhat low in the study area (outside of Franklin Street intersections). There are other non-High Crash Locations that I continue to review with City staff. I will continue to review crash information and suggested mitigation improvement strategies.

Status: The applicant has conducted a detailed review of crash reports and their analyses concluded that patterns did not warrant mitigation improvements. I find their conclusions to be reasonable and I have no further comment.

- The traffic study does not identify the need for off-site transportation mitigation strategies to address system infrastructure deficiencies and project impacts. I will continue to review information but would note the following:

    - As noted previously, the analysis needs to be updated and accordingly conclusions on transportation system adequacy may change.

    - The applicant should note any deficiencies in existing traffic control, including traffic signal equipment, coordination, phasing and timing adjustments.

    - Given that the applicant is assuming a significant portion of project trips are non-auto trips, inventory and identification of pedestrian, bicycle and transit infrastructure should be provided and discussion on system needs is suggested.

    - The study conducts analyses with and without future Franklin Street improvements. Given the uncertainty of implementation, an interim improvement plan may be warranted. For longer-term needs, financial contributions towards the implementation of adopted Franklin Street improvements may be a consideration.

Status: At the request of the City, the applicant developed a cost-sharing method associated with implementation of improvements along Franklin Street between Commercial Street and I-295. From that method a monetary contribution amount has been identified and I find this contribution to reflect project mitigation responsibilities associated with the Traffic Movement Permit.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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"One Vision, One Company"

PC1

Portland Maine Yes. Google's good here.

Christine Grimando <cdg@portlandmaine.gov>

Traffic Movement Permit notice

kathleen shafer <kashafer@mac.com> Sat, Apr 15, 2017 at 8:43 AM
To: cdg@portlandmaine.gov

Hi Christine,
I am a resident at 22 Hancock St and just received a notice for the Planning Board hearing for the 58 Fore Street development Traffic Movement Permit.
I've been a strong supporter of that project and appreciate the opportunities to provide input.

Traffic impacts from the developments in and around the India St neighborhood are a concern regarding a particular intersection, and without the plans posted online yet for this meeting I want to find out where to provide this input.

The concern is the Middle St/India St intersection, which is a 2-way stop for Middle St and no stop for India St traffic. This intersection is already seeing a steady increase in vehicle and pedestrian traffic with the development activities, making it very difficult and dangerous for Middle St drivers during periods of heavy activity to cross India St to come and go from the residences, businesses, parking garage, and ultimately the office building currently under construction. Waiting and watching for oncoming traffic in both directions, as well as pedestrians crossing from all sides of the street with no crossing signals, is becoming unsafe. It's a blind intersection for drivers coming from the Hancock St direction when cars are parked along India St, making the crossing even more dangerous. Additionally cars traveling on India St often do not stop for pedestrians, and I've experienced several near misses when walking on Middle St crossing India St.
I'm not sure whether the scope of the April 25 Meeting plans covers this intersection at all, but I'd like to find out where to submit this feedback for any reviews of India St traffic plans.

Thanks

Kathy Shafer

Att. A

MASTER DEVELOPMENT PLAN & TRAFFIC MOVEMENT PERMIT APPLICATIONS

58 Fore Street
Portland, Maine

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

41 Hutchins Drive, Portland, Maine 04102
Tel. (207) 774-2112 Fax (207) 774-6635

227007.00
CPB2 LLC
September 2016

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Portland, Maine 04102
www.woodardcurran.com

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T 207.774.2112
F 207.774.6635

September 16, 2016

Christine Grimando, Senior Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: 58 Fore Street Redevelopment
Master Development Plan & Traffic Movement Permit Application

Dear Christine:

On behalf of CPB2, LLC, Woodard & Curran is submitting a Master Development Plan and Traffic Movement Permit Application for the proposed redevelopment of the former Portland Company Complex located at 58 Fore Street in Portland, Maine. Woodard & Curran will be acting as the agent for CPB2, LLC for this permit application. The permit documents were prepared in accordance with Chapter 14, Land Use Code of Ordinances of the City of Portland, Maine and meet the applicable sections of the City of Portland Design and Technical Manuals. All submission materials (i.e. application, narrative report and attachments, and drawings, etc.) have been uploaded to the City's E-Plan web-site.

We look forward to working with your office on this project, and would be glad to meet to discuss this application in greater detail. Please do not hesitate to contact me if you have any questions or require additional information.

Sincerely,

WOODARD & CURRAN

David Senus, PE
Project Manager

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1. APPLICATION FORM

Portland, Maine — Yes. Life's good here.

Jeff Levine, AICP, Director
Planning & Urban Development Department

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

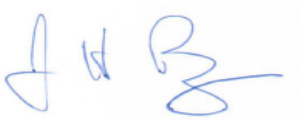
By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no Site Plan or Historic Preservation Applications can be reviewed until payment of appropriate application fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

☐ Within 24-48 hours, once my complete application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☐ Within 24-48 hours, once my application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☒ I intend to deliver a payment method through the ~~U.S. Postal Service mail~~ a hand delivered check once my application paperwork has been electronically delivered.



September 9, 2016

Applicant Signature: Date:

I have provided digital copies and sent them on: Date:

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means i.e. a thumb drive or CD to the Inspections Office, City Hall, 3rd Floor, Room 315.

Master Development Plan
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form to be used for a Master Development Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Purpose of a Master Development Plan:

- The purpose of a Master Development Plan is to provide for a mix of land uses at designated locations to achieve a land development responsive to the assets of a site. A Master Development Plan is a well-integrated development in terms of land uses, functional activities, and major design elements such as buildings, roads, utilities, drainage systems and open space. The Master Development Plan is deemed appropriate to large scale mixed use projects that are intended to be developed in phases. The Master Development Plan shall be reviewed by the Planning Board and may be reviewed independently or concurrently with review of a Level III site plan application for a phased development.

A Master Development Plan is applicable as follows:

- A Master Development Plan is applicable for a site with one acre or larger in cumulative lot area that is designed as a cohesive and integral development program consisting of multiple buildings and associated site improvements proposed to be built in phases.
- The Master Development Plan option shall not apply in residential zones, except for institutional uses.

Planning Board Decision:

- A Master Development Plan approval shall not be construed as final authorization of the development. An approval shall confer pending proceeding status upon the development with the effect of maintaining the applicability of regulations in effect at the time of approval for as long as the Master Development approval remains valid (6 years from date of approval), including permissible extensions if granted (two 2-year extensions may be granted based upon criteria). All Level III site plans for each phase shall be in general conformance with the Master Development Plan.

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

Updated: April 23, 2014

PROJECT NAME: 58 Fore Street Master Plan

PROPOSED DEVELOPMENT ADDRESS:

58 Fore Street, Portland, ME

PROJECT DESCRIPTION:

Master Development Plan for the re-development of the former Portland Company Complex.

CHART/BLOCK/LOT: Tax Map 18A, Lots 1, 2, & 3

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: CPB2 LLC, c/o Jim Brady Business Name, if applicable: CPB2, LLC Address: PO Box 7987 City/State : Portland, ME Zip Code: 04112	**Applicant Contact Information** Work # 207-558-3704 Home# Cell # Fax# e-mail: jameshbrady@gmail.com
Owner – (if different from Applicant) N/A Name: Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Woodard & Curran, c/o David Senus, PE & c/o Mary McCrann, AICP Address: 41 Hutchins Drive City/State : Portland, ME Zip Code: 04102	**Agent/Representative Contact information** Work # Dave Senus 207-558-3704 Mary McCrann 207-558-3783 Cell # e-mail: dsenus@woodardcurran.com mmccrann@woodardcurran.com
Billing Information SAME AS APPLICANT Name: Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Engineer SAME AS AGENT Name: Address: City/State : Zip Code:	**Engineer Contact Information** Work # Cell # Fax# e-mail:
Surveyor Name: Owen Haskell Address: 390 US Route 1, Unit 10 Falmouth, ME 04105 City/State : Zip Code:	**Surveyor Contact Information** Work # 207-774-0424 Cell # Fax# e-mail:
Architect Name: Perkins + Will Address: 225 Franklin St. Suite 1100 Boston, MA 02110 City/State : Zip Code:	**Architect Contact Information** Work # 617-478-0300 Cell # Fax# e-mail:
Attorney Bernstein Shur Name: Mary Costigan Address: 100 Middle Street City/State : Portland, ME Zip Code: 04101	**Attorney Contact Information** Work # 207-228-7147 Cell # Fax# 207-774-1127 e-mail: mcostigan@bernsteinshur.com

APPLICATION FEES:
Check all reviews that apply. (Payment may be made by Credit Card, Cash or Check payable to the City of Portland.)

Master Development Plan (check applicable reviews) _X_ Application Fee ($1,000.00)	The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($40.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.

APPLICATION SUBMISSION:

1. All site plans and written application materials must be submitted electronically on a CD or thumb drive with each plan submitted as separate files, with individual file which can be found on the **Electronic Plan and Document Submittal** page of the City's website at http://me-portland.civicplus.com/764/Electronic-Plan-and-Document-Submittal

2. In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Building Inspections Office to start the review process.

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

1. **One (1) full size site plans** that must be **folded.**
2. One (1) copy of all written materials or as follows, unless otherwise noted:
   a. Application form that is completed and signed.
   b. Cover letter stating the nature of the project.
   c. All Written Submittals (Sec. 14-525 2. (c), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

Please refer to the application checklist (attached) for a detailed list of submission requirements.

APPLICANT SIGNATURE:

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Master Development Plan review. It is not a permit to begin construction. An approved Level III site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:**
	September 9, 2016

PROJECT DATA

The following information is required where applicable, in order complete the application.

Total Area of Site	433,000	sq. ft.
Proposed Total Disturbed Area of the Site	433,000	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland		
Impervious Surface Area		
Impervious Area (Total Existing)	335,000	sq. ft.
Impervious Area (Total Proposed)	409,000	sq. ft.
Building Ground Floor Area and Total Floor Area		
Building Footprint (Total Existing)	111,822	sq. ft.
Building Footprint (Total Proposed)	215,306	sq. ft.
Floor Area (Total Existing)	167,500	sq. ft.
Floor Area (Total Proposed)	958,679	sq. ft.
Zoning		
Existing	B6 & EWPZ w/Shoreland Overlay	
Proposed, if applicable	N/A	
Land Use		
Existing	Warehouse & Parking	
Proposed	Mixed-Use	
Residential, If applicable		
# Residential Units (Total Existing)	None	
# Residential Units (Total Proposed)	638	
# Number of Lots (Total Proposed)	to be determined	
# Affordable Housing Units (Total Proposed)	Compliance with 14-487	
Proposed Bedroom Mix		
# Efficiency Units (Total Proposed)	to be determined	
# One-Bedroom Units (Total Proposed)	to be determined	
# Two-Bedroom Units (Total Proposed)	to be determined	
# Three-Bedroom Units (Total Proposed)	to be determined	
Parking Spaces		
# Parking Spaces (Total Existing)	105 +/-	
# Parking Spaces (Total Proposed)	736 spaces	
# Handicapped Spaces (Total Proposed)	will meet ADA requirements	
Bicycle Parking Spaces		
# Bicycle Spaces (Total Existing)	0 formally designated	
# Bicycle Spaces (Total Proposed)	38 racks (or 76 bike spaces)	
Estimated Cost of Project	to be determined	

MASTER DEVELOPMENT PLAN SUBMISSIONS			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST Sec. 14-527 (c) and (e)**
X		1	Completed Application form
X		1	Application fees
X		1	Written description of project
X		1	A written statement and/or plan as to the general impact of the proposed Master Development plan upon the area, relationship to surrounding properties, and measures to create appropriate transitions and access to abutting public properties and neighboring tracts.
X		1	Evidence of right, title and interest
X		1	Evidence of state and/or federal approvals, if applicable
X		1	Written assessment of proposed project's compliance with applicable zoning requirements
X		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
X		1	Written requests for waivers from site plan or technical standards, if applicable
X		1	Evidence of financial and technical capacity
X		1	General statements concerning storm water management techniques.
X		1	Traffic Analysis and recommendations prepared by a registered professional engineer, including current traffic counts, existing street capacity, traffic generation projections, and ability to absorb the increased traffic. If Traffic Movement Permit applies, the TMP submissions and review supersede. (Section 14-527 (e) xii)
X		1	Utilities analysis and recommendations prepared by registered professional engineer. (see utility plan below) Analysis shall assess capacity, identify deficiencies and recommend improvements, including timing, funding mechanisms and coordination with City (14-527 (e) xiii
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST Sec. 14-527 (c) and (e)**
X		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Master Development Plan Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase) – scale not less than 1 inch equaling 50 feet**
X		Neighborhood context map, at a scale not less than 1 inch 100 feet	
X		Approximate boundary lines of existing and proposed lots with areas and dimensions	
X		Plan show north arrow, date, scale, legend, title Master Development Concept Site Plan, followed by project name, applicant, engineer, designer, and/or agents	
X		For residential areas, proposed density, lot configuration, circulation and plot plan	
X		Analysis of natural features of the site, including natural waterways, wetlands, floodplains, topography, soil conditions and other natural features	
X		Analysis of designated view corridors, historic resources, and archeological resources associated with the site	
X		Existing/proposed buildings and other significant structures, building groupings, exterior building elevations and entrances, parking areas and other significant physical features of the site	

Updated: April 23, 2014

X		Context drawings, perspective renderings, photographic montages, or computer generated graphics depicting the proposed development within the surrounding building and environmental context
X		Building elevation drawings shall include: • Illustration of all sides of the structures
		• Views of major entries or prominent building features
		• Illustration of building articulation and elements
		• Building finish composition
		• Pedestrian and streetscape elements of the Master Development Plan
		Digital 3-D model tied to specific location that is submitted as a KML, KMZ, DXF or DWG file on a CD or DVD or such format as approved by the Planning Authority (Sec. 14527 (e)2)
X		Major circulation patterns surrounding and serving the site, existing and proposed street lines, ways, easement and public areas within or next to the site
X		Major landscaping elements, features, open space, and plans for preservation of natural features
X		Analysis of the public safety services needed to support the Master Development Plan
X		Analysis of the anticipated impacts on the public school system to support the Master Development Plan
X		Generalized drainage plan for the site, drainage ways, flows, points of outfall and indicating impacts of development on affected drainage basins. Contour information at not less than 2 ft. intervals and document run-off characteristics
X		Inventory of existing utilities (storm water, sanitary, electrical , fire alarm boxes & lines, gas, water, lighting, curb and gutter and etc.) illustrating locations, sizes, diameters carrying capacity and present load

COMMITMENT & INTEGRITY
DRIVE RESULTS

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F 207.774.6635

September 16, 2016

Keith Gautreau
City of Portland Fire Department
380 Congress Street
Portland, Maine 04101

Re: 58 Fore Street Re-development
Master Development Plan Application– Fire Department Review

Dear Keith:

Thank you for coordinating the City of Portland Fire Department's review of the 58 Fore Street Re-development project. Woodard & Curran is filing a Master Development Plan Application with the City of Portland on behalf of CPB2, LLC. The project Site encompasses three parcels of land totaling an area of approximately 9.93 acres located between Fore Street and the waterfront. A plan set showing the proposed development is attached to this application. The set includes site, utility, and grading and drainage plans, as well as architectural and rendered landscaping. As a Master Development Plan, the plans show schematic level build-out of the site, and are not intended to serve as detailed design. Detailed design plans will be developed at a future date, and reviewed under future Site Plan reviews by the City Planning Office and the Portland Fire Department.

The items in the Portland Fire Department Site Review Checklist area addressed as follows:

- Name, address, telephone number of applicant:
  - CPB2, LLC, c/o Jim Brady
  - PO Box 7987, Portland, ME 04112
  - Applicant's Agent – Woodard & Curran, Attention David Senus – 207-558-3704
- Name, address, telephone number of architect:
  - Perkins + Will
  - 225 Franklin Street, Suite 1100, Boston, MA 02110
  - 617-478-0300, Attention Jeff Kim
- Proposed uses of any structures [NFPA and IBC classification]:
  - The proposed building uses have been included in the table below and will include a mix of residential units, office space, retail space, hotel, restaurant, and a full service marina. The NFPA and IBC classification will be determined prior to submission of a Site Plan Application.
- Square footage of all structures [total and per story]:
  - The proposed development block characteristics are indicated in the table below.

Table: Development Block Proposed Characteristics

Development Block	Allowable Height by Zoning	Proposed Use	Current GFA (as of September 2016)	Proposed Parking Areas
B1	35 feet	retail, residential, office	169,278	Structured parking beneath B1
B2	35 – 45 feet	retail, residential, office	72,941	Structured parking beneath B4/B5/B6
B3	35 feet	retail, office	30,800	Structured parking beneath B4/B5/B6
B4	45 - 65 feet	residential, retail	247,860	Structured parking beneath B4/B5/B6
B5	45 – 55 feet	residential, hotel, restaurant, function	247,650	Structured parking beneath B4/B5/B6
B6	45 – 55 feet	residential, B4-B6 connector	187,550	Structured parking beneath B4/B5/B6
B7 – Marina		marina	2,600	Structured parking beneath B4/B5/B6
Subtotal*			**958,679**	
Parking			435,200	
Total Project			**1,393,879**	
***Subtotal Breakdown by Use**				
Total Residential GSF			656,739	
Total Retail GSF			50,273	
Total Office GSF			123,917	
Total Hotel GSF			98,000	
Total Restaurant GSF			3,800	
Total Function GSF			5,800	
Total B4-B6 Connector GSF			17,550	
Total Marina Facilities GSF			2,600	

- Elevations of all structures:
  - Architectural plans showing the elevations of the proposed structures are included in the attached plan set.
- Proposed fire protection of all structures:
  - Internal sprinkler systems will be provided for the proposed buildings.
- Hydrant locations:
  - Existing hydrant locations are indicated on the attached Utility Plan.
- Water main size and location:
  - Water mains within the municipal ROW are noted on the Utility Plan including size and location. Water services into the site are being coordinated with the Portland Water District. Exact size, location and connections will be identified for future Site

Plan application. Existing water mains located in Fore Street and Thames Street are 8 inch and 12 inch respectively.

- Access to all structures [min. 2 sides]:
    - All structures will be accessible on a minimum of two sides.
- A code summary shall be included referencing NFPA 1 and all fire department technical standards:
    - A code summary referencing NFPA 1 and all fire department technical standards will be provided in advance of a Site Plan Application. The building tenant and use has not yet been selected, and the building interior (and associated code references) will depend on the final requirements for the structure.

We appreciate your comments and look forward to discussing this project further. If you have any questions or require additional information, please contact me at any time.

Sincerely,

WOODARD & CURRAN INC.

David Senus, PE
Project Manager

Enclosures: Full Plan Set

Cc: Christine Grimando, Senior Planner, City of Portland Planning Division

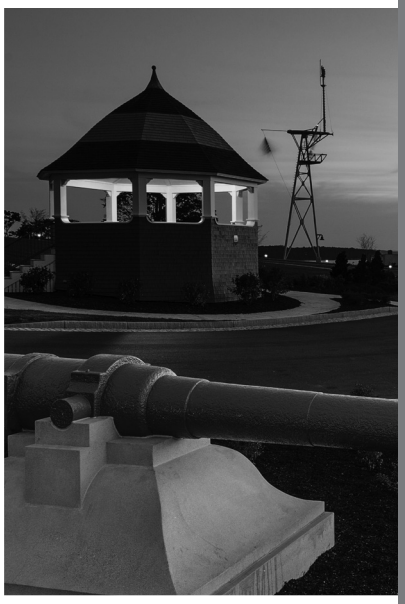
13. TRAFFIC ANALYSIS

Gorrill Palmer has prepared a traffic impact analysis for the proposed 58 Fore Street project, a Traffic Movement Permit application and a Transportation Demand Management Plan. A Traffic Study Pre-Scoping meeting was held with City of Portland staff on July 27, 2016 at City Hall. The full traffic analysis and parking summary report has been provided as an attachment to this Section, in addition to a copy of the Traffic Movement Permit Application.

13.1 ATTACHMENTS

- Traffic Impact Study
- Traffic Movement Permit Application
- Site Parking Demand Memo for 58 Fore Street Mixed Use Development

Relationships.
Responsiveness.
Results.



Section 7
Traffic Impact Study
58 Fore Street Redevelopment
Portland, Maine

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Traffic Impact Study
58 Fore Street Development
Portland, Maine
September 2016

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I. Introduction

This study examines the impact of the redevelopment of the historic Portland Company at 58 Fore Street on Portland's Eastern Waterfront. The development is proposed to be a total of 958,679 sf of building area and is separated into seven Development Blocks (B1-B7) with varying uses. The following table summarizes the proposed site uses by Development Block:

Proposed Site Use Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function Space	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

The new marina facilities on B7 are proposed to be three times the size of the existing marina. It will be a new, modern facility with 220 slips proposed; 140 for seasonal boaters and 80 for transient vessels. The facility will service residents of Portland (including Islanders commuting to work on the Portland Peninsula), residents of the 58 Fore Street site, and transient boaters.

There are three proposed accesses to the site; Thames Street Extension into the site, a full movement driveway onto Fore Street across from Waterville Street primarily for residential units, and a new public road connecting Fore Street to Thames Street Extension. The attached Figure 1 (Appendix A) shows the location of the site.

II. Existing Traffic Volumes

Morning and afternoon turning movement counts were completed from 7:30 AM to 9:30 AM and from 4:00 PM to 6:00 PM at the following locations and dates:

- Franklin Street / Middle Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Franklin Street / Fore Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Franklin Street / Commercial Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Cumberland Avenue / Washington Street – August 16, 2016 (AM and PM)
- Congress Street / Mountfort Street / Washington Street – August 16, 2016 (AM and PM)
- Congress Street / India Street – August 16, 2016 (AM and PM)
- Fore Street / Mountfort Street – August 11, 2016 (AM and PM)
- Fore Street / Existing Site Driveways – August 11, 2016 (AM and PM)
- Fore Street / Waterville Street – August 11, 2016 (AM and PM)

The dates, times, and locations of the counts were approved by the City prior to the counts.

Additionally, as part of a different study, GP had completed morning and afternoon turning movement counts at the following locations:

- India Street / Fore Street
- India Street / Commercial Street
- Fore Street / Hancock Street

These counts were collected on October 7, 2015 from 7:00 AM to 8:30 AM and from 4:00 PM to 6:00 PM. The date, times, and locations of the counts were approved by the City prior to the counts.

The AM and PM peak hour volumes of the counts at all 12 locations are shown on the attached Figure 2 (Appendix A).

III. Other Development in the Vicinity of the Site

Approved projects that are not yet opened as well as projects for which applications have been filed are required to be included in the predevelopment volumes for this project. Based on conversations with City Staff the following projects have been included in the background traffic for this project:

- A – 158 Fore Street: 180 room hotel
- B – 1 India Street: office and bank
- C – 185 Fore Street: 4,085 sf of office or retail and 8 residential units
- D – 16 Middle Street: 5,305 sf of retail and 39,526 sf of office
- E – 113 Newbury Street: 39 condominium units (Seaport Lofts)
- F – 48 Hancock Street: 2 residential units
- G – 49 Hancock Street: 2 residential units
- H – 62 India Street: 5,409 sf of retail and 29 condominium units
- I – 169 Newbury Street: 24 condominium units
- J – 273 Congress Street: 2,290 sf of retail and 10 residential units
- K – 31 Fore Street: 4 condominium units

The locations, sizes, and uses of these developments are shown on the attached Other Development Figure in Appendix A. The forecast traffic from these projects within the study area is shown on the attached Figure 4 in Appendix A.

IV. Predevelopment Traffic Volumes

Traffic volumes are typically seasonally adjusted to approximate the 30th highest hour of the year using the weekly group mean factors published by MaineDOT. This seasonal adjustment increases the volumes to those that may be experienced during peak summer months. Since August is a peak summer month, no seasonal adjustment needs to be applied to the counts collected in August 2016. However, October is not a peak summer month, so the three locations counted for another study in October 2015 needed to be adjusted. This seasonal adjustment resulted in an increase of 3.4%.

In addition to seasonally adjusting the traffic volumes, they are also increased by a yearly growth to approximate the build out year of the project. The proposed project is anticipated to be completed and occupied in 2027. MaineDOT traffic counts in the area show a decrease in traffic volumes in the past six years. To be conservative, an annual growth of 0.5% per year was utilized. This is the same growth used for the recently completed Franklin Street Study. The seasonally and annually adjusted volumes are shown on the attached Figure 3 in Appendix A.

The annually and seasonally adjusted traffic volumes have been combined with the approved other development ahead of this project in the approval process to yield the 2027 Predevelopment Design Hour Volumes (DHV) shown on the attached Figure 5 in Appendix A.

V. Trip Generation

The trip generation for the site was calculated separately for Development Blocks 1-6 (B1-B6) and for Development Block 7 (B7), then combined to yield the total site trip generation. This is due to the unique nature of the marina on B7. The following is a summary of the methods, assumptions, and results of the trip generation calculations for the site.

Development Blocks 1-6

The Institute of Transportation Engineers' publication, *Trip Generation*, Seventh Edition, was used to forecast the traffic to be generated by B1-B6. The Ninth Edition is available, but has not yet been accepted by the MaineDOT. Since this project will generate greater than 200 trip ends in a peak hour, a MaineDOT Traffic Movement Permit (TMP) will be required. The permit process can be administered by the City since they have delegated review authority.

The following table summarizes the trip generation for B1-B6.

Development Blocks 1-6 ITE Trip Generation Summary

Development Block	Land Use Code	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
B1								
	814 – Specialty Retail	7,878 sf	4	2	6	9	12	21
	220 – Apartment	91 Units	9	37	46	36	20	56
	710 – General Office	79,000 sf	140	15	155	22	127	149
B2								
	814 – Specialty Retail	26,895 sf	12	8	20	33	40	73
	220 – Apartment	19 Units	2	8	10	8	4	12
	710 – General Office	25,617 sf	57	6	63	9	52	61
B3								
	814 – Specialty Retail	11,500 sf	5	4	9	14	17	31
	710 – General Office	19,300 sf	45	5	50	7	41	48
B4								
	220 – Apartment	275 Units	28	112	140	111	60	171
	814 – Specialty Retail	4,000 sf	2	1	3	5	6	11

Development Block	Land Use Code	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
B5								
	220 – Apartment	108 Units	7	41	48	36	20	56
	310 – Hotel	132 Rooms	44	30	74	43	35	78
	932 – High Turnover Sit-Down Restaurant	3,800 sf	22	22	44	25	16	41
	Function Space*	5,800 sf	0	0	0	0	0	0
B6								
	230 – Residential Condominium / Townhouse	131 Units	9	49	58	44	24	68
	220 – Apartment	14 Units	1	6	7	6	3	9
Development Blocks 1-6			**387**	**346**	**733**	**408**	**477**	**885**

*It was assumed that the function space would be ancillary to the other uses in the Development Block and would not generate additional traffic.

Due to the variety of uses and the site's location within a downtown area, two reductions can be applied to refine the trip generation for B1-B6. These reductions are summarized as follows:

Shared Use Adjustment

Due to the close proximity of the mixed uses and the sharing of people between uses, simply adding the trip generation of each use as if they were isolated would result in an overestimate of trip generation. To estimate the traffic that will visit more than one destination without leaving the site, GP utilized the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool. The NCHRP 684 spreadsheet uses the ITE forecast trip generation for each type of land use (office, retail, restaurant, residential, hotel, and other) and estimates the trips that will travel between two uses without leaving the site (spreadsheets provided in Appendix B). This yields an internal trip capture percentage, which is the percentage of trip ends that will travel between two uses. The following tables summarize the AM and PM peak hour internal trip capture percentages respectively:

AM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends*		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total
Office	242	26	10%	46%	23	12	35
Retail	23	15	57%	47%	13	7	20
Restaurant	22	22	55%	50%	12	11	23
Residential	56	253	4%	5%	2	12	14
Hotel	44	30	2%	30%	1	9	10
Total	**387**	**346**	**12%**	**14%**	**51**	**51**	**102**

*These values are taken directly from the NCHRP spreadsheets (Appendix B), which may not match exact calculations due to rounding in the spreadsheet.

PM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends*		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total
Office	38	220	18%	5%	7	10	17
Retail	61	75	31%	44%	19	33	52
Restaurant	25	16	52%	69%	13	11	24
Residential	241	131	11%	15%	27	19	46
Hotel	43	35	21%	6%	9	2	11
Total	**408**	**477**	**18%**	**15%**	**75**	**75**	**150**

*These values are taken directly from the NCHRP spreadsheets (Appendix B), which may not match exact calculations due to rounding in the spreadsheet.

Other Modes of Transportation Reduction

It can be expected for a site in a downtown area that other modes of transportation will be used to go to and from the site. These other modes could include things such as transit, bicycle, or walking. This site is adjacent to an existing bus route, as well as located on a pedestrian and bicycle path, so full use of other modes of transportation are readily available. The other modes reduction for B1-B6 is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract for the City of Portland. Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, used this data to create maps (Appendix B) that show the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to travel to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the

individual tracts. The reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number of working people in the same three Census Tracts. This calculation yields a reduction of 35.8%, which appears reasonable for this area. The detailed calculation is described in the "Site Parking Demand" memo included in Appendix B.

The Census data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site, but not necessarily the proposed restaurant and hotel. The restaurants and hotel were further researched to find studies that included information on other modes of transportation for restaurants and hotels. The studies found indicated that 40%-65% of restaurant customers may be using alternative modes of transportation. Since the studies were not specific to Portland, Maine, the local data is expected to be closer to actual conditions that would be seen at the 58 Fore Street development, so the 35.8% reduction was applied to the restaurants. There was limited data available for hotels, so a conservative reduction of 10% was used for the hotel. The studies are discussed in more detail in the "Site Parking Demand" memo in Appendix C. The following table summarizes the other modes of transportation reduction for the site trip generation:

Other Modes of Transportation Reduction Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 Trip Generation	387	346	733	408	477	885
Hotel Trip Generation	44	30	74	43	35	78
B1-B6 Trip Generation w/o Hotel	343	316	659	365	442	807
Other Modes Reduction (35.8% of B1-B6 Trip Generation w/o Hotel)	123	113	236	131	158	289
Hotel Other Modes Reduction (10% of Hotel Trip Generation)	4	3	7	4	4	8
Total Other Modes Reduction	**127**	**116**	**243**	**135**	**162**	**297**

Development Block 7 (Marina)

Although the ITE does have a Marina category, the number of studies (2) is limited. Therefore, the trip generation for B7 was not determined using the ITE trip generation rates. Since a marina is such a unique facility, the trip generation was forecast based on the characteristics of this specific 220 slip marina. Applied Technology & Management (ATM), experts in marine and coastal engineering, provided the following information and assumptions:

- Peak weekday usage of the marina is forecast to be approximately 10% of the slips, but possibly greater since Maine's peak boating season is shorter than other less seasonal areas
- Approximately 36% of daily users are forecast to be transient boaters (80 transient boater slips out of 220 total slips)
- 10% of daily users who are not transient boaters are on-site residents
- 90% of daily users who are not transient boaters are off-site Portland residents
- 30% of off-site Portland residents are Islanders commuting to and from the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Based on the information from ATM, the following assumptions were made:

- Peak weekday usage will be 15% of the slips (33 slips). This is higher than the 10% identified by ATM and increased to 15% to account for the short season
- Transient boaters will not have a car on site since they arrive and depart using their boat, so they will not generate trip ends
- On-site residents will not enter or exit the site to visit the marina, so they will not generate any trip ends
- Each slip used by an off-site Portland resident who is not an islander will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each slip used by an Islander commuting to work will generate one trip end out during the AM peak hour and one trip end in during the PM peak hour
- Each employee will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each mega-yacht slip would be visited by a provisioning vehicle during both peak hours and the provisioning vehicles would enter and exit the site during the peak hour

Based on these assumptions, the forecast weekday peak hour trip generation for the marina is as follows:

- AM Peak Hour: 36 trip ends (26 in / 10 out)
- PM Peak Hour: 36 trip ends (10 in / 26 out)

The detailed trip generation calculations are attached in Appendix B.

Two reductions (shared use and other modes) were applied to the trip generation for B1-B6; however those reductions were not applied to the marina trip generation, as described in more detail as follows:

Shared Use

Although it is possible for marina visitors to eat at the restaurants or visit the shops on site, to be conservative it was assumed that the marina would be a primary destination and would have very few shared trips with the other uses.

Other Modes

Additionally, there is a possibility that marina users would use alternative modes of transportation to get to or from the site, but to be conservative we assumed that visitors would use cars and not another mode of transportation.

Total Site Trip Generation

The following table summarizes the adjusted site trip generation starting with the ITE trip generation and subtracting the shared use reduction as well as the other modes of transportation reduction and lastly adding the marina trip generation:

Adjusted Trip Generation Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 ITE Subtotal	387	346	733	408	477	885
Shared Use Adjustment	-51	-51	-102	-75	-75	-150
Other Modes Adjustment	-127	-116	-243	-135	-162	-297
B1-B6 Total	**209**	**179**	**388**	**198**	**240**	**438**
B7 Trip Generation	26	10	36	10	26	36
Site Total	**235**	**189**	**424**	**208**	**266**	**474**

As shown in the table, the proposed development is forecast to generate 424 trip ends during the AM weekday peak hour and 474 trip ends during the PM weekday

peak hour. To be conservative, this trip generation does not include any credit for existing on-site uses. This level of trip generation does require a MaineDOT Traffic Movement Permit because it is over 99 trip ends during the peak hour. The Traffic Movement Permit Application can be reviewed and issued by the City since they have delegated review authority.

VI. Trip Composition and Assignment

GP has assumed that all trips are primary in nature and made for the sole purpose of going to and from the site. The trip assignment has been based on the proposed accesses to the site, the site uses, and the traffic counts completed at the study area intersections. The study area was determined based on conversations with the City. The trip assignment has been separated into Residential and Non-Residential trip distributions. The trip assignments are categorized into Residential, Non-Residential, and Marina. The residential trip assignment assumes that the residents of the site know the neighborhood better than the non-residential site visitors, which would lead residents to use side streets more frequently, while the non-residents would use more major roads and posted routes. The marina trip assignment is assumed to follow the non-residential trip distribution. The trip distribution and assignment is shown on the attached Figures 6-11 in Appendix A.

VII. Postdevelopment Traffic Volumes

The predevelopment traffic volumes shown on Figure 5 have been combined with the total forecast traffic for the development shown on Figure 11 to yield the 2027 Postdevelopment DHV shown on the attached Figure 12 (Appendix A).

VIII. Capacity Analysis

GP completed capacity analyses for the study area intersections using the Synchro/SimTraffic computer analysis software. Level of service rankings are similar to the academic ranking system where an 'A' is very good with little control delay and an 'F' represents very poor conditions. At an intersection if the level of service falls below a 'D', an evaluation should be made to determine if mitigation is warranted.

The following tables summarize the relationship between the control delay and level of service:

Level of Service for Unsignalized Intersections and Roundabouts

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The capacity analyses were completed for two scenarios; first with the existing roadway geometry and the second with the approved proposed Franklin Street improvements. The City and MaineDOT approved the proposed Franklin Street design based on a study done by Gorrill Palmer. The City is responsible for implementing the proposed design and sections of Franklin Street are currently in the process of final design. The approved Franklin Street improvements in the 58 Fore Street study area include new intersection geometry and updated signal timing at the intersections of Franklin Street with Fore Street and Franklin Street with Middle Street, and the construction of a single lane roundabout at the intersection of Franklin Street with Commercial Street. The Synchro/SimTraffic software was also used to analyze the proposed roundabout. The following table is a summary of the capacity analysis results. The detailed analyses are attached in Appendix C.

Level of Service Summary

Approach	Existing Geometry				Proposed Franklin Street			
	2027 AM		2027 PM		2027 AM		2027 PM	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Franklin / Middle (S)								
Franklin SE	B	B	C	E	A	B	B	D
Franklin NW	B	B	B	C	A	A	B	B
Middle NE	B	B	C	C	C	C	B	C
Middle SW	B	B	B	B	C	C	B	B
Overall	B	B	C	D	B	B	B	C

Approach	Existing Geometry				Proposed Franklin Street			
	2027 AM		2027 PM		2027 AM		2027 PM	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Franklin / Fore (S)								
Franklin SE	B	B	C	C	B	B	B	B
Franklin NW	B	B	B	C	B	B	B	B
Fore NE	B	B	B	C	B	B	C	E
Fore SW	B	B	C	C	B	B	B	C
Overall	B	B	B	C	B	B	B	C
Franklin / Commercial (S) – Existing, (R) – Proposed								
Franklin EB	B	B	B	B	A	A	A	A
Maine State Pier WB	C	C	D	D	A	A	A	A
Commercial NB	B	B	B	B	A	A	A	A
Commercial SB	C	C	C	C	A	A	A	A
Overall	B	B	C	C	A	A	A	A
Commercial / Thames / India (U)								
Commercial EB	A	A	A	A	A	A	A	A
Thames WB	A	A	A	A	A	A	A	A
India SE	A	A	A	A	A	A	A	A
India / Fore (U)								
Fore EB	A	A	A	B	A	B	B	B
Fore WB	A	B	A	B	A	B	A	B
India SE	A	B	A	B	A	B	A	B
India NW	A	A	A	A	A	A	A	A
Hancock / Fore (U)								
Fore NB	A	A	A	A	A	A	A	A
Fore SB	A	A	A	A	A	A	A	A
Hancock SE	A	A	A	A	A	A	A	A
Hancock NW	A	A	A	A	A	A	A	A
Mountfort / Fore (U)								
Fore NE	A	A	A	A	A	A	A	A
Fore SW	A	A	A	A	A	A	A	A
Mountfort SE	A	A	A	A	A	A	A	A
Existing Driveways / Fore (U)								
Fore EB	A	N/A	A	N/A	A	N/A	A	N/A
Fore WB	A	N/A	A	N/A	A	N/A	A	N/A
100 Fore St NB	A	N/A	A	N/A	A	N/A	A	N/A
58 Fore St NW	A	N/A	A	N/A	A	N/A	A	N/A
Proposed New Road / Fore (U)								
Fore EB	N/A	A	N/A	A	N/A	A	N/A	A
Fore WB	N/A	A	N/A	A	N/A	A	N/A	A
Proposed Road NB	N/A	A	N/A	A	N/A	A	N/A	A
Proposed New Road / Thames (U)								
Thames NE	N/A	A	N/A	A	N/A	A	N/A	A
Thames SW	N/A	A	N/A	A	N/A	A	N/A	A
Proposed Road SB	N/A	A	N/A	A	N/A	A	N/A	A

Approach	Existing Geometry				Proposed Franklin Street			
	2027 AM		2027 PM		2027 AM		2027 PM	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Waterville / Fore (U)								
Fore NE	A	A	A	A	A	A	A	A
Fore SW	A	A	A	A	A	A	A	A
Waterville SE	A	A	A	A	A	A	A	A
Site Driveway NW	N/A	A	N/A	A	N/A	A	N/A	A
Congress / India (S)								
Congress NE	B	B	C	C	B	B	C	C
Congress SW	A	A	B	B	A	A	B	B
India NW	B	B	D	C	B	B	D	C
Overall	B	B	C	C	A	B	C	C
Washington / Congress / Mountfort (S)								
Congress NE	A	A	C	B	A	A	B	B
Congress SW	B	B	C	B	B	C	C	B
Mountfort NB	B	B	C	B	C	B	C	B
Washington SB	A	A	B	B	A	A	B	B
Overall	B	B	C	B	A	B	B	B
Cumberland / Washington (S)								
Cumberland NE	B	B	B	B	B	B	B	B
Cumberland SW	B	B	B	B	B	B	B	B
Washington NB	B	B	B	B	B	B	B	B
Washington SB	A	B	D	C	B	B	D	C
Overall	A	B	C	B	B	B	C	B

*(S) = Signalized, (U) = Unsignalized, (R) = Roundabout

As shown in the table, the study area intersections are forecast to operate at or above level of service 'D' after the development is completed, with the exception of the Fore Street eastbound approach of the intersection of Franklin Street with Fore Street and the Franklin Street southbound approach of the intersection of Franklin Street with Middle Street. These approaches are forecast to operate at a level of service 'E' during the 2027 Postdevelopment PM peak hour. It may be improved with adjustments to the intersection timing; however since the intersection is part of the proposed Franklin Street improvements, changes to the timing were not made for this analysis. Any adjustments to intersection timing would need to consider the platooning of Franklin Street traffic. It should be noted that at the intersections of India Street with Congress Street, Congress Street with Mountfort Street and Washington Avenue, and Washington Avenue with Cumberland Avenue the levels of service are forecast to increase after the development is completed. This increase is due to updated signal timing for those three intersections in the postdevelopment conditions. Please note that the existing timing and phasing of the two intersections of India Street with Congress Street and Congress Street with Mountfort Street / Washington Avenue include an exclusive pedestrian phase. This phase was not included in the analysis, but

if actuated, will cause the intersections to operate at a lower level of service. This is common in a downtown area where signals include an exclusive pedestrian phase.

Although the capacity analysis shows that the study area intersections are forecast to operate at acceptable levels of service with the existing geometry, it should be noted that observations of the Franklin Street intersections identified that during the PM peak hour queueing on northbound Franklin Street was significant. This queuing resulted in inefficiencies in the upstream intersections such that they operated at very low levels of service.

IX. Sight Line Evaluation

Both the City of Portland and MaineDOT have guidelines for sight distances. The City's sight distance criteria is the same as MaineDOT. The basic sight line standards are as follows.

Standards for Sight Distance

Posted Speed (mph)	MaineDOT Required (ft)	City of Portland Required
25	200	200
30	250	250
35	305	305
40	360	360
45	425	425

MaineDOT and the City measure sight distance using the same methodology. GP has evaluated the available sight lines in accordance with MaineDOT / City standards.

The evaluation method is as follows:

Driveway observation point:	10 feet off edge of travel way
Height of eye at driveway:	3 ½ feet above ground
Height of approaching vehicle:	4 ¼ feet above ground

Speed limits on Fore Street are posted 25 mph, which requires a MaineDOT and City sight distance of 200 feet.

GP measured the sight distance at the proposed site accesses on Fore Street. The following table summarizes the measured sight distances:

Sight Distance Summary

	Posted Speed (mph)	Looking Left (ft)	Looking Right (ft)	MaineDOT Required (ft)	City Required (ft)
Driveway onto Fore	25 mph	300+	300+	200	200
Proposed Road onto Fore	25 mph	250	300+	200	200

As shown in the table, the sight distances exceed MaineDOT and City requirements. It should be noted that the sight distances exiting the proposed site driveway onto Fore Street assume the removal or relocation of on-street parking spaces on either side of the site driveway within the sight triangle. Additionally, the sight distance looking left from the proposed road onto Fore Street could be improved by relocating the Hamilton Marine sign further from the edge of the road.

X. Crash Data

GP obtained the crash data (attached in Appendix D) from MaineDOT for the period of 2013-2015, the most recent period available at the time this study was prepared. In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average) **and**:

2. A minimum of eight crashes over the same three-year period

Based on the crash data provided by MaineDOT there are two high crash locations within the study area; one at the intersection of Franklin Street with Middle Street, and one on Fore Street from its intersection with India Street to its intersection with Mountfort Street. It should be noted that there were two locations that did not meet the HCL criteria, but were close. The intersection of India Street with Fore Street has a CRF of 1.60 and experienced seven collisions during the most recent three-year period and Cumberland Avenue from Boyd Street to Locust Street has a CRF of 4.13 and experienced seven collisions over the most recent three-year period. The intersection of India Street with Fore Street was previously identified as an HCL based on 2012-2014 crash data, but there were fewer crashes during the 2013-2015 period, so it no longer meets both HCL criteria.

To better evaluate the high crash locations and identify correctable crash patterns, the police reports for these locations were requested from MaineDOT and collision diagrams were created (attached in Appendix D). The two locations are described in more detail as follows:

Franklin Street / Middle Street

The intersection of Franklin Street with Middle Street has a CRF of 1.08 and experienced 20 crashes over the most recent three-year period. It is a four legged signalized intersection. Based on a review of the collision diagram all 20 collisions involved vehicles turning left from Franklin Street onto Middle Street colliding with vehicles traveling in the opposite direction of Franklin Street. This occurs in both the Franklin Street northbound and southbound directions, but 16 of the collisions involved southbound left-turning vehicles and northbound through vehicles. Of those 16 collisions, six occurred because the left-turning vehicle could not see the northbound through vehicle due to a snowbank in the median blocking the sight distance. Increased winter maintenance, specifically snow removal, could improve the sight distance at the intersection during winter months, providing left-turning vehicles with a clear view of oncoming traffic.

Fore Street from India Street to Mountfort Street

This section of Fore Street has a CRF of 2.12 and experienced nine crashes over the most recent three-year period, seven of which occurred at the intersection of Fore Street with Hancock Street. The intersection of Fore Street with Hancock Street is stop controlled with stop signs on Hancock Street and free flowing traffic on Fore Street. Based on a review of the collision diagram there does not appear to be a clear and correctable crash pattern. Most collisions at the intersection of Hancock Street with Fore Street were caused by a driver failing to yield the right of way.

XI. Existing Pedestrian, Bicycle, and Transit Infrastructure

One of the benefits of being located in a downtown area is that there is a complete network of sidewalks in the vicinity of the site. The Eastern Promenade Trail runs through the 58 Fore Street development. This pedestrian and bicycle trail connects the site to a 70-mile trail network. Fore Street has sidewalks on both sides that extend west into Downtown Portland and east toward the Eastern Promenade. The sidewalks are in adequate condition, however there are utility poles and sign posts on the south side of Fore Street are located within the sidewalk, which decreases the sidewalk width. As part of the 58 Fore Street development, the sidewalk on Fore

Street in front of the site will be rebuilt. It is recommended that any new sidewalks be constructed to meet ADA requirements.

The site is located within a 3-8 minute walk to several METRO bus stops. It is also approximately a five minute walk from the Ocean Gateway Pier and approximately a ten minute walk from the Maine State Pier, where the Casco Bay Lines Ferry Terminal is located. These bus stops and piers have a continuous network of sidewalks connecting them to the site.

Overall, the existing pedestrian, bicycle, and transit infrastructure is adequate.

XII. Conclusions and Recommendations

The following is a summary of the conclusions and recommendations based on the information and analyses presented in this study:

1. The proposed mixed use development is forecast to generate 424 trip ends during the weekday AM peak hour and 474 trip ends during the weekday PM peak hour. This level of trip generation requires a MaineDOT traffic movement permit. The Traffic Movement Permit Application can be reviewed and the permit issued by the City since they have delegated review authority.

2. The capacity analyses show that the study area intersections are forecast to operate at acceptable levels of service for almost all scenarios once the development is completed and occupied. The exception is the eastbound Fore Street approach of the intersection of Fore Street with Franklin Street and the southbound Franklin Street approach of the intersection of Middle Street with Franklin Street, which are forecast to operate at a level of service 'E' during the 2027 PM Postdevelopment condition. However, a slight change in timing at the intersections may improve the level of service.

3. The sight distances exceed MaineDOT and City requirements at the proposed new road connecting Fore Street to Thames Street Extension and at the proposed site driveway onto Fore Street, provided on-street parking within the sight triangle on either side of the proposed driveway is removed or relocated.

4. The crash data shows that there are two high crash locations in the study area. Based on a review of the collision diagrams there is no clear correctable crash pattern on Fore Street from India Street to Mountfort Street, but there is a crash pattern of left turning vehicle colliding with through vehicles at the

intersection of Middle Street with Franklin Street. The traffic from this development is not anticipated to significantly impact this crash pattern.

5. The existing pedestrian, bicycle, and transit infrastructure is adequate, except the utility poles and signs located within the sidewalks along the south side of Fore Street, which is proposed to be rebuilt as part of this project. The site is surrounded by a continuous sidewalk network, located within a 3-8 minute walk from METRO bus stops and a 5-10 minute walk from the two closest piers, and the Eastern Promenade bicycle and pedestrian trail runs through the site.

Appendix A

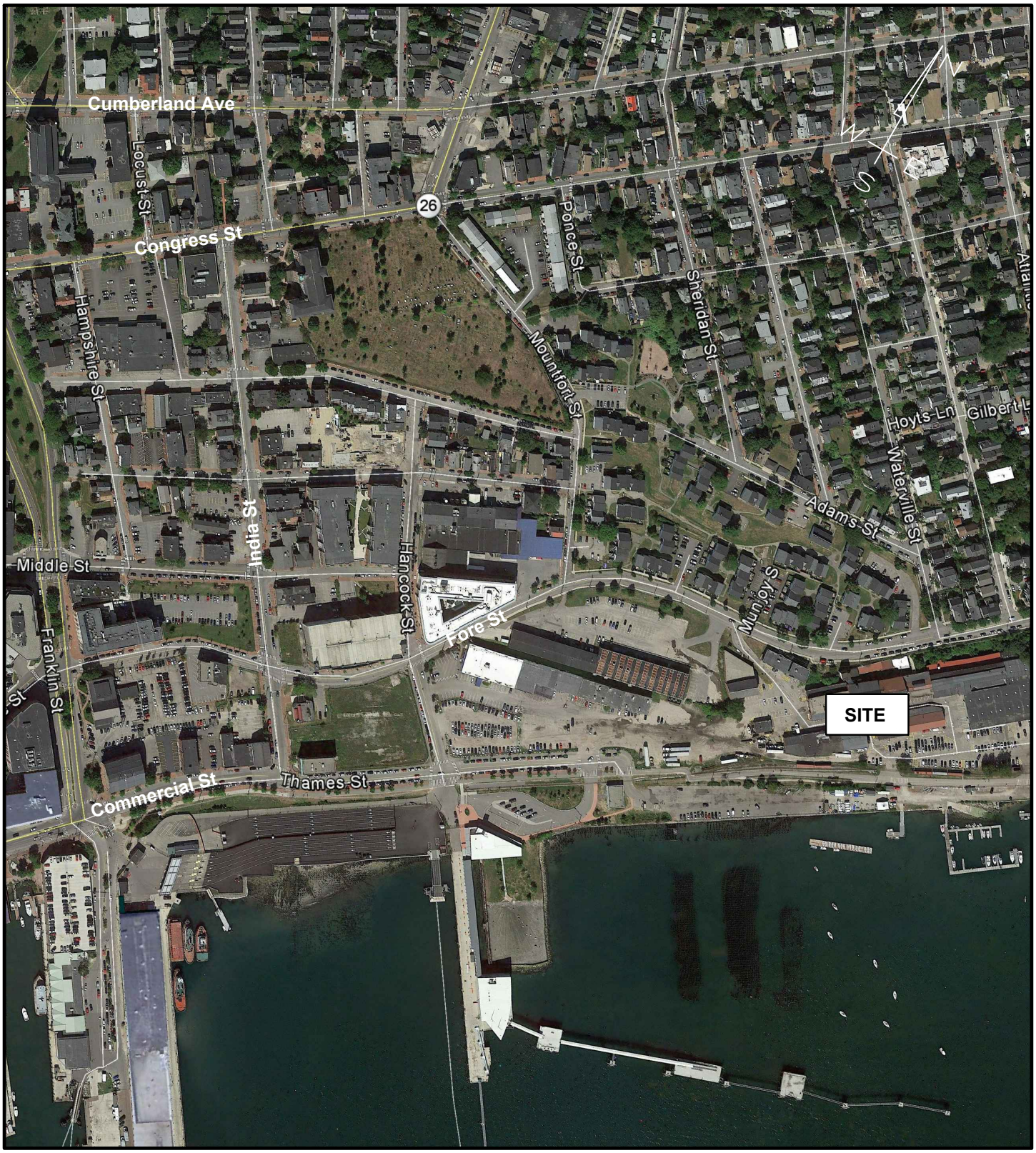
Location Map

Turning Movement Diagrams

Other Development Figure

Location Map

Figure No. 1



58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

Design:	ET	Scale:	NONE
Draft:	LAN	Date:	OCT 2015
Checked:	RED	File Name:	3138-TRAFF.dwg

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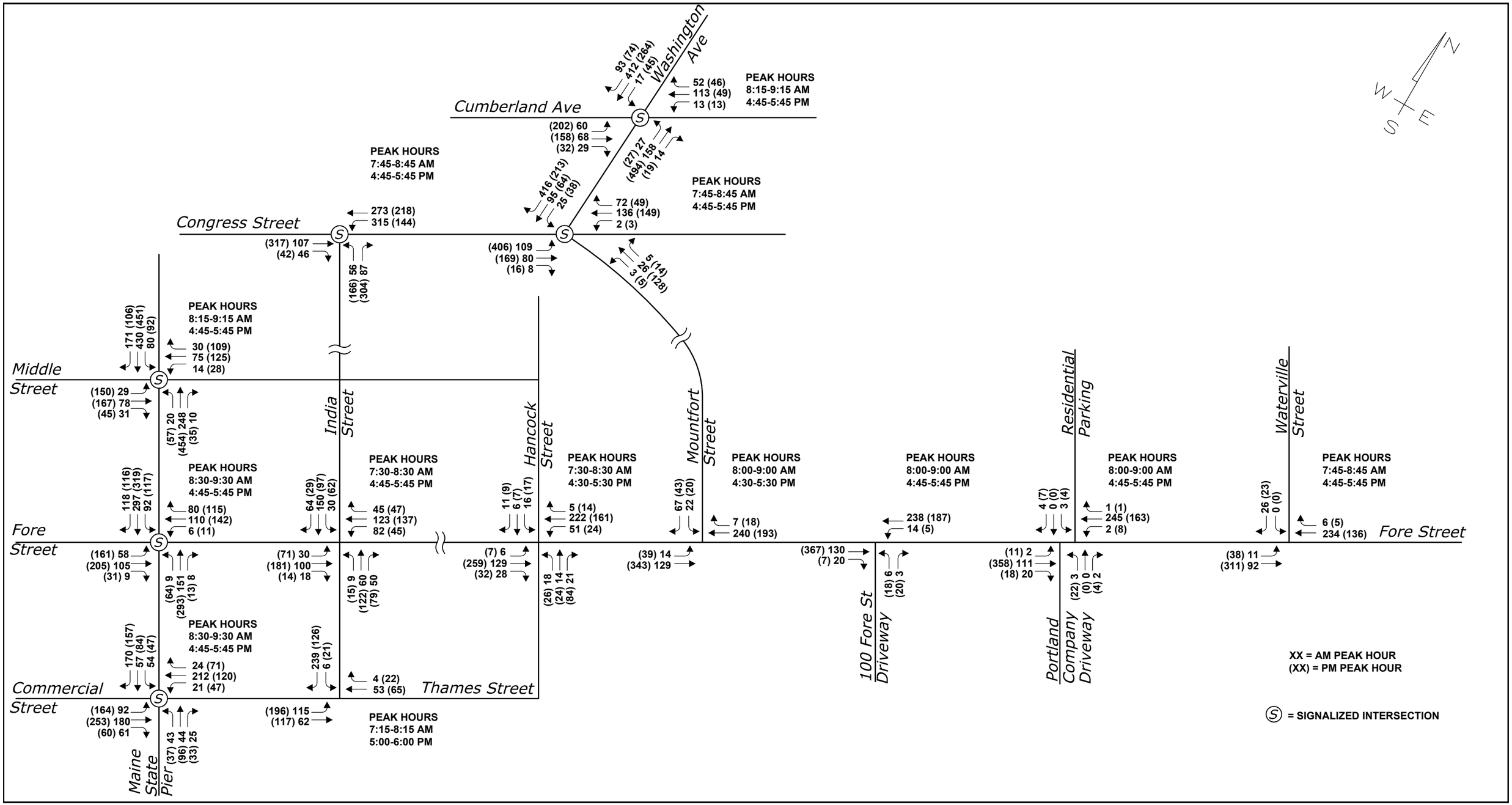
Raw Volumes

Figure No. 2



58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

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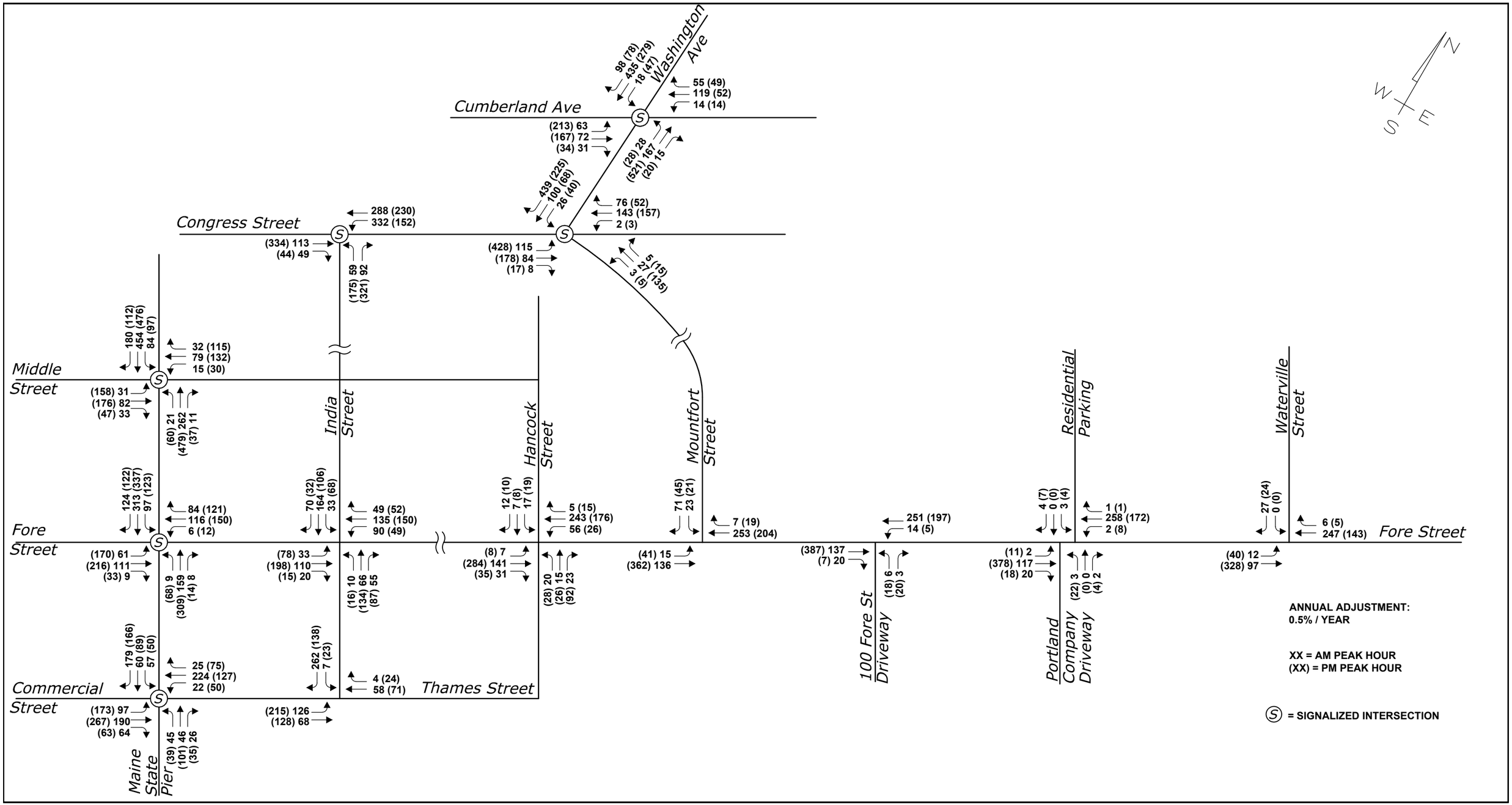
2027 Adjusted Volumes

Figure No. 3



58 FORE STREET REDEVELOPMENT
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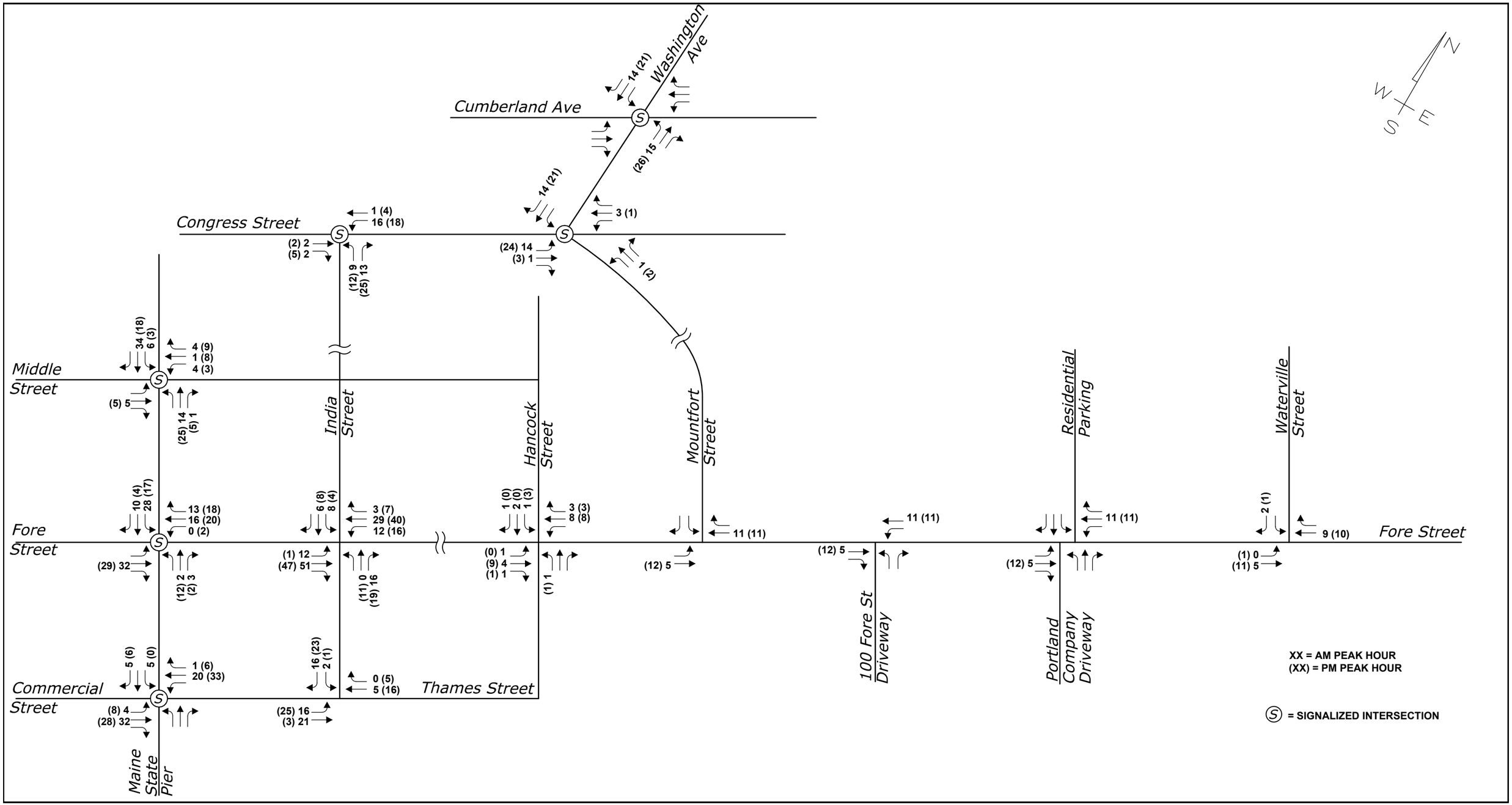
Other Development

Figure No. 4



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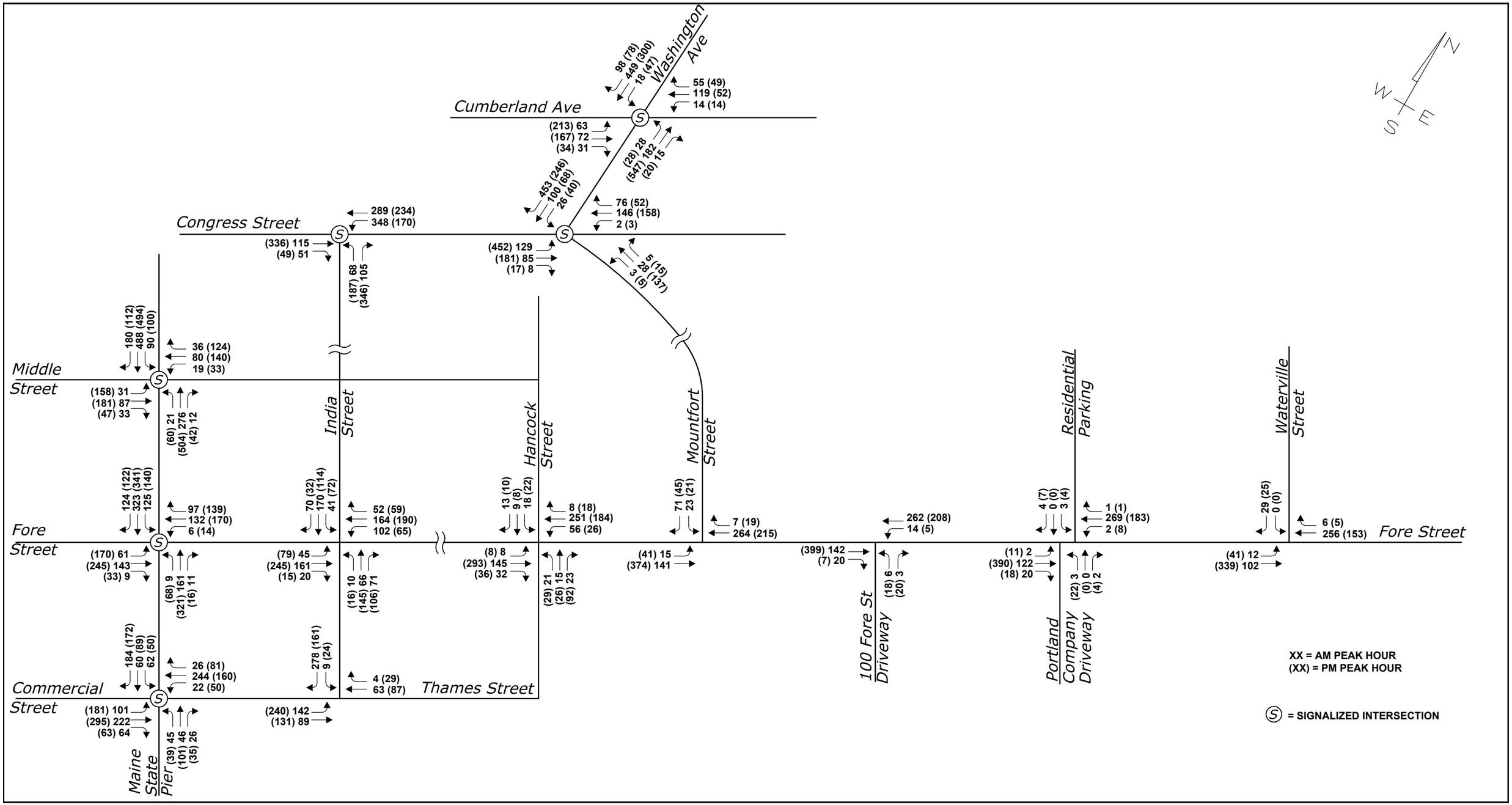
2027 Predevelopment DHV

Figure No. 5



58 FORE STREET REDEVELOPMENT
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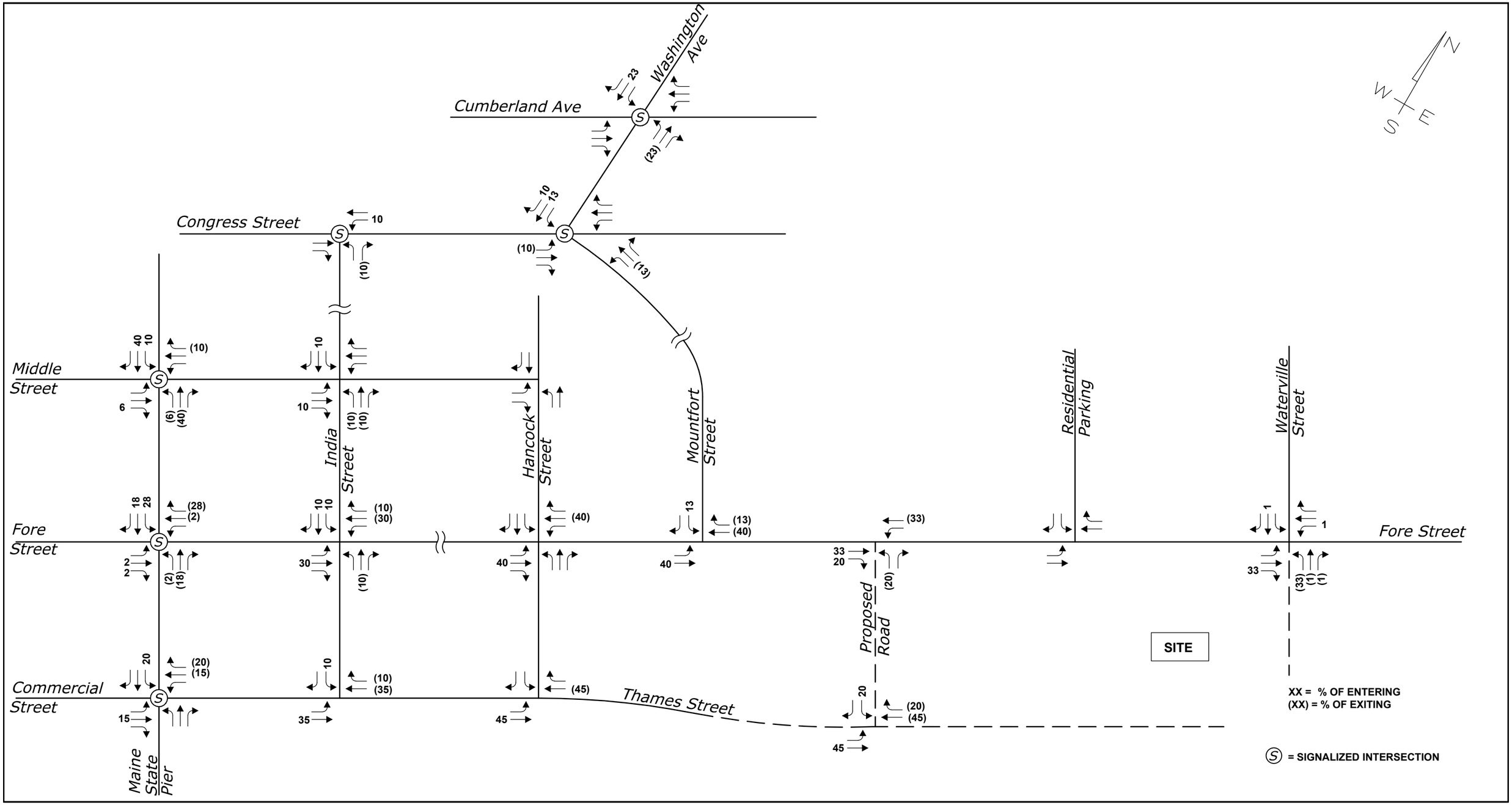
Residential Trip Distribution

Figure No. 6



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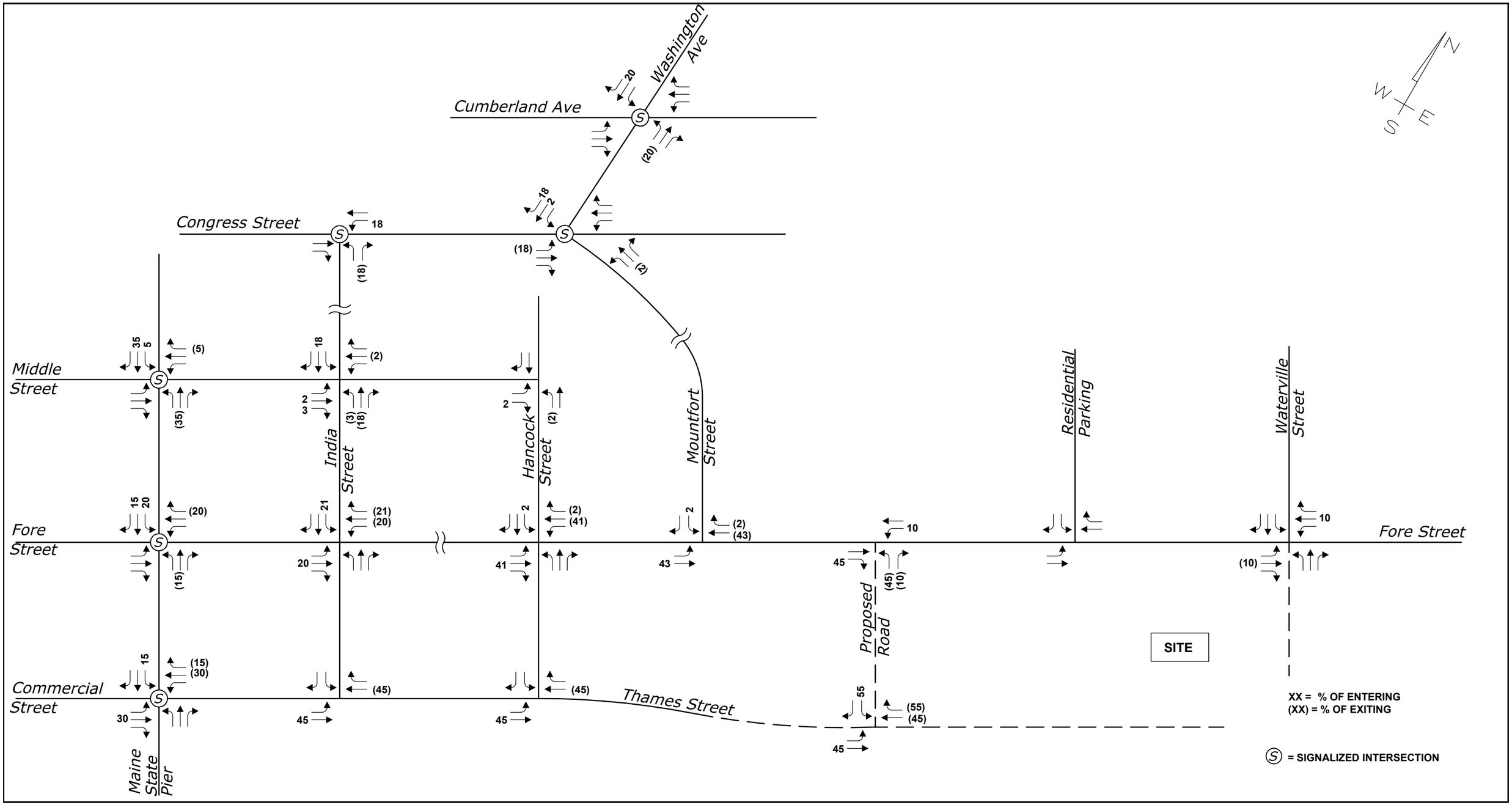
Non-Residential Trip Distribution

Figure No. 7



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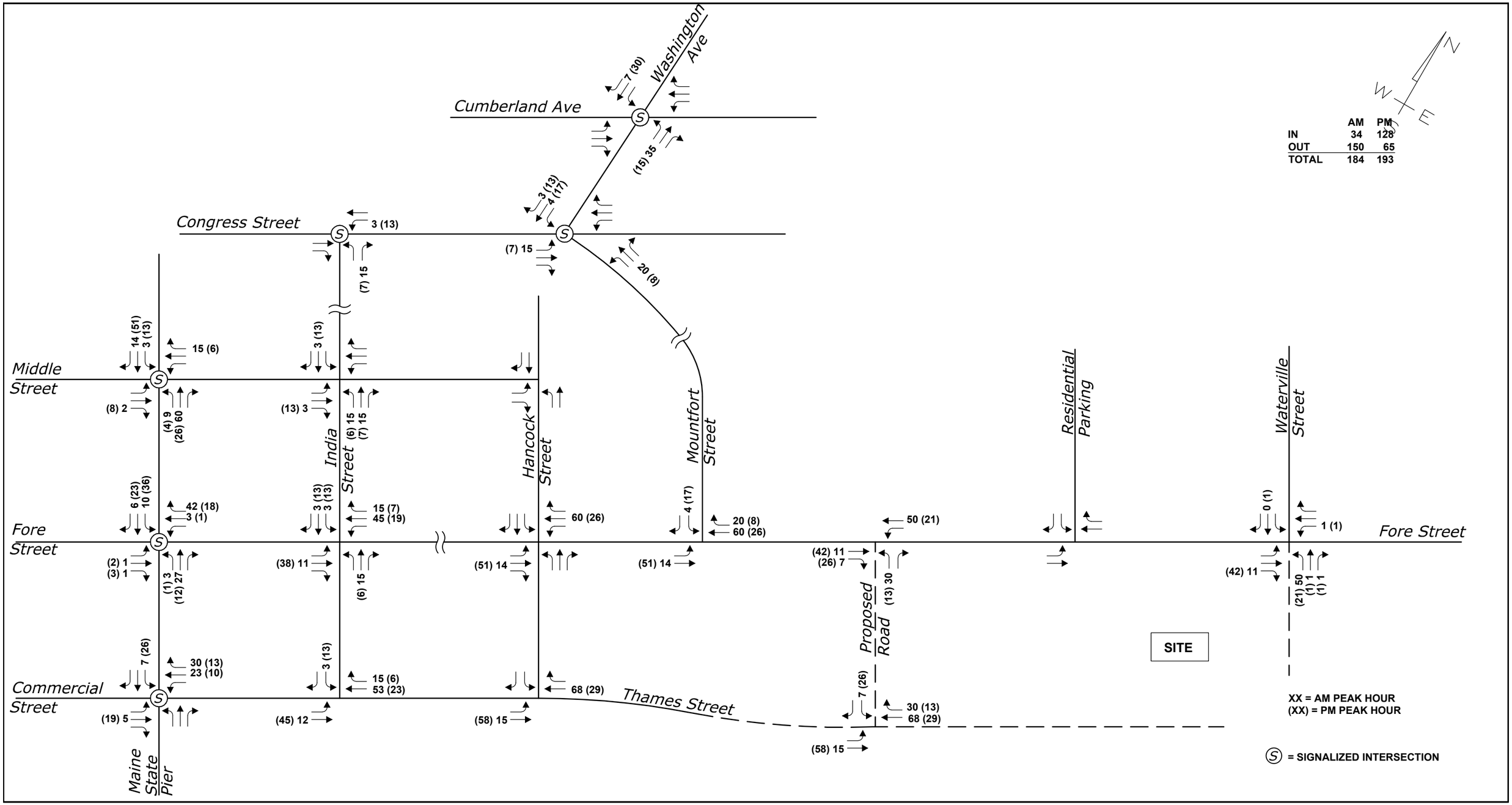
Residential Trip Assignment

Figure No. 8



	AM	PM
IN	34	128
OUT	150	65
TOTAL	184	193

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

(S) = SIGNALIZED INTERSECTION

58 FORE STREET REDEVELOPMENT
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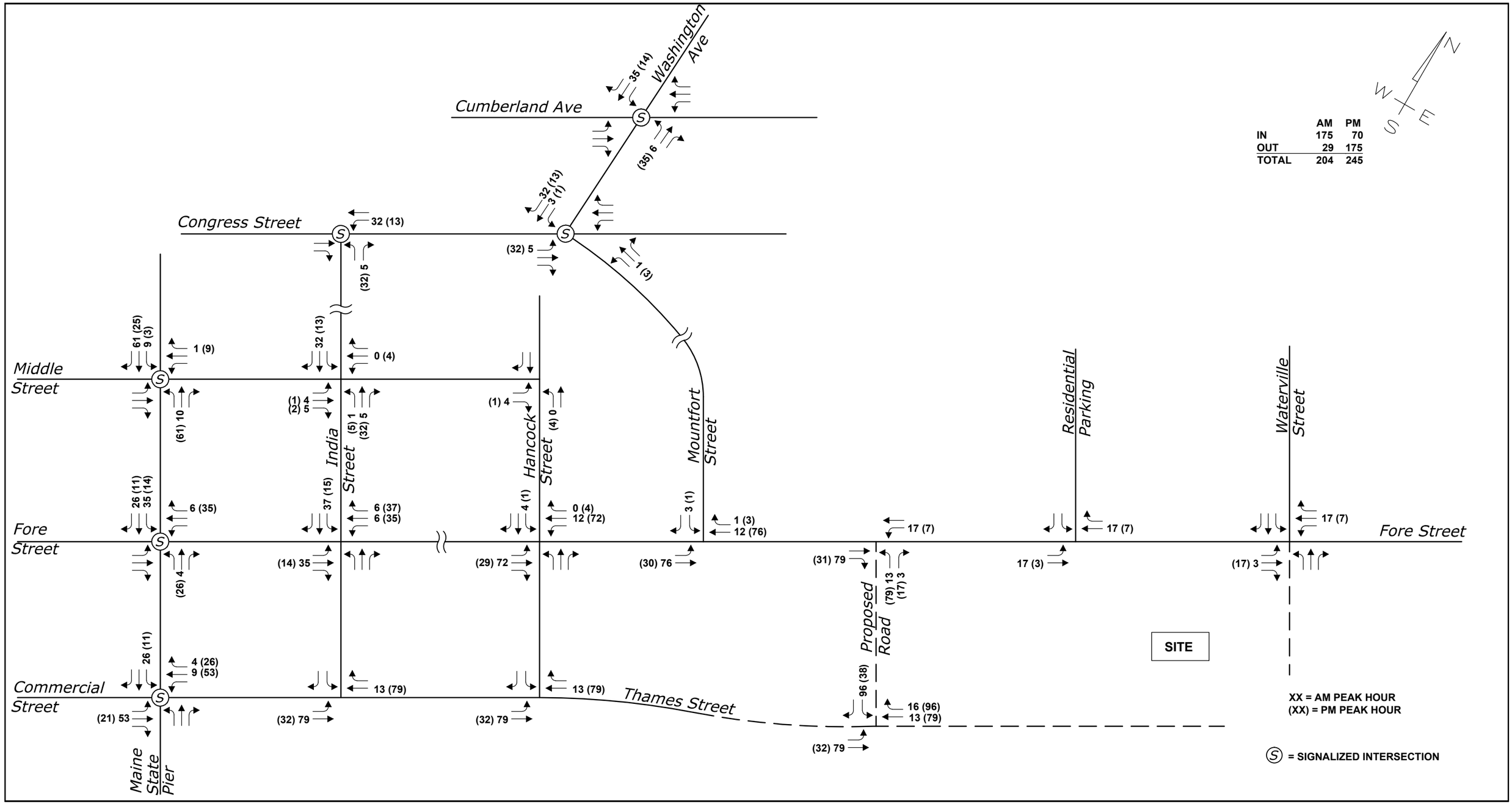
Non-Residential Trip Assignment

Figure No. 9



	AM	PM
IN	175	70
OUT	29	175
TOTAL	204	245

58 FORE STREET REDEVELOPMENT
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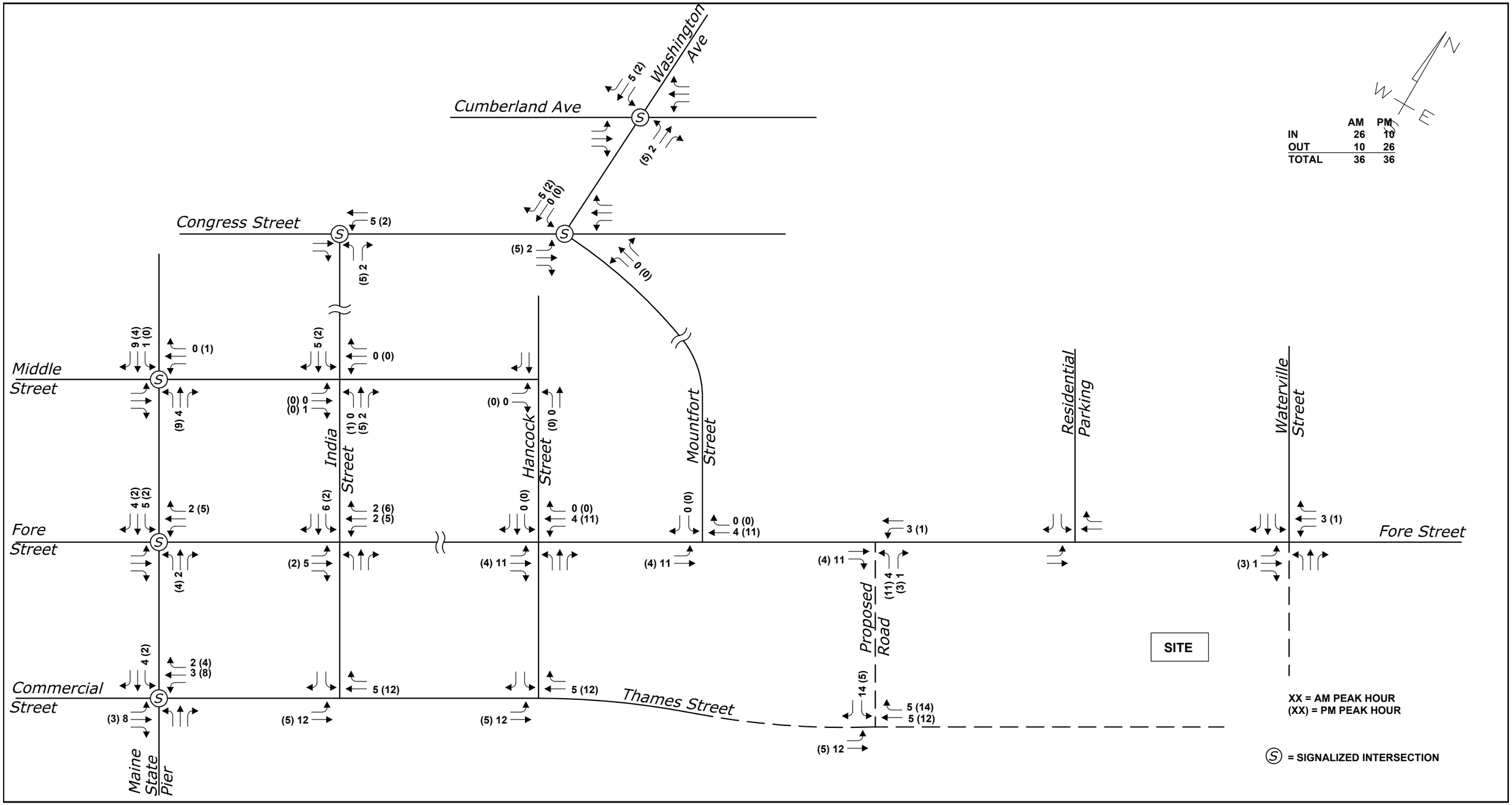
Marina Trip Assignment

Figure No. 10



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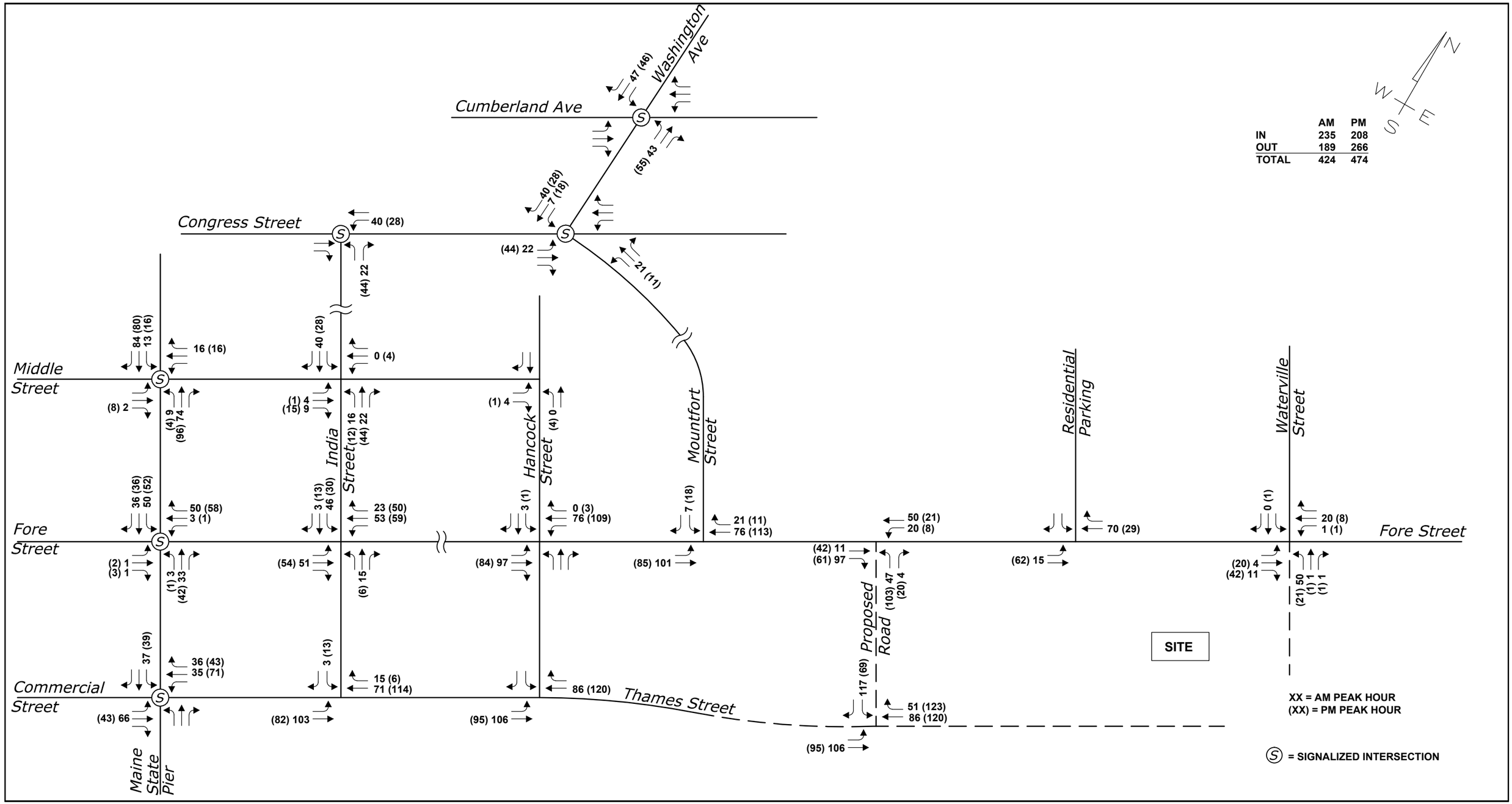
Total Trip Assignment

Figure No. 11



	AM	PM
IN	235	208
OUT	189	266
TOTAL	424	474

58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

Design: ET
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Scale: NONE
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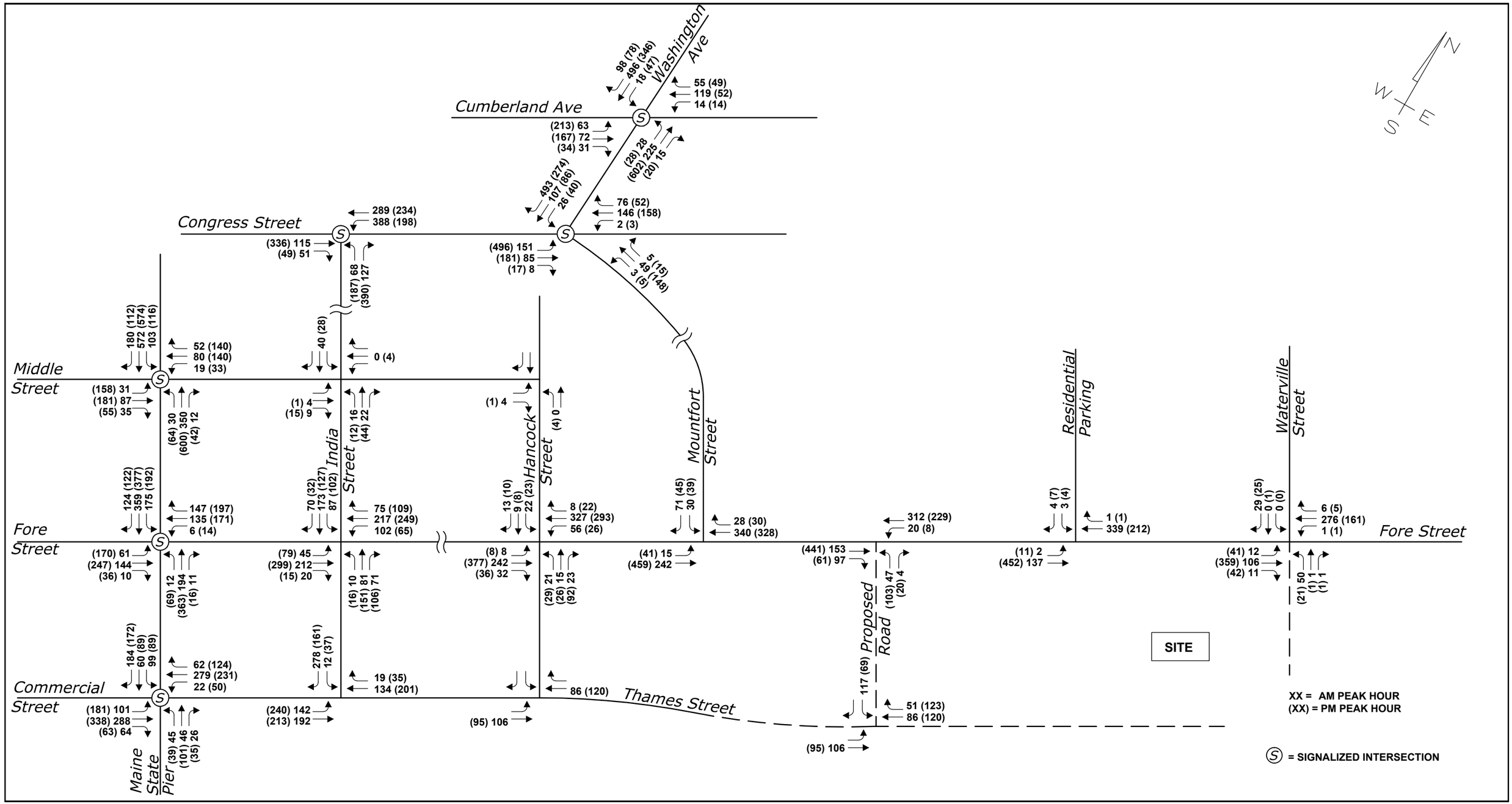
2027 Postdevelopment DHV

Figure No. 12



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Other Development

PORTLAND COMPANY
PORTLAND, MAINE

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Appendix B

ITE Trip Generation Calculations

NCHRP Spreadsheets

Commute Data Maps

Site Parking Demand Memo

Marina Trip Generation Calculations

58 Fore Street Trip Generation Summary
Portland, Maine
September 2, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
	Retail	814 - Specialty Retail	4,000	SF		3	60%	40%	2	1	11	45%	55%	5	6
					B4 Total:	**143**	**21%**	**79%**	**30**	**113**	**182**	**64%**	**36%**	**116**	**66**
B5															
	Residential	230 - Residential Condominium/Townhouse	108	Dwelling Units		48	15%	85%	7	41	56	65%	35%	36	20
	Hotel	310 - Hotel	132	Rooms		74	60%	40%	44	30	78	55%	45%	43	35
	Restaurant	932 - High Turnover (Sit Down) Restaurant	3,800	SF		44	50%	50%	22	22	41	60%	40%	25	16
					B5 Total:	**166**	**44%**	**56%**	**73**	**93**	**175**	**59%**	**41%**	**104**	**71**
B6															
	Residential	230 - Residential Condominium/Townhouse	131	Dwelling Units		58	15%	85%	9	49	68	65%	35%	44	24
	Residential	220 - Apartment	14	Dwelling Units		7	20%	80%	1	6	9	65%	35%	6	3
					B6 Total:	**65**	**15%**	**85%**	**10**	**55**	**77**	**65%**	**35%**	**50**	**27**
B7															
	Marina Facilities	N/A	2,600	SF		36	72%	28%	26	10	36	28%	72%	10	26
					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
					Site Total:	**769**	**54%**	**46%**	**413**	**356**	**921**	**45%**	**55%**	**418**	**503**

		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
	B1-B6 Subtotal:	733	53%	47%	387	346	885	46%	54%	408	477
	NCHRP 684 Reduction:	102	12%	14%	51	51	150	18%	15%	75	75
35.8%	Other Modes Reduction:	236	35.8%	35.8%	123	113	289	35.8%	35.8%	131	158
10%	Hotel Other Modes Reduction:	7	57%	43%	4	3	8	50%	50%	4	4
	B1-B6 Total:	**388**	**54%**	**46%**	**209**	**179**	**438**	**45%**	**55%**	**198**	**240**
	Marina Total	36	72%	28%	26	10	36	28%	72%	10	26
	Site Total	**424**	**55%**	**45%**	**235**	**189**	**474**	**44%**	**56%**	**208**	**266**

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	268	242	26
Retail	814	50,273	SF	38	23	15
Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]	N/A	2,600	SF	36	26	10
Total				769	413	356

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	769	413	356
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips[3]	667	362	305
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	38	38		1.00	220	220
Retail	1.00	61	61		1.00	75	75
Restaurant	1.00	25	25		1.00	16	16
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	241	241		1.00	131	131
Hotel	1.00	43	43		1.00	35	35

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		44	9	0	4	0
Retail	2		22	3	20	4
Restaurant	0	7		1	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	55	28	0		4
Hotel	0	6	24	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	10	0
Retail	12		7	0	111	7
Restaurant	11	31		0	39	31
Cinema/Entertainment	2	2	1		10	0
Residential	22	6	4	0		5
Hotel	0	1	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	31	38		31	0	0
Retail	19	42	61		42	0	0
Restaurant	13	12	25		12	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	27	214	241		214	0	0
Hotel	9	34	43		34	0	0
All Other Land Uses[3]	0	10	10		10	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	210	220		210	0	0
Retail	33	42	75		42	0	0
Restaurant	11	5	16		5	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	19	112	131		112	0	0
Hotel	2	33	35		33	0	0
All Other Land Uses[3]	0	26	26		26	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

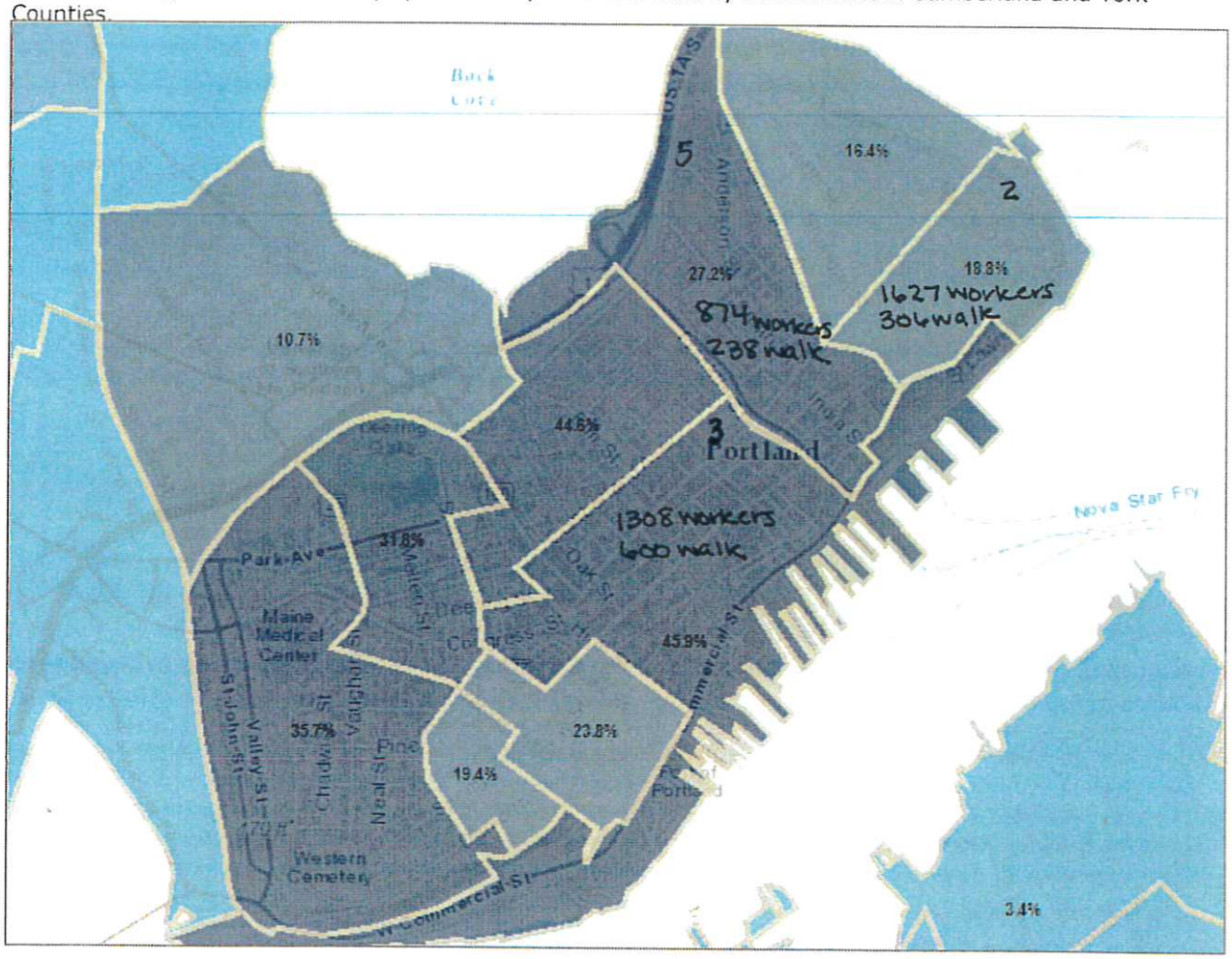
[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Walked

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

3809 Workers
1144 Walk

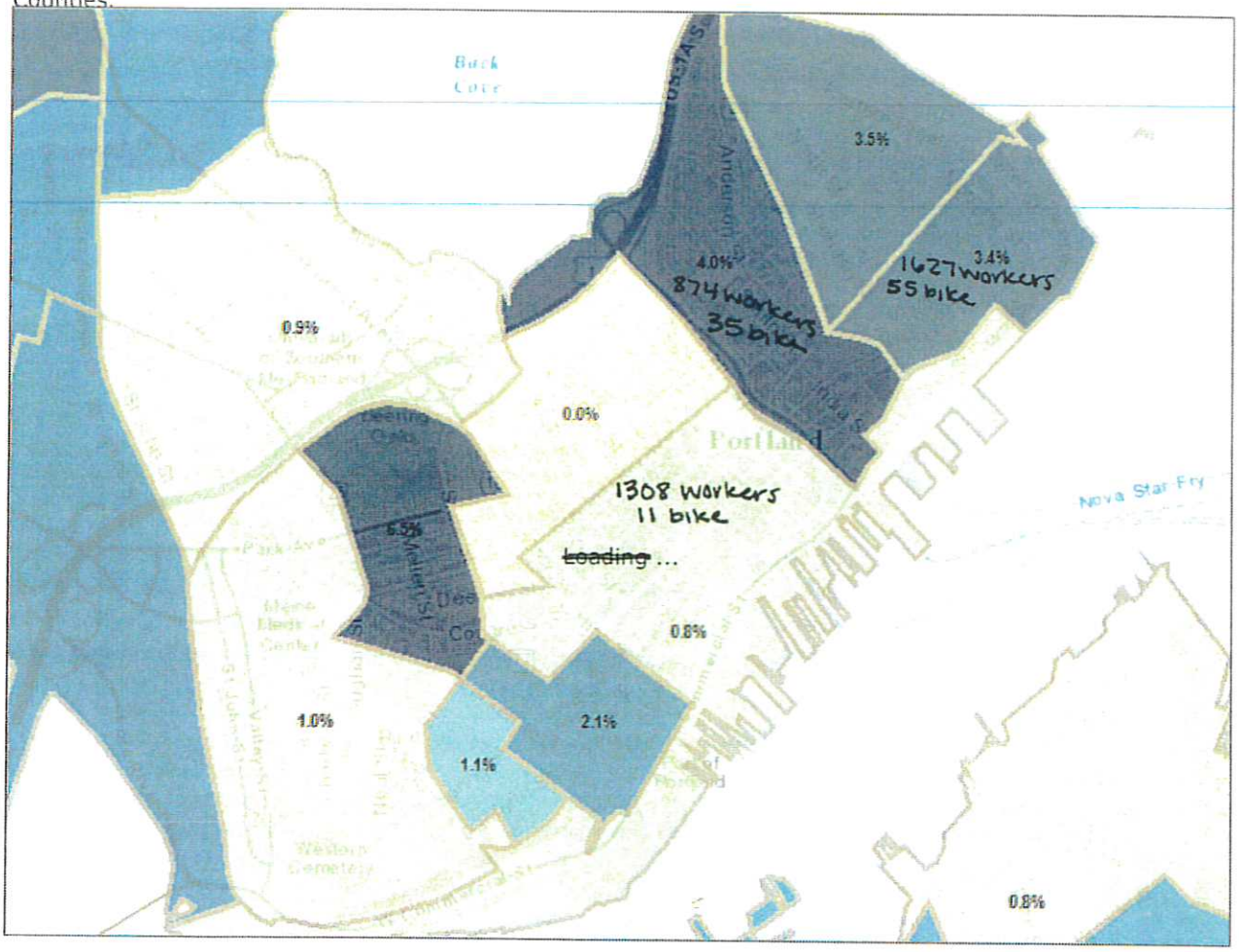
30.0% walk

Walk/Bike/Transit
30.0 + 2.7 + 3.1 = 35.8%

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Biked

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

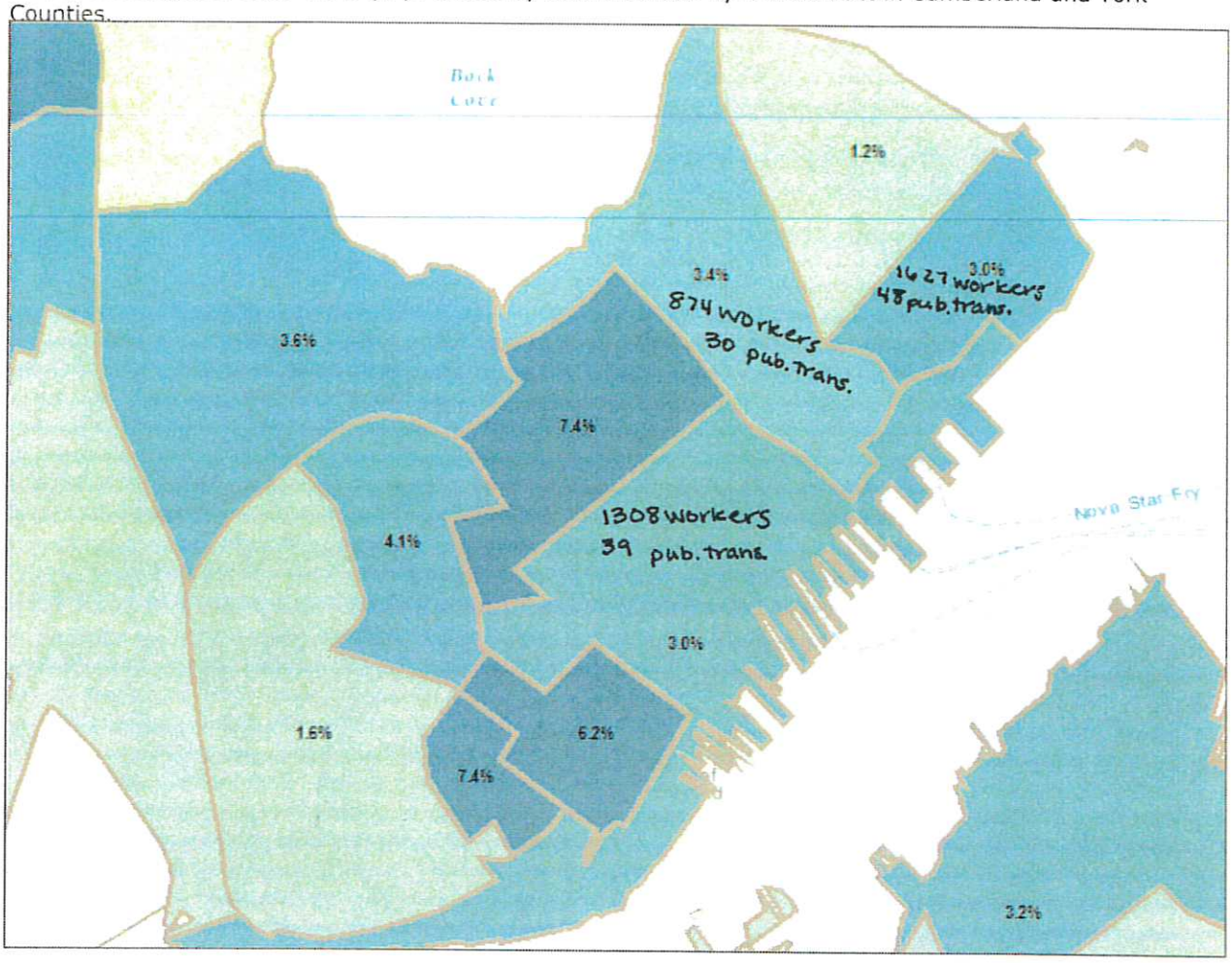
3809 Workers
101 Bike

2.7% Bike

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Public Transportation

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

3809 Workers
117 Public Transportation

3.1% Public Transportation

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Site Parking Demand
58 Fore Street Mixed Use Development
Portland, Maine
JN 3138

Date: September 16, 2016
Subject: Site Parking Demand
58 Fore Street Mixed Use Development
To: David Senus, Mary McCrann, Jim Brady, Kevin Costello, Casey Prentice
From: Randy Dunton and Emily Tynes, Gorrill Palmer (JN 3138)

The following is a summary of the estimated parking demand for the proposed mixed use development at 58 Fore Street. The following table summarizes the sizes and uses of the proposed development used to calculate the parking demand:

Proposed Site Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

It should be noted that the retail portions of the proposed site will be multiple smaller shops, not large retail stores.

Parking Demand Calculation Methodologies

The parking demand has been determined using two methodologies: using the City Ordinance requirements and based on a shared parking demand. The following summarizes the methodologies in more detail:

City Ordinance Parking Demand

The Ordinance requirement methodology involves calculating the peak parking demand for each use using the City of Portland Code of Ordinances. This method assumes each use is isolated and then adds the individual demands to determine the parking demand for the site. The supporting calculations for this method are attached. This method results in an overestimate because the peak demands for each use are not expected to occur at the same time. For example, offices require more spaces during the day while employees are in the office, and residential buildings would require more spaces later at night when residents are home from work.

The City Ordinance Ch. 14, Art III, Div. 20, Sec. 14-332.2 (c) states, "where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer." Since this mixed use development is approximately 958,679 sf of building floor area, it meets the criteria. Therefore, the site parking demand was determined based on the following methodology.

Shared Parking Plan

The shared parking plan methodology is based on a combination of City Ordinance parking demand, the ITE Parking Generation Manual (4th Edition), and published data / engineering judgement and it reflects that the demand for different uses will peak during different times of day. Since different uses do not peak at the same times, parking spaces can be shared between uses. To determine the shared parking demand, the total parking demand was calculated for each use, then distributed throughout the day based on the type of use. This is the same methodology used for the recent Thompson's Point project. The supporting calculations are attached. With a shared parking plan it is recommended that shared parking language be included in the leases, to ensure tenants understand the shared parking.

Parking Demand Reductions

Given the mixed use of the site as well as its downtown location, the following two parking demand reductions were applied to the shared parking spaces:

Shared Use Reduction

When evaluating a mixed use development with complementary uses such as this, the overall parking demand can be reduced due to the expectation that there will be some cross use between the individual facilities. For instance, it can be assumed that some of the people living in the apartments would also be those that visit the retail. Gorrill Palmer (GP) used the NCHRP 684 Internal Trip Capture Estimation Tool to calculate the reduction that can be applied to the trip generation. This calculated an internal trip capture of 14% for the AM peak hour and 17% for the PM peak hour. It can be assumed that parking demand can be reduced proportionally to the reduction in trip generation. To be conservative, GP used a shared use reduction of 14% throughout the day to estimate the parking demand. The following table summarizes the shared use reduction:

Shared Use Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand	919	690
Shared Use Reduction (14%)	-129	-97

Other Modes Reduction

The overall parking demand for a development in a downtown area can also be reduced due to the expectation that some people going to or from the site would use other modes of transportation such as transit, bicycle, or walking. The site is adjacent to an existing bus route as well as located on a bicycle and pedestrian path. The other modes reduction is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract. Based on this information Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, created maps using GIS data that illustrate the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to commute to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the individual tracts. This reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number

of working people in the same three Census Tracts. This calculation yields a 35.8% use of non-vehicular modes of transportation.

The GPCOG data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site. It was not clear if the 35.8% reduction would also be applicable to the restaurants and hotel, even though there are hotels and restaurants located within the boundaries of the three Census Tracts. GP searched for studies that included information on other modes of transportation for restaurants and hotels and found two sources that had information that could be compared to the other modes of transportation calculated using the Portland Census data. The following is a more detailed description of the relevant information found in the two studies:

The first study is *Contextual Influences on Trip Generation* (found in the United States Department of Transportation National Transportation Library online database or at the following link: http://ntl.bts.gov/lib/46000/46600/46699/CITG_FinalReport_Draft_10022012.pdf), a study for the Oregon Transportation Research and Education Consortium (OTREC) that compared the ITE predicted trip generation to the actual trip generation of 79 locations in Portland, Oregon, 39 of which were high turnover sit-down restaurants. The study also included surveying the visitors of those sites to determine what mode of transportation the visitors used. The results of the study are divided into different types of areas, ranging from central business district, which is considered the most urban area, to suburban areas, which is considered the least urban type of area surveyed. This study surveyed 12 restaurants in the central business district area and found that 35% of the patrons arrived to the sites using a car, while the remaining 65% walked, biked, or used transit (table attached). This result is higher than the 35.8% use of other modes calculated using the GPCOG information. Because the data is for Portland, Oregon it may not be appropriate to use as a reduction, but it does indicate that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

The second source that included restaurant information is the National Cooperative Highway Research Program (NCHRP) Report 758, *Trip Generation Rates for Transportation Impact Analyses of Infill Developments*. This study used information from the Household Travel Survey (HTS) for the San Francisco Bay area and Metropolitan Washington D.C. and counted data and surveys at specific sites in those areas. The Washington D.C. HTS data for restaurants shows that approximately 40.3% of residents use transit, walk, or bicycle to and from high-turnover sit-down restaurants (table attached). The study only included one site that was counted and surveyed, so the HTS data could not be verified, however like the Portland, Oregon study, it is higher than the other modes reduction calculated using the GPCOG Census information. Like the Portland, Oregon study, this data indicates that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

Based on these two additional sources that contain information specific to restaurant uses, GP determined that the other modes reduction of 35.8% calculated from the GPCOG Census

information that is based on the existing transit system can be applied to the restaurant parking demand. Although the other two studies showed higher percentages of people using alternative modes of transportation to go to or from restaurants, since they are not specific to Portland, Maine, the local data is expected to be closer to the actual conditions that would be seen at the 58 Fore Street development.

The two studies discussed above included information about restaurants, but did not have any data for hotels. Based on our research there is limited information available about modes of transportation used at hotels. It can be assumed for the 58 Fore Street site that hotel employees may take the bus, bike, or walk to get to and from work and some hotel guests may arrive by boat using the marina. To be conservative, GP only used an "other modes of transportation" reduction of 10% for the hotel.

The following table summarizes the other modes of transportation reduction for the site:

Other Modes of Transportation Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand w/o Hotel	886	677
Hotel Peak Parking Demand	33	13
Other Modes Reduction (35.8% of B1-B6 Demand w/o Hotel)	-317	-242
Hotel Other Modes Reduction (10% of Hotel Demand)	-3	-1
Total Other Modes Reduction	**-320**	**-243**

Marina Parking Demand

The City Ordinance does not include a parking requirement for marina facilities. The parking demand for the proposed marina is based on information from Applied Technology & Management (ATM). The new marina is proposed to have 220 slips that will service off-site Portland residents, on-site Portland residents, and transient boaters. ATM provided a range of parking rates from one space for every two slips to one space for every four slips. ITE has limited marina parking information available, however the ATM parking rates appear to be consistent with the ITE data. To be conservative, GP used a requirement of one parking space for every two slips. ATM expects peak usage of the marina to be 10% of the slips, but possibly higher since Maine has a shorter boating season. To be conservative, GP assumed that the peak demand would be 15% of the slips. ATM also stated that there would be approximately 9 employees at this marina, therefore GP included an additional 5% to include spaces for employees, giving a total peak demand estimation of 20% of the slips. Because of the nature of a marina use, the two parking demand reductions that were applied to the rest of the site were not applied to the

marina parking demand. Although it is possible that marina users visit other uses on site or use alternative modes of transportation to get to the site, to be conservative the reductions were not applied.

Dedicated Parking Spaces

Often in large developments, a portion of parking spaces are dedicated to a specific use. For example, residential units may have spaces assigned to each unit or a group of spaces may be reserved for use by only an office. These dedicated spaces would not be shared by any other site uses. The number of dedicated parking spaces is added to the number of shared parking spaces to determine the total site demand. On this site, there are 298 dedicated parking spaces proposed. These spaces include; half of the residential units in B1, all the residential units in B5, and all the residential units in B6. The two parking demand reductions that were applied to the rest of the site were not applied to the dedicated parking spaces, since the spaces will not be shared and will be provided for the peak demand regardless of the expected use of transit, bicycles, or walking.

Parking Demand Summary

The following table summarizes the overall parking demand for the site, including the reductions, based on both the Ordinance and the Shared Parking demand methodologies:

Parking Demand Summary

Proposed	Ordinance	Shared Parking
B1-B6 Shared Parking Demand	919	690
Shared Use Reduction	-129	-97
Other Mode Reduction	-320	-243
B1-B6 Total Shared Parking Demand	**470**	**350**
B7 (Marina) Parking Demand	110	22
B1-B7 Total Parking Demand	**580**	**372**
B1-B7 Dedicated Parking	298	298
Net Parking Demand	**878**	**670**

As shown in the table, the proposed parking demand, including reductions, based on the Ordinance and isolated uses is forecast to be 878 spaces and the parking demand based on shared parking is 670 spaces. The parking demand based on the City Ordinance is higher than the shared parking demand because it assumes all uses will require their peak parking demand concurrently whereas the shared parking demand considers the different uses peaking at different times of day.

It should be noted that a parking facility can be considered full when it is approximately 85% occupied. This is because a driver may not see empty parking spaces when the lot is almost completely occupied, especially in a larger parking area. **To ensure the peak parking demand is satisfied, the recommended number of spaces is 736 (372 spaces / 0.85 + 298 spaces).** This assumes that shared spaces are generally available to all users. The increase is not applied to the dedicated parking spaces because it is assumed that they will be visible and easy for the designated users to find.

The marina may also have additional parking needs, such as temporary parking spaces for visitors to drop off passengers or supplies near their boat before parking their vehicle and for fueling trucks and provisional vehicles that service the mega-yachts. These other parking spaces should be considered in addition to the estimated peak parking demand for the visitors and employees.

Bicycle Parking

Per City Ordinance, new uses are required to provide bicycle accommodations based on the type of use. Residential structures are required to provide 2 bicycle spaces for every 5 dwelling units. Non-residential structures are required to provide 2 bicycle parking spaces for every 10 vehicle parking spaces for the first 100 required spaces, plus one bicycle parking space for every 20 required vehicle parking spaces over the 100 vehicle parking spaces. The following table shows the required bicycle parking for the Ordinance vehicle parking demand and the Shared Parking demand:

Bicycle Parking Summary

	Ordinance	Shared Parking
Parking Variable	409 Spaces, 638 Units	322 Spaces, 638 Units
Residential Bicycle Spaces	256	256
Non-Residential Bicycle Spaces	36	31
Total	**292**	**287**

As shown in the table, the site will require 287-292 bicycle parking spaces to meet the City Ordinance Requirements for bicycle accommodations. The Transportation Demand Management (TDM) plan will outline a more detailed approach to incorporating bicycle parking on site.

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JOB 3138-58 Fore Street Redevelopment
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 8/26/16
CHECKED BY _____ DATE _____
SCALE _____

Marina Trip Generation

Info from ATM:

- 220 slips → 140 seasonal users, 80 transient boaters
- Daily usage peaks around 10%, maybe more
- 10% of daily non-transient users are on-site residents
- 90% of daily non-transient users are offsite residents
- 30% of off site residents are Islanders commuting to the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Assumptions:

- 15% of slips is peak daily usage to be conservative (33 slips)
- 36% are transient boaters (80/220 = 36% → 12 slips)
- 21 non-transient slips used during peak (33 slips − 12 slips)
- 2 on-site residents used slips during peak (21 × 0.10 = 2.1)
- 19 off-site residents use slips during peak (21 × 0.90 = 18.9)
- 6 Islanders commuting to Peninsula (19 × 0.30 = 5.7)
- 1 provisioning vehicle per mega-yacht slip (conservative)
- Transient boaters = 0 trip ends
- On-site residents = 0 trip ends
- Off-site residents = 1 AM trip end, 1 PM trip end
  - Islanders leave during AM and return during PM
  - Other off-site enter during AM and exit during PM
- Employees enter during AM and exit during PM
- Provisioning vehicles enter and exit during the peak hour (conservative)

AM Peak Hour	PM Peak Hour
- 9 employees in	- 9 employees out
- 6 Islanders out	- 6 Islanders in
- 13 seasonal in	- 13 seasonal out
- 4 provisional veh. in	- 4 provisional veh in
- 4 provisional veh. out	- 4 provisional veh out
36 trip ends (26 in / 10 out)	36 trip ends (10 in / 26 out)

Appendix C

Capacity Analysis Results

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4372	4255	4290	4256	4352	4303
Vehs Exited	4367	4259	4271	4246	4370	4301
Starting Vehs	80	85	67	76	91	75
Ending Vehs	85	81	86	86	73	78
Denied Entry Before	1	1	1	2	0	0
Denied Entry After	1	2	0	0	1	0
Travel Distance (mi)	1199	1181	1177	1180	1198	1187
Travel Time (hr)	78.5	76.6	77.1	76.8	79.0	77.6
Total Delay (hr)	33.5	32.1	32.9	32.1	33.8	32.9
Total Stops	5922	5903	5875	5873	6020	5918
Fuel Used (gal)	62.4	61.7	61.0	61.6	62.4	61.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4372	4255	4290	4256	4352	4303
Vehs Exited	4367	4259	4271	4246	4370	4301
Starting Vehs	80	85	67	76	91	75
Ending Vehs	85	81	86	86	73	78
Denied Entry Before	1	1	1	2	0	0
Denied Entry After	1	2	0	0	1	0
Travel Distance (mi)	1199	1181	1177	1180	1198	1187
Travel Time (hr)	78.5	76.6	77.1	76.8	79.0	77.6
Total Delay (hr)	33.5	32.1	32.9	32.1	33.8	32.9
Total Stops	5922	5903	5875	5873	6020	5918
Fuel Used (gal)	62.4	61.7	61.0	61.6	62.4	61.8

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	6.4	7.2	5.3	5.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	6.8	8.0	8.4	6.1	7.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.3	1.1	5.8	6.2	2.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	0.5	0.5	1.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	1.8	0.0
Total Del/Veh (s)	0.6	0.5	5.7	3.8	0.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.0	0.4	0.2	0.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	13.5	15.8	8.1	10.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.1
Total Del/Veh (s)	15.7	9.1	5.8	16.5	10.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.5	1.7	0.2	0.5
Total Del/Veh (s)	10.2	9.0	11.8	10.9	9.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.6	1.3	0.0	0.7
Total Del/Veh (s)	16.5	32.1	16.5	20.2	19.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.8	0.1	0.0	0.0	0.5
Total Del/Veh (s)	11.8	16.0	19.2	17.3	16.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St./Middle St & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.3	0.0	0.2	1.3	0.3
Total Del/Veh (s)	14.9	16.9	15.3	14.1	15.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	26.3
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	61	65	54	137
Average Queue (ft)	40	35	30	68
95th Queue (ft)	59	56	49	116
Link Distance (ft)		495	636	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	9	6		
Queuing Penalty (veh)	8	9		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	119	113	73
Average Queue (ft)	35	53	54	35
95th Queue (ft)	62	94	89	59
Link Distance (ft)	527	351	328	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	22	54	45	61
Average Queue (ft)	2	9	19	24
95th Queue (ft)	14	37	37	49
Link Distance (ft)	351	421	224	227
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	76	34
Average Queue (ft)	29	2
95th Queue (ft)	56	16
Link Distance (ft)	1097	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 100 Fore St & Existing Driveways & Fore

Movement	EB	WB	NB	NW	NW
Directions Served	TR>	<LT	LR	L	R
Maximum Queue (ft)	4	38	59	30	30
Average Queue (ft)	0	4	11	4	3
95th Queue (ft)	3	22	42	20	20
Link Distance (ft)	386	549	182	230	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					25
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	44	30
Average Queue (ft)	20	2
95th Queue (ft)	43	13
Link Distance (ft)	739	549
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	151	151	94	237
Average Queue (ft)	74	73	76	86
95th Queue (ft)	121	129	108	178
Link Distance (ft)	629	351		542
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			9	3
Queuing Penalty (veh)			27	11

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	52	180	139	103	77	195
Average Queue (ft)	17	57	71	38	15	89
95th Queue (ft)	45	130	139	79	49	161
Link Distance (ft)	1097	196		542		386
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		1				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	2	1	0	
Queuing Penalty (veh)		1	2	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	154	251	74	92	120
Average Queue (ft)	64	112	24	37	58
95th Queue (ft)	129	198	52	75	98
Link Distance (ft)	196	557		310	297
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	1				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	0	

Intersection: 11: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	113	96	177	58	145	62	140	175	93	220	126
Average Queue (ft)	38	32	66	29	54	24	59	70	29	119	20
95th Queue (ft)	87	75	140	60	122	60	111	135	72	190	72
Link Distance (ft)		306	306		265			299	299	495	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				28	27	17		0		3	
Queuing Penalty (veh)				20	19	15		0		1	

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	80	95	195	246	82	79	166
Average Queue (ft)	21	50	96	113	31	24	88
95th Queue (ft)	58	89	175	204	65	63	146
Link Distance (ft)	195		247	247	306	306	527
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	4					
Queuing Penalty (veh)	0	2					

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	212	242	128	165	109	106	68
Average Queue (ft)	100	128	60	69	56	37	19
95th Queue (ft)	179	219	108	131	103	80	53
Link Distance (ft)	450	450	247	247	546	292	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							50
Storage Blk Time (%)						6	1
Queuing Penalty (veh)						2	1

Network Summary

Network wide Queuing Penalty: 122

Intersection: 7: Congress St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.8	12.4	11.0	23.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	22	28	30	13
Cycles @ Minimum (%)	4	20	29	18
Cycles Maxed Out (%)	49	0	1	3
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.0	11.5	10.8	35.1	10.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	17	15	33	23	33
Cycles @ Minimum (%)	9	1	23	1	23
Cycles Maxed Out (%)	41	7	10	16	10
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.3	19.2	12.3	19.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	3	11	3
Cycles @ Minimum (%)	1	1	1	1
Cycles Maxed Out (%)	1	36	1	36
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	34.4	12.3	11.1	19.0	8.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	16	13	6	20
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	7	13	17	37	56
Cycles with Peds (%)	26	2	0	24	9

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	21.9	22.1	21.7	22.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	34	10	12	18
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	7	3	9	3
Cycles with Peds (%)	3	58	23	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	24.9	19.0	25.5
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	4	10	22
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	29	0	25
Cycles with Peds (%)	0	31	4

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4874	4799	4748	4773	4684	4775
Vehs Exited	4869	4789	4746	4770	4669	4768
Starting Vehs	101	83	103	94	83	84
Ending Vehs	106	93	105	97	98	92
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	1	1	0	0	2	0
Travel Distance (mi)	1506	1506	1499	1479	1446	1487
Travel Time (hr)	97.7	97.3	96.4	95.7	92.3	95.8
Total Delay (hr)	42.0	41.6	40.9	40.9	38.7	40.8
Total Stops	7144	7171	7082	7039	6829	7054
Fuel Used (gal)	76.3	76.2	75.4	75.2	72.4	75.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4874	4799	4748	4773	4684	4775
Vehs Exited	4869	4789	4746	4770	4669	4768
Starting Vehs	101	83	103	94	83	84
Ending Vehs	106	93	105	97	98	92
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	1	1	0	0	2	0
Travel Distance (mi)	1506	1506	1499	1479	1446	1487
Travel Time (hr)	97.7	97.3	96.4	95.7	92.3	95.8
Total Delay (hr)	42.0	41.6	40.9	40.9	38.7	40.8
Total Stops	7144	7171	7082	7039	6829	7054
Fuel Used (gal)	76.3	76.2	75.4	75.2	72.4	75.1

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.7	7.4	5.5	6.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.4	0.0	0.1
Total Del/Veh (s)	8.4	10.6	10.3	7.1	9.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.5	1.4	8.4	7.5	2.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.8	0.6	0.8	1.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.7	0.8	6.2	1.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.3	6.1	0.5	0.3	1.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	13.4	15.8	9.5	11.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.3	0.1
Total Del/Veh (s)	16.9	9.5	6.2	17.1	10.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.5	1.7	0.3	0.5
Total Del/Veh (s)	12.9	11.8	12.7	11.0	12.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.5	1.1	0.0	0.6
Total Del/Veh (s)	17.2	33.3	16.7	21.2	19.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

23: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.3	2.8	0.5	2.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.8	0.1	0.0	0.0	0.5
Total Del/Veh (s)	13.7	17.5	18.1	18.5	17.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St./Middle St & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.4	0.0	0.2	1.7	0.4
Total Del/Veh (s)	16.7	16.0	16.8	14.5	16.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	29.6
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	63	98	59	150
Average Queue (ft)	44	47	37	68
95th Queue (ft)	63	77	55	112
Link Distance (ft)		495	1144	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	10	13		
Queuing Penalty (veh)	19	18		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	114	178	140	82
Average Queue (ft)	46	71	68	39
95th Queue (ft)	87	133	113	65
Link Distance (ft)	528	351	343	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	37	67	48	68
Average Queue (ft)	3	13	18	27
95th Queue (ft)	19	45	39	52
Link Distance (ft)	351	421	224	227
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	95	64	4
Average Queue (ft)	35	7	0
95th Queue (ft)	69	37	3
Link Distance (ft)	1097	421	398
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Proposed New Road & Fore

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	62	60
Average Queue (ft)	5	27
95th Queue (ft)	30	49
Link Distance (ft)	555	328
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	39	51	29
Average Queue (ft)	21	26	2
95th Queue (ft)	43	47	16
Link Distance (ft)	739	228	555
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	169	156	94	284
Average Queue (ft)	81	76	82	103
95th Queue (ft)	137	131	107	219
Link Distance (ft)	611	350		542
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			14	4
Queuing Penalty (veh)			40	16

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	88	186	140	137	95	177
Average Queue (ft)	30	68	78	43	20	83
95th Queue (ft)	65	146	149	95	64	144
Link Distance (ft)	1097	196		542		386
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		1				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	3	1	0	
Queuing Penalty (veh)		1	4	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	202	305	68	100	136
Average Queue (ft)	81	138	25	39	63
95th Queue (ft)	166	250	53	79	108
Link Distance (ft)	196	815		310	297
Upstream Blk Time (%)	1				
Queuing Penalty (veh)	3				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	1	

Intersection: 11: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	128	119	179	55	158	67	162	212	88	259	154
Average Queue (ft)	53	35	69	26	47	23	64	87	27	127	43
95th Queue (ft)	108	86	136	56	113	60	123	161	65	216	116
Link Distance (ft)		308	308		265			296	296	495	
Upstream Blk Time (%)								0			
Queuing Penalty (veh)								0			
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				23	27	17	0	1		5	0
Queuing Penalty (veh)				17	19	15	0	1		3	0

Intersection: 23: Thames St/Site Access & Proposed New Road

Movement	SB	NE
Directions Served	LR	LT
Maximum Queue (ft)	57	6
Average Queue (ft)	31	0
95th Queue (ft)	47	4
Link Distance (ft)	328	1144
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	124	96	244	236	98	96	228
Average Queue (ft)	24	51	138	109	36	27	112
95th Queue (ft)	74	91	232	202	75	71	185
Link Distance (ft)	254		247	247	308	308	528
Upstream Blk Time (%)			0	0			
Queuing Penalty (veh)			1	0			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	4					
Queuing Penalty (veh)	0	2					

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	276	244	162	196	148	135	70
Average Queue (ft)	136	124	68	81	61	42	26
95th Queue (ft)	226	211	131	152	115	93	63
Link Distance (ft)	492	492	247	247	546	292	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							50
Storage Blk Time (%)						8	1
Queuing Penalty (veh)						4	1

Network Summary

Network wide Queuing Penalty: 169

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.7	12.5	11.4	23.4
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	21	29	26	13
Cycles @ Minimum (%)	4	19	30	17
Cycles Maxed Out (%)	54	0	0	3
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.3	11.3	11.6	32.9	11.6
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	18	12	26	16	26
Cycles @ Minimum (%)	8	1	18	0	18
Cycles Maxed Out (%)	46	8	20	16	20
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.9	20.5	12.9	20.5
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	1	11	1
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	2	51	2	51
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 11: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	34.2	13.9	11.5	20.1	8.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	8	10	19	4	21
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	10	20	21	46	56
Cycles with Peds (%)	27	6	0	29	12

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	25.0	24.2	24.9	23.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	23	8	5	8
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	21	7	23	7
Cycles with Peds (%)	5	64	25	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	27.2	20.3	27.7
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	2	6	16
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	42	0	38
Cycles with Peds (%)	0	34	5

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5799	5806	5781	5983	5683	5815
Vehs Exited	5724	5781	5802	5961	5709	5793
Starting Vehs	119	93	154	124	147	118
Ending Vehs	194	118	133	146	121	135
Denied Entry Before	1	2	0	1	2	0
Denied Entry After	2	2	1	0	1	1
Travel Distance (mi)	1832	1815	1830	1867	1801	1829
Travel Time (hr)	144.5	133.1	129.5	138.7	125.4	134.2
Total Delay (hr)	76.9	66.0	61.9	69.8	58.8	66.7
Total Stops	8918	8862	8600	9035	8563	8790
Fuel Used (gal)	96.2	93.5	92.7	97.3	91.3	94.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5799	5806	5781	5983	5683	5815
Vehs Exited	5724	5781	5802	5961	5709	5793
Starting Vehs	119	93	154	124	147	118
Ending Vehs	194	118	133	146	121	135
Denied Entry Before	1	2	0	1	2	0
Denied Entry After	2	2	1	0	1	1
Travel Distance (mi)	1832	1815	1830	1867	1801	1829
Travel Time (hr)	144.5	133.1	129.5	138.7	125.4	134.2
Total Delay (hr)	76.9	66.0	61.9	69.8	58.8	66.7
Total Stops	8918	8862	8600	9035	8563	8790
Fuel Used (gal)	96.2	93.5	92.7	97.3	91.3	94.2

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.2	8.8	6.6	7.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.1
Total Del/Veh (s)	9.2	8.8	8.9	8.7	8.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.6	0.9	6.5	6.0	2.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	1.1	0.6	1.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	0.6	0.7	7.6	8.8	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.8	0.8	0.2	0.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.6	0.4	0.0	0.4
Total Del/Veh (s)	36.8	22.0	13.9	25.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	32.1	11.5	23.6	28.4	22.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.3	2.2	0.2	0.7
Total Del/Veh (s)	18.0	35.7	14.3	11.1	21.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial/Commercial St & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	4.9	1.5	0.2	1.2
Total Del/Veh (s)	17.1	45.1	18.8	22.5	22.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	1	0	1

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.7	0.1	0.0	0.1	0.7
Total Del/Veh (s)	16.0	20.2	19.5	20.6	19.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.0	0.0	0.4	1.9	0.7
Total Del/Veh (s)	25.5	18.6	22.2	12.2	20.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	39.4
Denied Entry Before	0
Denied Entry After	1

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	70	62	119	68
Average Queue (ft)	34	51	53	36
95th Queue (ft)	53	66	93	56
Link Distance (ft)	230		495	666
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		18	9	
Queuing Penalty (veh)		24	21	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	110	116	105
Average Queue (ft)	53	49	47	54
95th Queue (ft)	92	85	84	90
Link Distance (ft)	516	340	273	230
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	22	47	36	92
Average Queue (ft)	1	6	16	41
95th Queue (ft)	10	26	35	73
Link Distance (ft)	340	418	194	210
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	52	58
Average Queue (ft)	19	10
95th Queue (ft)	41	39
Link Distance (ft)	1093	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 100 Fore St & Existing Driveways & Fore

Movement	EB	WB	NB	NW	NW
Directions Served	TR>	<LT	LR	L	R
Maximum Queue (ft)	4	52	57	40	32
Average Queue (ft)	0	7	23	16	5
95th Queue (ft)	3	30	49	42	25
Link Distance (ft)	394	536	232	256	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					25
Storage Blk Time (%)				4	1
Queuing Penalty (veh)				0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	44	49
Average Queue (ft)	19	5
95th Queue (ft)	42	27
Link Distance (ft)	792	536
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	630	291	94	208
Average Queue (ft)	263	156	68	86
95th Queue (ft)	517	256	106	162
Link Distance (ft)	1066	318		534
Upstream Blk Time (%)	1	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			7	9
Queuing Penalty (veh)			16	15

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	210	164	134	518	100	221
Average Queue (ft)	84	47	43	205	70	98
95th Queue (ft)	167	114	107	470	132	174
Link Distance (ft)	1093	199		534		330
Upstream Blk Time (%)		0		2		0
Queuing Penalty (veh)		0		12		0
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	1	28	1	
Queuing Penalty (veh)		2	1	55	4	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	219	524	104	168	87
Average Queue (ft)	176	197	66	78	40
95th Queue (ft)	255	409	111	143	73
Link Distance (ft)	199	1555		234	264
Upstream Blk Time (%)	12				
Queuing Penalty (veh)	76				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			4	4	
Queuing Penalty (veh)			9	8	

Intersection: 11: Commercial/Commercial St & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	77	102	168	58	155	57	183	267	44	225	175
Average Queue (ft)	30	49	62	28	91	34	100	93	14	95	37
95th Queue (ft)	68	96	128	63	154	66	168	191	33	175	92
Link Distance (ft)		308	308		133			300	300	495	
Upstream Blk Time (%)					9			0			
Queuing Penalty (veh)					0			0			
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				19	56	24	2	1		3	0
Queuing Penalty (veh)				25	41	33	5	2		2	0

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	206	100	254	219	152	135	245
Average Queue (ft)	86	80	127	113	65	43	122
95th Queue (ft)	186	115	216	204	129	107	211
Link Distance (ft)	193		240	240	308	308	516
Upstream Blk Time (%)	1		0	0			
Queuing Penalty (veh)	0		1	1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	3	13					
Queuing Penalty (veh)	9	22					

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	297	280	179	205	256	159	75
Average Queue (ft)	167	127	102	115	145	61	40
95th Queue (ft)	292	239	165	185	226	122	81
Link Distance (ft)	309	309	240	240	546	468	
Upstream Blk Time (%)	3	1		0			
Queuing Penalty (veh)	0	0		0			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						16	1
Queuing Penalty (veh)						19	3

Network Summary

Network wide Queuing Penalty: 408

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	7.7	19.2	23.0	28.7
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	22	0	0	0
Cycles @ Minimum (%)	0	2	0	9
Cycles Maxed Out (%)	21	11	71	3
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	18.9	13.4	13.1	35.8	13.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	3	11	7	5	7
Cycles @ Minimum (%)	3	0	9	0	9
Cycles Maxed Out (%)	79	20	45	21	45
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	17.6	24.4	17.6	24.4
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	18	86	18	86
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial/Commercial St & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	40.4	13.6	13.1	22.4	9.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	2	4	2	2	4
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	30	22	39	73	84
Cycles with Peds (%)	77	9	0	69	13

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	28.4	28.9	28.0	29.4
g/C Ratio	-0.01	NA	NA	-0.01
Cycles Skipped (%)	6	0	0	10
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	35	35	35	33
Cycles with Peds (%)	12	88	47	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	31.3	30.7	31.0
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	65	40	65
Cycles with Peds (%)	2	58	8

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6344	6450	6482	6344	6358	6401
Vehs Exited	6326	6421	6460	6304	6341	6372
Starting Vehs	157	135	150	170	143	145
Ending Vehs	175	164	172	210	160	170
Denied Entry Before	2	0	0	2	2	0
Denied Entry After	2	2	2	0	1	0
Travel Distance (mi)	2556	2590	2597	2537	2544	2565
Travel Time (hr)	163.8	178.3	177.9	180.2	181.9	176.4
Total Delay (hr)	73.6	86.9	86.2	90.6	91.8	85.9
Total Stops	10222	10745	10612	10555	10705	10570
Fuel Used (gal)	119.4	123.5	124.1	123.2	123.3	122.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6344	6450	6482	6344	6358	6401
Vehs Exited	6326	6421	6460	6304	6341	6372
Starting Vehs	157	135	150	170	143	145
Ending Vehs	175	164	172	210	160	170
Denied Entry Before	2	0	0	2	2	0
Denied Entry After	2	2	2	0	1	0
Travel Distance (mi)	2556	2590	2597	2537	2544	2565
Travel Time (hr)	163.8	178.3	177.9	180.2	181.9	176.4
Total Delay (hr)	73.6	86.9	86.2	90.6	91.8	85.9
Total Stops	10222	10745	10612	10555	10705	10570
Fuel Used (gal)	119.4	123.5	124.1	123.2	123.3	122.7

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	5.6	9.6	8.1	8.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	12.9	12.2	11.2	9.3	11.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.8	1.0	8.0	8.0	3.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.6	1.1	0.8	1.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.9	0.6	9.1	2.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.5	6.8	1.2	0.2	1.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.4	0.0	0.3
Total Del/Veh (s)	29.0	28.3	14.5	24.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.3	0.1
Total Del/Veh (s)	19.7	10.7	17.2	16.5	15.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.4	2.2	0.2	0.7
Total Del/Veh (s)	12.5	32.7	15.8	12.0	18.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial/Commercial St & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.9	1.4	0.2	0.8
Total Del/Veh (s)	19.2	44.1	18.6	23.5	22.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

18: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	5.2	2.8	1.0	2.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.6	0.2	0.0	0.5	0.8
Total Del/Veh (s)	20.5	25.0	20.5	25.1	23.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.3	0.0	0.5	2.0	0.5
Total Del/Veh (s)	72.8	20.4	26.4	13.7	39.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	46.4
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	67	70	131	88
Average Queue (ft)	36	53	60	47
95th Queue (ft)	55	68	108	71
Link Distance (ft)	230		495	1115
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		19	16	
Queuing Penalty (veh)		40	38	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	158	175	132	118
Average Queue (ft)	77	77	60	56
95th Queue (ft)	138	138	107	93
Link Distance (ft)	515	340	312	230
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	50	42	112
Average Queue (ft)	2	8	19	42
95th Queue (ft)	16	32	41	79
Link Distance (ft)	340	418	194	210
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	70	74
Average Queue (ft)	27	16
95th Queue (ft)	55	53
Link Distance (ft)	1093	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	39	79	49
Average Queue (ft)	5	32	17
95th Queue (ft)	24	60	49
Link Distance (ft)	532	339	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			25
Storage Blk Time (%)		19	2
Queuing Penalty (veh)		4	3

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	40	40	56
Average Queue (ft)	18	17	6
95th Queue (ft)	41	41	34
Link Distance (ft)	792	375	532
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	481	360	94	202
Average Queue (ft)	236	172	73	90
95th Queue (ft)	427	300	107	173
Link Distance (ft)	1063	578		534
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			11	8
Queuing Penalty (veh)			25	16

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	156	139	136	456	100	133
Average Queue (ft)	66	49	49	165	69	76
95th Queue (ft)	125	104	112	386	128	119
Link Distance (ft)	1093	199		534		330
Upstream Blk Time (%)		0		2		
Queuing Penalty (veh)		0		11		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	0	22	1	
Queuing Penalty (veh)		1	0	44	4	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	224	643	104	186	96
Average Queue (ft)	147	205	67	72	40
95th Queue (ft)	232	472	110	139	78
Link Distance (ft)	199	1237		234	264
Upstream Blk Time (%)	5			0	
Queuing Penalty (veh)	37			0	
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			6	2	
Queuing Penalty (veh)			12	5	

Intersection: 11: Commercial/Commercial St & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	121	117	152	59	186	55	182	270	46	299	175
Average Queue (ft)	50	51	58	27	89	29	97	105	15	140	57
95th Queue (ft)	97	101	115	62	161	63	161	204	34	247	143
Link Distance (ft)		310	310		368			606	606	495	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				22	52	23	2	1		6	0
Queuing Penalty (veh)				31	38	32	7	2		8	0

Intersection: 18: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	42
Average Queue (ft)	26
95th Queue (ft)	43
Link Distance (ft)	339
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	285	100	263	247	153	137	306
Average Queue (ft)	105	85	167	122	72	56	151
95th Queue (ft)	227	118	272	226	135	119	262
Link Distance (ft)	522		240	240	310	310	515
Upstream Blk Time (%)			4	0			
Queuing Penalty (veh)			14	1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	7	17					
Queuing Penalty (veh)	19	29					

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	764	736	236	238	320	207	75
Average Queue (ft)	385	328	125	137	157	75	52
95th Queue (ft)	767	728	202	215	269	154	91
Link Distance (ft)	1345	1345	240	240	543	468	
Upstream Blk Time (%)			0	1			
Queuing Penalty (veh)			2	2			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						18	3
Queuing Penalty (veh)						25	6

Network Summary

Network wide Queuing Penalty: 455

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	4.0	17.0	24.0	26.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	4.4	15.7	21.8	23.1
g/C Ratio	-0.01	-0.01	NA	NA
Cycles Skipped (%)	17	3	0	0
Cycles @ Minimum (%)	80	3	2	3
Cycles Maxed Out (%)	83	64	68	51
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	10.0	19.0	9.0	33.0	9.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	10.3	11.9	9.0	24.8	9.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	6	23	14	10	14
Cycles @ Minimum (%)	87	0	11	0	11
Cycles Maxed Out (%)	94	9	73	16	73
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	11.0	21.0	11.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	10.7	20.3	10.7	20.3
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	83	84	83	84
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial/Commercial St & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	43.0	13.6	13.1	23.7	9.2
g/C Ratio	NA	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	0	2	2	0	5
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	40	19	41	84	81
Cycles with Peds (%)	79	5	0	75	14

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	31.1	31.2	31.0	31.6
g/C Ratio	-0.01	NA	NA	-0.01
Cycles Skipped (%)	2	0	0	4
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	63	52	63	53
Cycles with Peds (%)	6	96	50	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	33.6	31.8	33.4
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	93	50	91
Cycles with Peds (%)	0	63	7

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4306	4311	4350	4310	4320	4314
Vehs Exited	4326	4293	4361	4319	4335	4325
Starting Vehs	98	59	93	83	77	75
Ending Vehs	78	77	82	74	62	68
Denied Entry Before	0	1	0	0	2	0
Denied Entry After	2	0	0	0	1	0
Travel Distance (mi)	1221	1211	1209	1207	1223	1214
Travel Time (hr)	74.9	74.9	75.4	74.2	74.4	74.8
Total Delay (hr)	25.5	26.0	26.4	25.4	24.9	25.7
Total Stops	5307	5221	5247	5132	5159	5209
Fuel Used (gal)	56.0	56.3	56.5	56.0	56.2	56.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4306	4311	4350	4310	4320	4314
Vehs Exited	4326	4293	4361	4319	4335	4325
Starting Vehs	98	59	93	83	77	75
Ending Vehs	78	77	82	74	62	68
Denied Entry Before	0	1	0	0	2	0
Denied Entry After	2	0	0	0	1	0
Travel Distance (mi)	1221	1211	1209	1207	1223	1214
Travel Time (hr)	74.9	74.9	75.4	74.2	74.4	74.8
Total Delay (hr)	25.5	26.0	26.4	25.4	24.9	25.7
Total Stops	5307	5221	5247	5132	5159	5209
Fuel Used (gal)	56.0	56.3	56.5	56.0	56.2	56.2

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.9	7.1	4.9	5.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	7.7	8.2	8.1	6.1	7.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.4	1.2	6.2	5.6	2.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.4	0.6	0.5	1.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	2.7	0.0
Total Del/Veh (s)	0.6	0.5	7.0	5.6	0.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.9	0.5	0.3	0.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St & India Street Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	13.5	13.8	7.0	9.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	22.7	8.4	5.5	15.4	9.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.5	1.7	0.2	0.6
Total Del/Veh (s)	12.1	10.2	12.7	10.8	11.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.4	0.0	0.1
Total Del/Veh (s)	4.9	2.9	3.7	3.0	3.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.3	0.2
Total Del/Veh (s)	18.4	17.8	19.5	13.5	16.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.2	0.1	1.0	0.7	0.8
Total Del/Veh (s)	9.2	5.8	22.8	22.0	11.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	20.4
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	61	58	46	125
Average Queue (ft)	37	32	27	59
95th Queue (ft)	54	48	47	98
Link Distance (ft)		456	600	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	9	6		
Queuing Penalty (veh)	8	9		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	105	112	76
Average Queue (ft)	33	50	55	36
95th Queue (ft)	67	87	90	59
Link Distance (ft)	522	343	214	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	23	55	38	70
Average Queue (ft)	1	9	19	25
95th Queue (ft)	10	34	38	54
Link Distance (ft)	343	416	197	162
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	70	57	13
Average Queue (ft)	28	4	0
95th Queue (ft)	56	28	6
Link Distance (ft)	1091	416	383
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Existing Driveways & Fore

Movement	WB	NB	NW	NW
Directions Served	<LT	LR	L	R
Maximum Queue (ft)	39	56	21	34
Average Queue (ft)	3	9	2	4
95th Queue (ft)	21	36	13	20
Link Distance (ft)	552	180	299	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	38	34
Average Queue (ft)	16	4
95th Queue (ft)	40	20
Link Distance (ft)	545	552
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St & India Street

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	139	173	119	193
Average Queue (ft)	72	70	77	69
95th Queue (ft)	119	127	124	145
Link Distance (ft)	383	255		540
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			7	3
Queuing Penalty (veh)			20	11

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	66	179	140	121	70	151
Average Queue (ft)	19	51	70	35	16	84
95th Queue (ft)	53	114	135	77	51	138
Link Distance (ft)	1091	208		540		279
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	2	1	0	
Queuing Penalty (veh)		0	2	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	213	274	76	112	120
Average Queue (ft)	69	120	27	44	60
95th Queue (ft)	152	215	58	84	104
Link Distance (ft)	208	707		313	242
Upstream Blk Time (%)	1				
Queuing Penalty (veh)	2				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	0	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	124	73	128	58
Average Queue (ft)	48	27	33	24
95th Queue (ft)	103	66	84	53
Link Distance (ft)	312	108	714	456
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	95	123	39	159	51	206	124	254
Average Queue (ft)	36	58	4	85	9	75	58	130
95th Queue (ft)	73	104	23	148	35	152	126	234
Link Distance (ft)	230	230		522		312		239
Upstream Blk Time (%)								1
Queuing Penalty (veh)								4
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				7		7	3	18
Queuing Penalty (veh)				0		1	12	23

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	149	346	62	166	57	115	76	136
Average Queue (ft)	40	152	17	59	18	53	19	55
95th Queue (ft)	111	268	49	128	47	98	56	103
Link Distance (ft)		442		239		551		477
Upstream Blk Time (%)				0				
Queuing Penalty (veh)				0				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	0	11	2	8		0	6	15
Queuing Penalty (veh)	0	10	5	2		0	7	3

Network Summary

Network wide Queuing Penalty: 119

Intersection: 7: Congress St & India Street

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.3	12.5	10.4	23.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	26	26	33	15
Cycles @ Minimum (%)	4	19	32	19
Cycles Maxed Out (%)	47	0	0	2
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.1	11.3	10.6	33.8	10.6
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	20	17	30	22	30
Cycles @ Minimum (%)	8	0	23	0	23
Cycles Maxed Out (%)	42	8	10	15	10
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.8	19.7	12.8	19.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	9	1	9	1
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	2	41	2	41
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	3	4	6	7	8
Movement(s) Served	SBTL	EBL	WBT	NBTL	WBL	EBT
Maximum Green (s)	24.0	6.0	25.0	24.0	5.0	26.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None	None	None
Avg. Green (s)	28.2	7.8	17.0	24.5	7.6	22.5
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	5	35	5	18	94	2
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	95	12	13	49	0	33
Cycles with Peds (%)	46	0	64	23	0	88

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	43.0	17.0	42.5	17.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	Min	None	C-Max	None
Avg. Green (s)	47.1	12.9	46.6	12.9
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	20	100	20
Cycles with Peds (%)	6	41	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4749	4847	4810	4847	4789	4807
Vehs Exited	4751	4857	4819	4877	4808	4820
Starting Vehs	90	83	102	115	93	89
Ending Vehs	88	73	93	85	74	73
Denied Entry Before	0	2	2	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	1491	1548	1524	1535	1519	1524
Travel Time (hr)	93.2	96.2	95.6	98.6	94.4	95.6
Total Delay (hr)	33.4	34.3	34.6	36.8	33.4	34.5
Total Stops	6391	6645	6659	6589	6412	6537
Fuel Used (gal)	68.4	71.0	69.9	71.1	69.3	69.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4749	4847	4810	4847	4789	4807
Vehs Exited	4751	4857	4819	4877	4808	4820
Starting Vehs	90	83	102	115	93	89
Ending Vehs	88	73	93	85	74	73
Denied Entry Before	0	2	2	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	1491	1548	1524	1535	1519	1524
Travel Time (hr)	93.2	96.2	95.6	98.6	94.4	95.6
Total Delay (hr)	33.4	34.3	34.6	36.8	33.4	34.5
Total Stops	6391	6645	6659	6589	6412	6537
Fuel Used (gal)	68.4	71.0	69.9	71.1	69.3	69.9

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0
Total Del/Veh (s)	6.2	7.5	5.3	6.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	10.1	11.4	10.2	7.0	10.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	2.5	1.4	8.5	6.8	2.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.2	0.7	0.8	1.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.8	0.6	6.6	1.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.2
Total Del/Veh (s)	2.7	5.3	0.5	0.3	1.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	14.2	14.3	9.3	11.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.6	0.2
Total Del/Veh (s)	17.8	9.4	7.6	21.1	11.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.5	0.6	1.6	0.2	0.6
Total Del/Veh (s)	15.9	11.3	13.0	12.0	12.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.4	0.0	0.2
Total Del/Veh (s)	5.8	3.3	4.2	3.5	4.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

23: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.1	3.0	0.2	2.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.4	0.2
Total Del/Veh (s)	18.1	19.7	16.8	17.8	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.5	0.1	1.0	0.7	1.0
Total Del/Veh (s)	12.8	6.6	21.9	20.5	12.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	24.6
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	66	67	68	134
Average Queue (ft)	38	39	40	62
95th Queue (ft)	58	59	59	107
Link Distance (ft)		456	1088	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	9	13		
Queuing Penalty (veh)	17	19		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	128	186	157	78
Average Queue (ft)	45	73	71	38
95th Queue (ft)	96	143	123	61
Link Distance (ft)	522	343	214	222
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	67	60	72
Average Queue (ft)	2	12	20	29
95th Queue (ft)	16	43	47	57
Link Distance (ft)	343	416	197	162
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	92	61
Average Queue (ft)	36	6
95th Queue (ft)	71	32
Link Distance (ft)	1091	416
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	28	53	35
Average Queue (ft)	3	23	3
95th Queue (ft)	18	45	18
Link Distance (ft)	545	347	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			25
Storage Blk Time (%)		7	0
Queuing Penalty (veh)		0	0

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	50	22	6
Average Queue (ft)	17	25	1	0
95th Queue (ft)	39	49	12	4
Link Distance (ft)	545	135	545	269
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	149	159	119	234
Average Queue (ft)	79	65	92	89
95th Queue (ft)	135	120	131	189
Link Distance (ft)	383	632		540
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			14	4
Queuing Penalty (veh)			39	15

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	83	216	140	153	97	230
Average Queue (ft)	31	64	79	46	19	96
95th Queue (ft)	66	150	148	118	62	183
Link Distance (ft)	1091	208		540		279
Upstream Blk Time (%)		0				1
Queuing Penalty (veh)		1				0
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	3	3	0	
Queuing Penalty (veh)		3	4	3	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	219	281	67	109	128
Average Queue (ft)	90	134	27	41	60
95th Queue (ft)	186	242	57	80	102
Link Distance (ft)	208	719		313	242
Upstream Blk Time (%)	3				
Queuing Penalty (veh)	8				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	0	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	158	97	125	65
Average Queue (ft)	62	30	43	29
95th Queue (ft)	127	71	99	60
Link Distance (ft)	312	108	714	456
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	69
Average Queue (ft)	30
95th Queue (ft)	51
Link Distance (ft)	347
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	86	134	56	240	58	205	124	261
Average Queue (ft)	40	59	6	109	9	77	87	168
95th Queue (ft)	74	114	32	187	36	147	151	281
Link Distance (ft)	230	230		522		312		239
Upstream Blk Time (%)								3
Queuing Penalty (veh)								20
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				13		6	9	25
Queuing Penalty (veh)				1		1	44	44

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	149	491	89	184	55	145	92	144
Average Queue (ft)	47	195	25	74	20	56	22	55
95th Queue (ft)	122	368	63	154	50	110	70	108
Link Distance (ft)		517		239		508		477
Upstream Blk Time (%)		1		0				
Queuing Penalty (veh)		0		0				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	0	18	3	11		1	6	14
Queuing Penalty (veh)	0	18	11	3		0	8	3

Network Summary

Network wide Queuing Penalty: 264

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	Min	Min	None
Avg. Green (s)	9.0	11.0	11.2	23.6
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	9	0	0	0
Cycles @ Minimum (%)	0	40	40	6
Cycles Maxed Out (%)	53	0	0	0
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.7	11.5	11.3	34.0	11.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	15	15	24	16	24
Cycles @ Minimum (%)	7	0	17	0	17
Cycles Maxed Out (%)	51	10	16	15	16
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.6	21.5	12.6	21.5
g/C Ratio	-0.01	NA	-0.01	NA
Cycles Skipped (%)	3	0	3	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	1	57	1	57
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	3	4	6	7	8
Movement(s) Served	SBTL	EBL	WBT	NBTL	WBL	EBT
Maximum Green (s)	24.0	6.0	25.0	24.0	5.0	26.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None	None	None
Avg. Green (s)	28.3	7.2	18.9	26.8	6.6	25.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	2	27	2	9	92	2
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	98	22	24	70	4	50
Cycles with Peds (%)	50	0	69	29	0	91

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	43.0	17.0	42.5	17.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	Min	None	C-Max	None
Avg. Green (s)	46.9	13.2	46.4	13.2
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	22	100	22
Cycles with Peds (%)	4	43	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5963	5923	5791	5819	5881	5882
Vehs Exited	5930	5908	5822	5820	5894	5875
Starting Vehs	120	107	128	124	146	117
Ending Vehs	153	122	97	123	133	121
Denied Entry Before	0	0	0	0	2	0
Denied Entry After	2	1	0	2	1	0
Travel Distance (mi)	1877	1890	1857	1855	1884	1873
Travel Time (hr)	138.8	129.3	126.8	131.2	130.4	131.3
Total Delay (hr)	63.1	53.3	51.8	56.3	54.2	55.7
Total Stops	8193	8117	8171	7843	8375	8143
Fuel Used (gal)	88.9	87.1	85.5	86.5	87.5	87.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5963	5923	5791	5819	5881	5882
Vehs Exited	5930	5908	5822	5820	5894	5875
Starting Vehs	120	107	128	124	146	117
Ending Vehs	153	122	97	123	133	121
Denied Entry Before	0	0	0	0	2	0
Denied Entry After	2	1	0	2	1	0
Travel Distance (mi)	1877	1890	1857	1855	1884	1873
Travel Time (hr)	138.8	129.3	126.8	131.2	130.4	131.3
Total Delay (hr)	63.1	53.3	51.8	56.3	54.2	55.7
Total Stops	8193	8117	8171	7843	8375	8143
Fuel Used (gal)	88.9	87.1	85.5	86.5	87.5	87.1

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.1	6.7	6.7	6.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	11.3	9.2	8.4	8.0	9.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.6	1.0	6.5	6.2	2.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	0.9	0.6	1.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	0.6	0.5	6.8	8.9	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.3	0.9	0.2	0.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.8	0.4	0.0	0.5
Total Del/Veh (s)	40.7	24.4	13.6	27.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	24.3	10.8	18.7	23.4	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	1.8	2.2	0.2	1.1
Total Del/Veh (s)	16.2	41.0	13.9	11.2	21.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.5	0.1	0.2
Total Del/Veh (s)	3.7	3.9	4.7	4.1	4.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.5	0.1	0.1	0.2	0.5
Total Del/Veh (s)	30.0	17.2	12.9	13.2	18.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.2	0.1	1.8	0.7	0.9
Total Del/Veh (s)	17.2	12.6	19.0	12.0	15.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	32.5
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	58	66	88	55
Average Queue (ft)	33	43	40	35
95th Queue (ft)	48	63	68	53
Link Distance (ft)	225		455	750
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		17	8	
Queuing Penalty (veh)		22	20	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	154	106	116	103
Average Queue (ft)	55	47	54	50
95th Queue (ft)	112	85	96	82
Link Distance (ft)	527	335	167	225
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	51	44	90
Average Queue (ft)	2	8	20	41
95th Queue (ft)	16	34	39	72
Link Distance (ft)	335	421	286	217
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	60	56
Average Queue (ft)	22	10
95th Queue (ft)	42	37
Link Distance (ft)	1093	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 100 Fore St & Existing Driveways & Fore

Movement	WB	NB	NW	NW
Directions Served	<LT	LR	L	R
Maximum Queue (ft)	35	55	36	38
Average Queue (ft)	4	22	15	6
95th Queue (ft)	22	46	38	27
Link Distance (ft)	539	299	247	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			5	1
Queuing Penalty (veh)			0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	35	48
Average Queue (ft)	17	5
95th Queue (ft)	39	28
Link Distance (ft)	662	539
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	586	320	119	239
Average Queue (ft)	280	170	70	82
95th Queue (ft)	543	281	116	173
Link Distance (ft)	836	467		533
Upstream Blk Time (%)	2	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			10	7
Queuing Penalty (veh)			23	12

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	145	130	125	510	100	196
Average Queue (ft)	71	41	39	183	71	97
95th Queue (ft)	124	93	102	412	132	162
Link Distance (ft)	1093	194		533		396
Upstream Blk Time (%)		0		1		
Queuing Penalty (veh)		0		6		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	0	24	1	
Queuing Penalty (veh)		1	0	48	6	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	216	522	104	169	90
Average Queue (ft)	172	206	64	68	40
95th Queue (ft)	246	517	107	131	74
Link Distance (ft)	194	915		255	233
Upstream Blk Time (%)	9	2		0	
Queuing Penalty (veh)	61	0		0	
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			5	3	
Queuing Penalty (veh)			9	6	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	100	93	151	84
Average Queue (ft)	37	36	52	34
95th Queue (ft)	79	74	110	65
Link Distance (ft)	309	108	714	455
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	244	225	65	169	118	155	124	248
Average Queue (ft)	104	97	12	96	41	81	60	103
95th Queue (ft)	206	182	43	155	85	135	121	195
Link Distance (ft)	231	231		527		309		248
Upstream Blk Time (%)	5	3						0
Queuing Penalty (veh)	0	0						2
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				10	1	5	3	11
Queuing Penalty (veh)				1	4	3	16	16

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	149	324	89	253	151	202	80	142
Average Queue (ft)	64	164	46	128	68	70	22	72
95th Queue (ft)	133	265	89	218	122	139	57	118
Link Distance (ft)		689		248		543		409
Upstream Blk Time (%)				0				
Queuing Penalty (veh)				1				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	3	19	13	31	2	0	2	18
Queuing Penalty (veh)	21	19	70	19	6	1	5	6

Network Summary

Network wide Queuing Penalty: 404

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	8.0	19.7	23.5	30.4
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	16	0	0	0
Cycles @ Minimum (%)	0	4	2	5
Cycles Maxed Out (%)	27	14	79	4
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	19.1	13.3	12.8	36.0	12.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	4	10	9	6	9
Cycles @ Minimum (%)	1	0	12	0	12
Cycles Maxed Out (%)	75	16	41	19	41
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	17.4	24.0	17.4	24.0
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	18	78	18	78
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	4	6	8
Movement(s) Served	SBTL	WBTL	NBTL	EBTL
Maximum Green (s)	20.0	15.0	20.0	15.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	C-Min	None
Avg. Green (s)	20.3	14.9	20.3	15.0
g/C Ratio	-0.01	-0.01	NA	NA
Cycles Skipped (%)	4	5	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	80	94	100	97
Cycles with Peds (%)	37	53	24	80

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	21.0	14.0	20.5	14.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None
Avg. Green (s)	21.5	13.5	21.0	13.5
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	75	88	75
Cycles with Peds (%)	4	28	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6346	6356	6213	6484	6385	6358
Vehs Exited	6344	6342	6269	6440	6388	6357
Starting Vehs	180	166	204	167	166	172
Ending Vehs	182	180	148	211	163	172
Denied Entry Before	0	2	0	0	0	0
Denied Entry After	1	0	0	2	2	0
Travel Distance (mi)	2972	2968	2969	3002	3012	2985
Travel Time (hr)	196.1	178.5	180.7	197.5	182.1	187.0
Total Delay (hr)	77.8	60.4	62.5	77.9	62.5	68.2
Total Stops	9728	9465	9205	10181	9531	9626
Fuel Used (gal)	126.8	122.1	122.5	128.2	124.5	124.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6346	6356	6213	6484	6385	6358
Vehs Exited	6344	6342	6269	6440	6388	6357
Starting Vehs	180	166	204	167	166	172
Ending Vehs	182	180	148	211	163	172
Denied Entry Before	0	2	0	0	0	0
Denied Entry After	1	0	0	2	2	0
Travel Distance (mi)	2972	2968	2969	3002	3012	2985
Travel Time (hr)	196.1	178.5	180.7	197.5	182.1	187.0
Total Delay (hr)	77.8	60.4	62.5	77.9	62.5	68.2
Total Stops	9728	9465	9205	10181	9531	9626
Fuel Used (gal)	126.8	122.1	122.5	128.2	124.5	124.8

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	5.6	7.7	8.0	7.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	14.1	12.7	11.0	9.4	12.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.8	1.0	7.4	7.8	3.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.9	1.0	0.7	1.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.9	0.6	8.4	1.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.5	7.1	1.1	0.2	1.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.4	0.0	0.3
Total Del/Veh (s)	34.5	27.5	14.5	26.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.0
Total Del/Veh (s)	18.0	10.4	14.9	15.7	14.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.4	2.2	0.2	0.7
Total Del/Veh (s)	10.9	21.9	15.6	12.5	15.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.5	0.0	0.2
Total Del/Veh (s)	4.1	3.7	5.2	4.8	4.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

18: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	5.2	2.8	0.8	2.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.2	0.2	0.2
Total Del/Veh (s)	62.5	20.6	15.3	15.3	27.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.8	0.0	1.8	0.7	0.7
Total Del/Veh (s)	36.2	15.3	20.5	13.4	23.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	37.0
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	63	62	116	80
Average Queue (ft)	35	47	49	46
95th Queue (ft)	52	64	87	68
Link Distance (ft)	225		455	1072
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		18	15	
Queuing Penalty (veh)		38	36	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	204	170	120	110
Average Queue (ft)	72	76	59	55
95th Queue (ft)	141	133	100	94
Link Distance (ft)	523	335	263	225
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	33	47	47	105
Average Queue (ft)	3	8	18	46
95th Queue (ft)	18	33	41	80
Link Distance (ft)	335	421	286	217
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	76	66
Average Queue (ft)	27	14
95th Queue (ft)	54	46
Link Distance (ft)	1093	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	34	72	49
Average Queue (ft)	3	33	20
95th Queue (ft)	20	57	52
Link Distance (ft)	534	347	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			25
Storage Blk Time (%)		18	3
Queuing Penalty (veh)		4	3

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	40	35	6
Average Queue (ft)	16	18	4	0
95th Queue (ft)	39	43	21	4
Link Distance (ft)	662	308	534	324
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	580	370	120	216
Average Queue (ft)	261	173	79	90
95th Queue (ft)	567	311	123	174
Link Distance (ft)	1092	574		532
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			12	8
Queuing Penalty (veh)			27	16

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	144	119	129	429	100	146
Average Queue (ft)	65	43	51	158	74	79
95th Queue (ft)	115	91	110	350	130	129
Link Distance (ft)	1093	194		532		396
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				4		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	0	21	1	
Queuing Penalty (veh)		0	1	41	4	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	213	399	104	184	92
Average Queue (ft)	133	155	66	70	42
95th Queue (ft)	218	317	106	136	78
Link Distance (ft)	194	1247		255	233
Upstream Blk Time (%)	3				
Queuing Penalty (veh)	24				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			6	2	
Queuing Penalty (veh)			11	5	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	107	92	170	100
Average Queue (ft)	46	36	60	41
95th Queue (ft)	88	73	127	77
Link Distance (ft)	311	108	714	455
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	50
Average Queue (ft)	23
95th Queue (ft)	40
Link Distance (ft)	347
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	426	292	129	238	132	216	124	254
Average Queue (ft)	209	97	17	125	45	97	82	114
95th Queue (ft)	498	200	70	216	99	176	135	224
Link Distance (ft)	1273	1273		523		311		248
Upstream Blk Time (%)						0		1
Queuing Penalty (veh)						0		4
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				17	2	7	10	13
Queuing Penalty (veh)				2	7	5	52	24

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	150	791	89	262	150	172	99	167
Average Queue (ft)	98	299	49	148	76	75	23	82
95th Queue (ft)	177	646	95	251	129	136	65	136
Link Distance (ft)		2418		248		545		409
Upstream Blk Time (%)				1				
Queuing Penalty (veh)				9				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	8	31	19	34	3	1	2	24
Queuing Penalty (veh)	57	36	119	22	7	2	7	8

Network Summary

Network wide Queuing Penalty: 574

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	4.0	17.0	24.0	26.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	4.2	15.6	21.7	23.2
g/C Ratio	-0.01	-0.01	NA	NA
Cycles Skipped (%)	17	2	0	0
Cycles @ Minimum (%)	82	3	2	5
Cycles Maxed Out (%)	83	61	66	52
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	10.0	19.0	9.0	33.0	9.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	10.4	11.7	8.9	24.9	8.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	6	21	15	10	15
Cycles @ Minimum (%)	87	0	12	0	12
Cycles Maxed Out (%)	94	9	69	15	69
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	11.0	21.0	11.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	10.8	20.3	10.8	20.3
g/C Ratio	-0.01	NA	-0.01	NA
Cycles Skipped (%)	1	0	1	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	84	82	84	82
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	4	6	8
Movement(s) Served	SBTL	WBTL	NBTL	EBTL
Maximum Green (s)	20.0	15.0	20.0	15.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	C-Min	None
Avg. Green (s)	20.4	15.0	20.1	15.0
g/C Ratio	-0.01	-0.01	NA	NA
Cycles Skipped (%)	3	4	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	91	95	100	99
Cycles with Peds (%)	35	51	16	78

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	21.0	14.0	20.5	14.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None
Avg. Green (s)	21.6	13.6	21.1	13.6
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	82	96	82
Cycles with Peds (%)	4	29	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

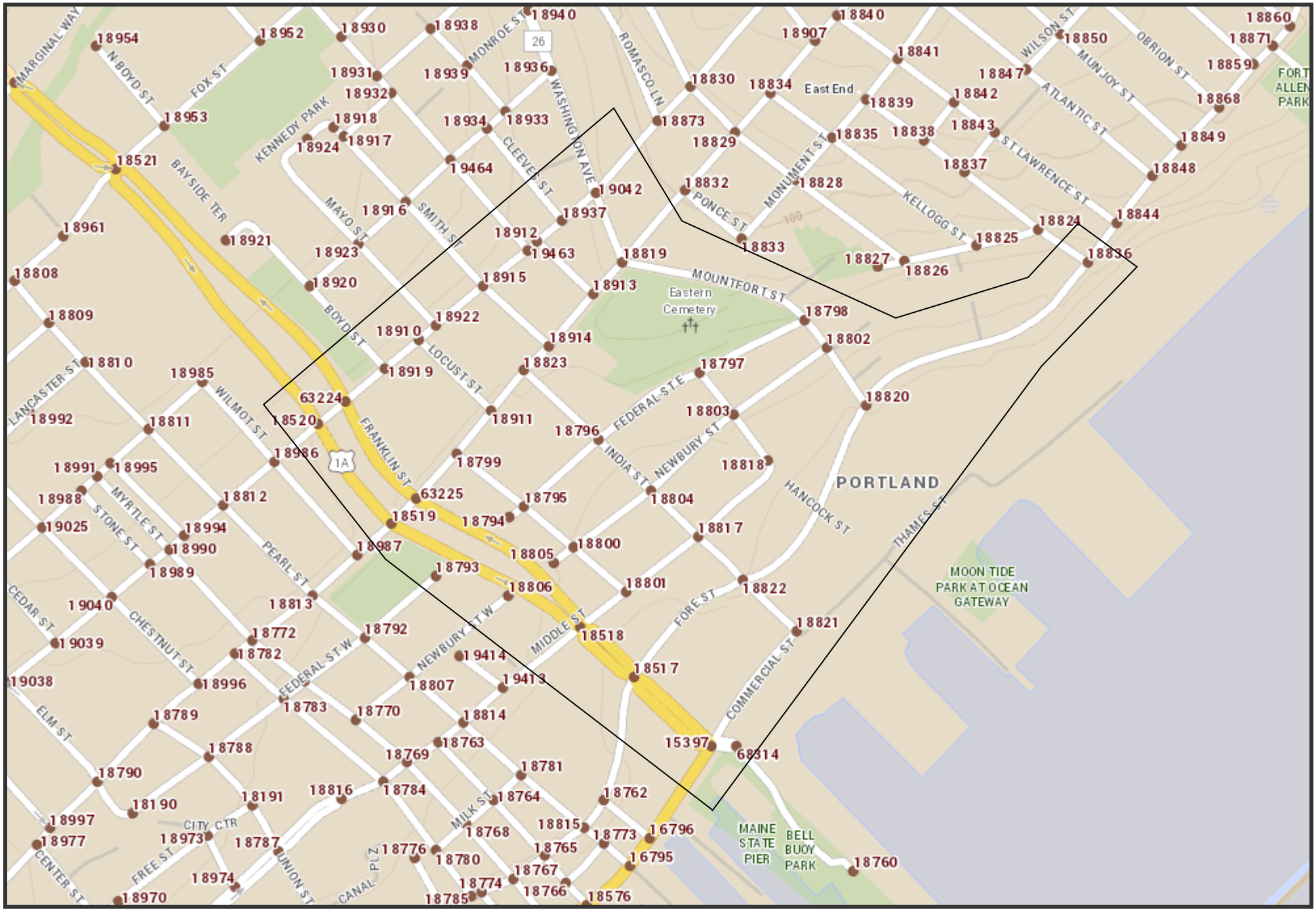
Appendix D

Node Map

Crash Report

Collision Diagrams

NODE MAP



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0.15 Miles

1 inch = 0.13 miles

Date: 8/23/2016
Time: 9:58:43 AM

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0561238	Start Node: 18520	Start Offset: 0	☐ Exclude First Node
	End Node: 19042	End Offset: 0	☐ Exclude Last Node
Route: 0560160	Start Node: 18819	Start Offset: 0	☑ Exclude First Node
	End Node: 18519	End Offset: 0	☑ Exclude Last Node
Route: 0561110	Start Node: 18794	Start Offset: 0	☐ Exclude First Node
	End Node: 18798	End Offset: 0	☑ Exclude Last Node
Route: 0560531	Start Node: 18805	Start Offset: 0	☐ Exclude First Node
	End Node: 18802	End Offset: 0	☑ Exclude Last Node
Route: 0560505	Start Node: 18518	Start Offset: 0	☑ Exclude First Node
	End Node: 18818	End Offset: 0	☐ Exclude Last Node
Route: 0560286	Start Node: 18836	Start Offset: 0	☐ Exclude First Node
	End Node: 18517	End Offset: 0	☑ Exclude Last Node
Route: 0561001	Start Node: 15397	Start Offset: 0	☐ Exclude First Node
	End Node: 18821	End Offset: 0	☐ Exclude Last Node
Route: 0001A	Start Node: 15397	Start Offset: 0	☑ Exclude First Node
	End Node: 63225	End Offset: 0	☑ Exclude Last Node
Route: 0001A	Start Node: 63225	Start Offset: 0	☑ Exclude First Node
	End Node: 63224	End Offset: 0	☑ Exclude Last Node
Route: 001AS	Start Node: 18520	Start Offset: 0	☑ Exclude First Node
	End Node: 18518	End Offset: 0	☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 001AS	Start Node: 18518 End Node: 18517	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 001AS	Start Node: 18517 End Node: 15397	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561002	Start Node: 18819 End Node: 19042	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☑ Exclude Last Node
Route: 0560524	Start Node: 18819 End Node: 18820	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560510	Start Node: 18912 End Node: 18913	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560666	Start Node: 18914 End Node: 18915	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560451	Start Node: 18910 End Node: 18911	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18795 End Node: 18799	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18800 End Node: 18795	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18801 End Node: 18800	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0561000	Start Node: 18822 End Node: 18821	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18817 End Node: 18822	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18804 End Node: 18817	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18796 End Node: 18804	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18823 End Node: 18796	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560344	Start Node: 18803 End Node: 18818	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560344	Start Node: 18797 End Node: 18803	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18520	0561238 - 0.77	Int of CUMBERLAND AV FRANKLIN ST	9	18	0	0	1	2	15	16.7	7.178	0.84	1.10	0.00
												Statewide Crash Rate:	0.67	
63224	0561238 - 0.80	Int of CUMBERLAND AV FRANKLIN ST	9	13	0	0	1	4	8	38.5	6.653	0.65	1.12	0.00
												Statewide Crash Rate:	0.67	
18919	0561238 - 0.84	Int of BOYD ST CUMBERLAND AV	2	2	0	0	0	0	2	0.0	2.692	0.25	0.44	0.00
												Statewide Crash Rate:	0.15	
18910	0561238 - 0.87	Int of CUMBERLAND AV, LOCUST ST	2	2	0	0	0	0	2	0.0	2.636	0.25	0.44	0.00
												Statewide Crash Rate:	0.15	
18922	0561238 - 0.89	Int of CUMBERLAND AV MAYO ST	2	1	0	0	0	0	1	0.0	2.475	0.13	0.45	0.00
												Statewide Crash Rate:	0.15	
18915	0561238 - 0.94	Int of CUMBERLAND AV, SMITH ST	2	2	0	0	0	0	2	0.0	2.450	0.27	0.45	0.00
												Statewide Crash Rate:	0.15	
19463	0561238 - 0.98	Int of ANDERSON ST CUMBERLAND AV	2	2	0	0	0	0	2	0.0	2.195	0.30	0.46	0.00
												Statewide Crash Rate:	0.15	
18912	0561238 - 0.99	Int of CUMBERLAND AV, MONTGOMERY ST	2	0	0	0	0	0	0	0.0	2.043	0.00	0.47	0.00
												Statewide Crash Rate:	0.15	
18937	0561238 - 1.01	Int of CLEEVE ST CUMBERLAND AV	2	0	0	0	0	0	0	0.0	2.011	0.00	0.47	0.00
												Statewide Crash Rate:	0.15	
19042	0561238 - 1.04	Int of CUMBERLAND AV WASHINGTON AV	9	10	0	0	1	1	8	20.0	4.911	0.68	1.19	0.00
												Statewide Crash Rate:	0.67	
18913	0560160 - 0.55	Int of CONGRESS ST MONTGOMERY ST	2	0	0	0	0	0	0	0.0	3.833	0.00	0.40	0.00
												Statewide Crash Rate:	0.15	
18914	0560160 - 0.60	Int of CONGRESS ST SMITH ST	2	4	0	0	1	0	3	25.0	3.932	0.34	0.40	0.00
												Statewide Crash Rate:	0.15	
18823	0560160 - 0.63	Int of CONGRESS ST INDIA ST	9	7	0	0	1	3	3	57.1	4.581	0.51	1.20	0.00
												Statewide Crash Rate:	0.67	
18911	0560160 - 0.67	Int of CONGRESS ST LOCUST ST	2	0	0	0	0	0	0	0.0	2.943	0.00	0.43	0.00
												Statewide Crash Rate:	0.15	
18799	0560160 - 0.71	Int of CONGRESS ST HAMPSHIRE ST	2	0	0	0	0	0	0	0.0	3.235	0.00	0.42	0.00
												Statewide Crash Rate:	0.15	
63225	0560160 - 0.76	Int of CONGRESS ST FRANKLIN ST	9	12	0	1	0	4	7	41.7	5.974	0.67	1.14	0.00
												Statewide Crash Rate:	0.67	
18794	0561110 - 0	End of FEDERAL ST E	2	0	0	0	0	0	0	0.0	0.007	0.00	-17.21	0.00
												Statewide Crash Rate:	0.14	
18795	0561110 - 0.02	Int of FEDERAL ST E HAMPSHIRE ST	2	0	0	0	0	0	0	0.0	0.274	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
18796	0561110 - 0.10	Int of FEDERAL ST E INDIA ST	2	1	0	0	0	0	1	0.0	2.510	0.13	0.45	0.00
												Statewide Crash Rate:	0.15	
18797	0561110 - 0.20	Int of FEDERAL ST E HANCOCK ST	2	0	0	0	0	0	0	0.0	0.154	0.00	0.48	0.00
												Statewide Crash Rate:	0.14	
18805	0560531 - 0	End of NEWBURY ST	2	0	0	0	0	0	0	0.0	0.006	0.00	-20.36	0.00
												Statewide Crash Rate:	0.14	
18800	0560531 - 0.03	Int of HAMPSHIRE ST NEWBURY ST	2	0	0	0	0	0	0	0.0	0.296	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18804	0560531 - 0.11	Int of INDIA ST NEWBURY ST	2	2	0	0	0	0	2	0.0	2.235	0.30	0.46	0.00
												Statewide Crash Rate:	0.15	
18803	0560531 - 0.19	Int of HANCOCK ST NEWBURY ST	2	1	0	0	0	0	1	0.0	0.249	1.34	0.59	2.28
												Statewide Crash Rate:	0.14	
18801	0560505 - 0.33	0509221 POR,MIDDLE,HAMPSHIRE ST	2	1	0	0	0	0	1	0.0	0.968	0.34	0.53	0.00
												Statewide Crash Rate:	0.14	
18817	0560505 - 0.39	Int of INDIA ST MIDDLE ST	2	4	0	0	1	2	1	75.0	2.212	0.60	0.46	1.30
												Statewide Crash Rate:	0.15	
18818	0560505 - 0.47	0509238 POR,HANCOCK,MIDDLE ST.	2	0	0	0	0	0	0	0.0	0.272	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
18836	0560286 - 0.08	Int of FORE ST WATERVILLE ST	2	0	0	0	0	0	0	0.0	1.748	0.00	0.44	0.00
												Statewide Crash Rate:	0.13	
18820	0560286 - 0.28	Int of FORE ST, MOUNTFORT ST	2	1	0	0	1	0	0	100.0	1.976	0.17	0.43	0.00
												Statewide Crash Rate:	0.13	
18822	0560286 - 0.45	Int of FORE ST INDIA ST	2	7	0	0	0	3	4	42.9	3.565	0.65	0.41	1.60
												Statewide Crash Rate:	0.15	
15397	0561001 - 0	Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER	9	8	0	0	0	3	5	37.5	4.896	0.54	1.19	0.00
												Statewide Crash Rate:	0.67	
18821	0561001 - 0.11	Int of COMMERCIAL ST INDIA ST	2	0	0	0	0	0	0	0.0	2.210	0.00	0.46	0.00
												Statewide Crash Rate:	0.15	
18517	0001A - 11.88	Int of FORE ST FRANKLIN ST	9	8	0	0	1	3	4	50.0	3.590	0.74	1.27	0.00
												Statewide Crash Rate:	0.67	
18518	0001A - 11.94	Int of FRANKLIN ST MIDDLE ST	9	20	0	0	1	5	14	30.0	5.287	1.26	1.17	1.08
												Statewide Crash Rate:	0.67	
18519	001AS - 1.91	Int of CONGRESS ST, FRANKLIN ST	9	11	0	1	1	2	7	36.4	7.631	0.48	1.09	0.00
												Statewide Crash Rate:	0.67	
18819	0561002 - 0	Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV	9	11	0	0	1	0	10	9.1	4.593	0.80	1.20	0.00
												Statewide Crash Rate:	0.67	
18798	0560524 - 0.14	Int of FEDERAL ST E MOUNTFORT ST	2	2	0	0	0	0	2	0.0	0.513	1.30	0.59	2.19
												Statewide Crash Rate:	0.14	
18802	0560524 - 0.17	Int of MOUNTFORT ST NEWBURY ST	2	0	0	0	0	0	0	0.0	0.449	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
Study Years:	3.00	NODE TOTALS:		150	0	2	11	32	105	30.0	105.383	0.47	0.51	0.92

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18520	63224	3118814	0 - 0.03	0561238 - 0.77	0.03	2	1	0	0	0	0	1	0.0	0.00107	312.57	683.74	0.00
Int of CUMBERLAND AV FRANKLIN ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
63224	18919	3115972	0 - 0.04	0561238 - 0.80	0.04	2	3	0	0	0	0	3	0.0	0.00106	940.32	684.19	1.37
Int of CUMBERLAND AV FRANKLIN ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18910	18919	3129300	0 - 0.03	0561238 - 0.84	0.03	2	7	0	0	0	2	5	28.6	0.00077	3047.62	737.95	4.13
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18910	18922	3118713	0 - 0.02	0561238 - 0.87	0.02	2	1	0	0	0	0	1	0.0	0.00049	678.28	804.41	0.00
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18915	18922	3117967	0 - 0.05	0561238 - 0.89	0.05	2	5	0	0	0	0	5	0.0	0.00120	1394.48	665.03	2.10
Int of CUMBERLAND AV, SMITH ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18915	19463	3131702	0 - 0.04	0561238 - 0.94	0.04	2	0	0	0	0	0	0	0.0	0.00088	0.00	715.17	0.00
Int of CUMBERLAND AV, SMITH ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18912	19463	194577	0 - 0.01	0561238 - 0.98	0.01	2	0	0	0	0	0	0	0.0	0.00021	0.00	850.21	0.00
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18912	18937	3130202	0 - 0.02	0561238 - 0.99	0.02	2	1	0	0	0	0	1	0.0	0.00040	835.08	829.57	1.01
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18937	19042	3131703	0 - 0.03	0561238 - 1.01	0.03	2	3	0	0	0	0	3	0.0	0.00059	1686.50	777.77	2.17
Int of CLEEVE ST CUMBERLAND AV				RD INV 05 61238											Statewide Crash Rate: 198.45		
18819	18913	3131697	0 - 0.03	0560160 - 0.52	0.03	2	1	0	0	0	0	1	0.0	0.00111	300.18	677.09	0.00
Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV				RD INV 05 60160											Statewide Crash Rate: 198.45		
18913	18914	194578	0 - 0.05	0560160 - 0.55	0.05	2	4	0	0	0	1	2	33.3	0.00189	706.78	592.48	1.19
Int of CONGRESS ST MONTGOMERY ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18823	18914	3118711	0 - 0.03	0560160 - 0.60	0.03	2	1	0	0	0	0	1	0.0	0.00117	284.21	668.12	0.00
Int of CONGRESS ST INDIA ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18823	18911	3120757	0 - 0.04	0560160 - 0.63	0.04	2	4	0	0	1	2	1	75.0	0.00116	1150.76	670.11	1.72
Int of CONGRESS ST INDIA ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18799	18911	3123999	0 - 0.04	0560160 - 0.67	0.04	2	2	0	0	0	0	2	0.0	0.00120	557.40	664.91	0.00
Int of CONGRESS ST HAMPSHIRE ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
63225	18799	3115974	0 - 0.05	0560160 - 0.71	0.05	2	1	0	0	0	1	0	100.0	0.00174	191.54	604.90	0.00
Int of CONGRESS ST FRANKLIN ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18519	63225	3115973	0 - 0.03	0560160 - 0.76	0.03	2	0	0	0	0	0	0	0.0	0.00128	0.00	654.44	0.00
Int of CONGRESS ST, FRANKLIN ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18794	18795	194384	0 - 0.02	0561110 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00000	0.00	-	0.00
End of FEDERAL ST E				RD INV 05 61110											Statewide Crash Rate: 384.19	42194.82	
18795	18796	194385	0 - 0.08	0561110 - 0.02	0.08	2	1	0	0	0	0	1	0.0	0.00024	1372.06	1568.43	0.00
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 61110											Statewide Crash Rate: 384.19		
18796	18797	194388	0 - 0.10	0561110 - 0.10	0.10	2	1	0	0	0	0	1	0.0	0.00011	2936.47	1652.05	1.78
Int of FEDERAL ST E INDIA ST				RD INV 05 61110											Statewide Crash Rate: 384.19		
18797	18798	194391	0 - 0.10	0561110 - 0.20	0.10	2	1	0	0	0	0	0	0.0	0.00006	5930.14	1307.34	4.54
Int of FEDERAL ST E HANCOCK ST				RD INV 05 61110											Statewide Crash Rate: 384.19		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18800	18805	194398	0 - 0.03	0560531 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00000	0.00	-	0.00
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19	30403.77	
18800	18804	194397	0 - 0.08	0560531 - 0.03	0.08	2	4	0	0	0	0	4	0.0	0.00008	15800.03	1582.54	9.98
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18803	18804	194402	0 - 0.08	0560531 - 0.11	0.08	2	1	0	0	0	0	1	0.0	0.00011	3119.00	1644.54	1.90
Int of HANCOCK ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18802	18803	194400	0 - 0.08	0560531 - 0.19	0.08	2	1	0	0	0	0	1	0.0	0.00006	5212.57	1423.30	3.66
Int of MOUNTFORT ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18518	18801	194025	0 - 0.06	0560505 - 0.27	0.06	2	2	0	0	0	1	1	50.0	0.00075	885.18	1225.13	0.00
Int of FRANKLIN ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18801	18817	194399	0 - 0.06	0560505 - 0.33	0.06	2	3	0	0	1	0	2	33.3	0.00017	5854.12	1638.94	3.57
0509221 POR,MIDDLE,HAMPSHIRE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18817	18818	194423	0 - 0.08	0560505 - 0.39	0.08	2	0	0	0	0	0	0	0.0	0.00032	0.00	1495.09	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18820	18836	3131698	0 - 0.20	0560286 - 0.08	0.20	2	5	0	0	2	0	3	40.0	0.00336	495.47	433.67	1.14
Int of FORE ST, MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
18820	18822	3106815	0 - 0.17	0560286 - 0.28	0.17	2	9	0	0	1	1	7	22.2	0.00323	929.24	438.31	2.12
Int of FORE ST, MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
18517	18822	3106667	0 - 0.11	0560286 - 0.45	0.11	2	2	0	0	0	0	2	0.0	0.00155	429.61	528.74	0.00
Int of FORE ST FRANKLIN ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
15397	18821	3106035	0 - 0.11	0561001 - 0	0.11	2	3	0	0	0	0	2	0.0	0.00260	385.13	545.43	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				RD INV 05 61001											Statewide Crash Rate: 198.45		
15397	18517	3123025	0 - 0.08	0001A - 11.80	0.08	2	1	0	0	0	1	0	100.0	0.00076	439.06	739.30	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1A											Statewide Crash Rate: 198.45		
18517	18518	3118954	0 - 0.06	0001A - 11.88	0.06	2	0	0	0	0	0	0	0.0	0.00078	0.00	734.26	0.00
Int of FORE ST FRANKLIN ST				US 1A											Statewide Crash Rate: 198.45		
18518	63225	3121455	0 - 0.16	0001A - 11.94	0.16	2	0	0	0	0	0	0	0.0	0.00337	0.00	509.80	0.00
Int of FRANKLIN ST MIDDLE ST				US 1A											Statewide Crash Rate: 198.45		
63225	63224	2566764	0 - 0.09	0001A - 12.10	0.09	2	2	0	0	0	1	1	50.0	0.00319	208.87	517.08	0.00
Int of CONGRESS ST FRANKLIN ST				US 1A											Statewide Crash Rate: 198.45		
18519	18520	3106670	0 - 0.09	001AS - 1.82	0.09	2	3	0	0	0	0	3	0.0	0.00326	306.28	514.07	0.00
Int of CONGRESS ST, FRANKLIN ST				US 1AS											Statewide Crash Rate: 198.45		
18518	18519	3106668	0 - 0.16	001AS - 1.91	0.16	2	1	0	0	1	0	0	100.0	0.00358	93.20	502.19	0.00
Int of FRANKLIN ST MIDDLE ST				US 1AS											Statewide Crash Rate: 198.45		
18517	18518	3118912	0 - 0.06	001AS - 2.07	0.06	2	2	0	0	1	0	1	50.0	0.00078	853.42	734.71	1.16
Int of FORE ST FRANKLIN ST				US 1AS											Statewide Crash Rate: 198.45		
15397	18517	3100256	0 - 0.08	001AS - 2.13	0.08	2	1	0	0	0	0	1	0.0	0.00107	312.58	683.74	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1AS											Statewide Crash Rate: 198.45		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18819	19042	3106814	0 - 0.06	0561002 - 0	0.06	2	4	0	0	0	0	4	0.0	0.00174	764.28	604.53	1.26
Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV				RD INV 05 61002											Statewide Crash Rate: 198.45		
18798	18819	194394	0 - 0.14	0560524 - 0	0.14	2	1	0	0	0	0	1	0.0	0.00073	455.85	1234.29	0.00
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18798	18802	194393	0 - 0.03	0560524 - 0.14	0.03	2	0	0	0	0	0	0	0.0	0.00013	0.00	1658.64	0.00
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18802	18820	194401	0 - 0.05	0560524 - 0.17	0.05	2	6	0	0	0	0	5	0.0	0.00019	10807.60	1626.49	6.64
Int of MOUNTFORT ST NEWBURY ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18912	18913	194575	0 - 0.05	0560510 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00005	0.00	1109.01	0.00
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 60510											Statewide Crash Rate: 384.19		
18914	18915	194579	0 - 0.06	0560666 - 0	0.06	2	1	0	0	0	1	0	100.0	0.00011	3074.89	1646.59	1.87
Int of CONGRESS ST SMITH ST				RD INV 05 60666											Statewide Crash Rate: 384.19		
18910	18911	194572	0 - 0.07	0560451 - 0	0.07	2	3	0	0	0	0	3	0.0	0.00009	10902.21	1610.95	6.77
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 60451											Statewide Crash Rate: 384.19		
18795	18799	194386	0 - 0.06	0560342 - 0.10	0.06	2	0	0	0	0	0	0	0.0	0.00007	0.00	1482.15	0.00
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18795	18800	194387	0 - 0.05	0560342 - 0.05	0.05	2	1	0	0	0	0	1	0.0	0.00012	2805.66	1655.82	1.69
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18800	18801	194396	0 - 0.05	0560342 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00010	0.00	1630.72	0.00
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18821	18822	3106816	0 - 0.06	0561000 - 0.23	0.06	2	0	0	0	0	0	0	0.0	0.00124	0.00	659.57	0.00
Int of COMMERCIAL ST INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18817	18822	3106813	0 - 0.05	0561000 - 0.18	0.05	2	1	0	0	0	0	1	0.0	0.00088	378.86	715.36	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18804	18817	3122291	0 - 0.05	0561000 - 0.13	0.05	2	3	0	0	1	0	1	50.0	0.00099	1008.74	695.75	1.45
Int of INDIA ST NEWBURY ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18796	18804	3130049	0 - 0.05	0561000 - 0.08	0.05	2	3	0	0	0	0	3	0.0	0.00112	889.95	675.15	1.32
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18796	18823	3106811	0 - 0.08	0561000 - 0	0.08	2	2	0	0	0	0	2	0.0	0.00189	353.64	592.58	0.00
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18803	18818	194403	0 - 0.05	0560344 - 0.04	0.05	2	0	0	0	0	0	0	0.0	0.00007	0.00	1518.66	0.00
Int of HANCOCK ST NEWBURY ST				RD INV 05 60344											Statewide Crash Rate: 384.19		
18797	18803	194392	0 - 0.04	0560344 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00006	0.00	1288.27	0.00
Int of FEDERAL ST E HANCOCK ST				RD INV 05 60344											Statewide Crash Rate: 384.19		
Study Years: 3.00				Section Totals:	3.68		102	0	0	8	11	78	18.6	0.05523	615.59	292.48	2.10
				Grand Totals:	3.68		252	0	2	19	43	183	25.4	0.05523	1520.87	412.47	3.69

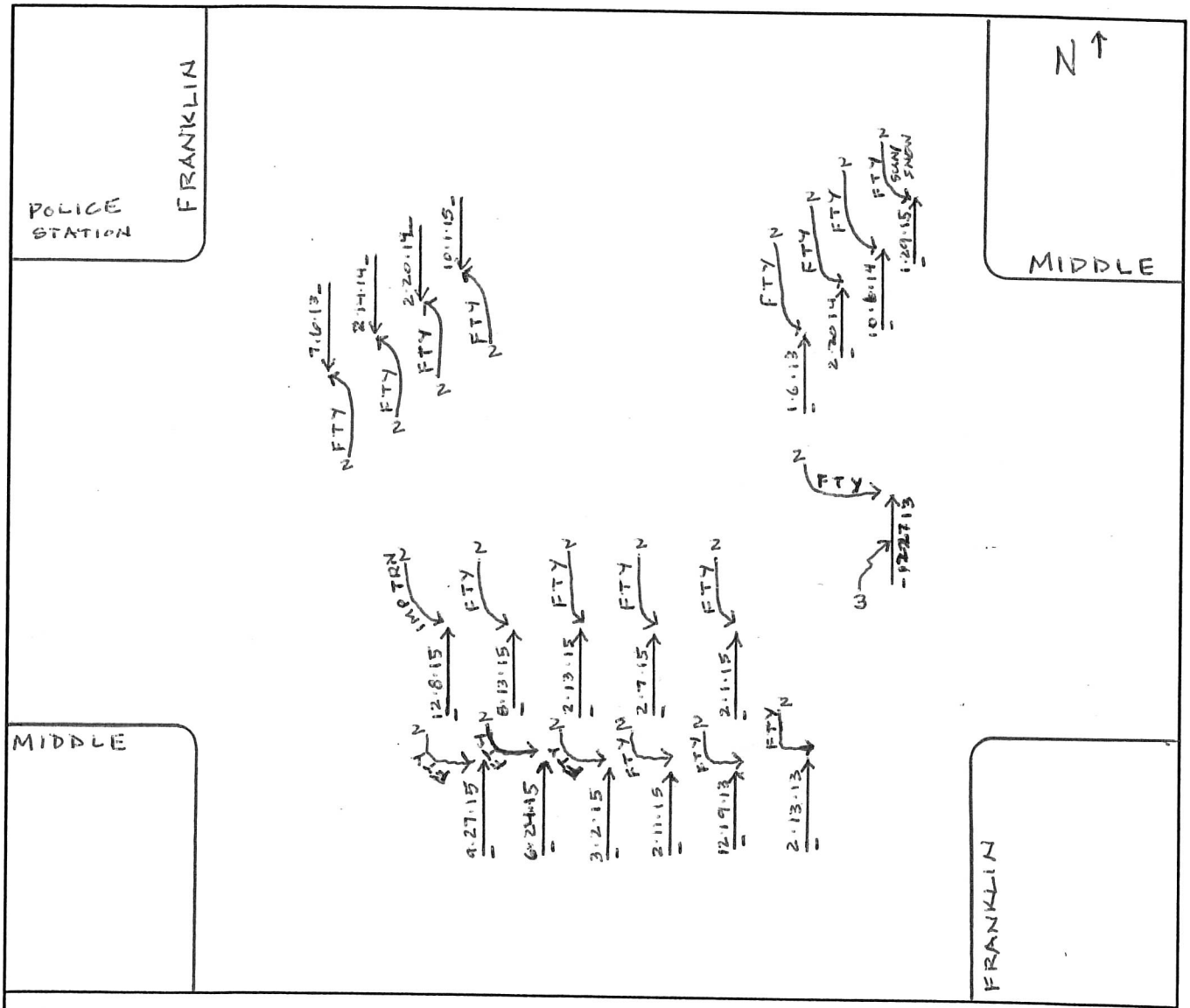
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Franklin & Middle Streets

TOWN Portland, Maine NODE NO(S) 18518

YEARS REVIEWED 2013 - 2015 DATE PREPARED 08.29.2016



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT OR FACTOR
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER

C - CLEAR
SL - SLEET
F - FOG
S - SNOW
R - RAIN
CL - CLOUDY
XW - CROSS WINDS

INJURIES

K - FATAL
A - INCAPACITATING
B - NON-INCAPACITATING
C - POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Franklin & Middle Streets

TOWN Portland, ME NODE NO(S) 18518

YEARS REVIEWED 2013 - 2015 DATE PREPARED 08·29·2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
00076	01·06·13	08:55	-	-	-	1	2	2	2	
000535	02·13·13	06:41	-	-	-	-	2	2	2	
001912	07·06·13	13:08	-	-	-	-	2	1	2	
003722	12·19·13	19:47	-	-	-	-	4	2	2	
003801	12·27·13	08:55	-	-	-	-	2	3	2	
000570	02·14·14	07:56	-	-	-	1	2	3	2	
000702	02·20·14	12:46	-	-	-	-	2	2	2	
000703	02·20·14	12:50	-	-	-	-	2	2	2	
002950	10·06·14	18:10	-	-	-	-	2	1	2	
000362	01·29·15	07:48	-	-	-	1	2	3	2/19	
000442	02·01·15	16:15	-	-	-	1	2	3	2	
000617	02·07·15	14:49	-	-	-	-	2	2	2	
000724	02·11·15	13:04	-	-	-	-	2	2	2	
000769	02·13·15	08:22	-	-	-	-	2	2	2	
001020	03·02·15	14:59	-	-	-	-	2	1	2	
002165	06·24·15	09:30	-	-	-	1	2	1	2	
002716	08·13·15	08:15	-	-	-	-	2	1	2	
003242	09·27·15	10:32	-	-	1	-	2	1	2	
003298	10·01·15	08:45	-	-	-	-	2	1	2	
004095	12·08·15	10:31	-	-	-	-	2	1	10	

S:/SHEETS/COLLISION DIAGRAM.DWG

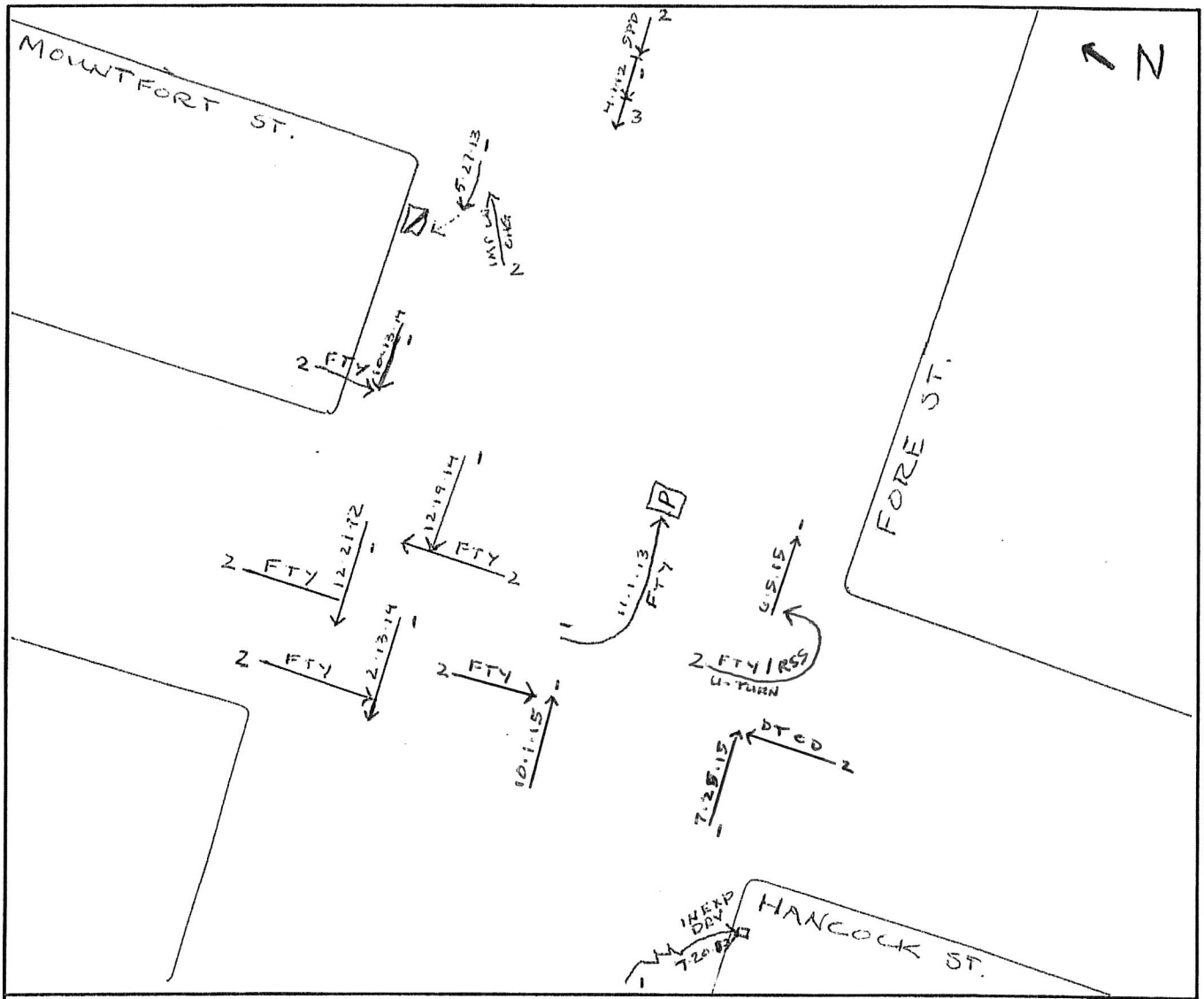
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Fore Street & Hancock Street

TOWN Portland, Maine NODE NO(S) 18820 to 18822

YEARS REVIEWED 2012 - 2015 DATE PREPARED 08.29.2016



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/PROJECTS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Fore Street & Hancock Street

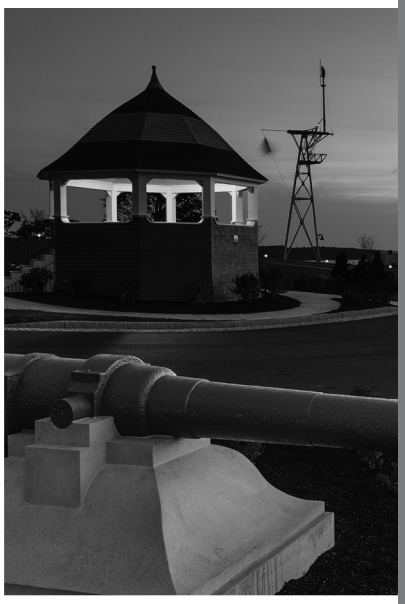
TOWN Portland NODE NO(S) 18820 to 18822

YEARS REVIEWED 2012 - 2015 DATE PREPARED 08.29.2016

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
00781	04.01.12	02:55	-	-	-	1	4	1	3	
003253	12.21.12	16:53	-	-	-	2	4	2	2	
001534	05.27.13	12:40	-	-	-	1	2	1	8	
002062	07.20.13	10:29	-	-	-	-	2	1	15	Student Driver
003090	11.01.13	15:30	-	1	-	-	2	1	2	
000550	02.13.14	10:03	-	-	-	-	2	2	2	
003007	10.13.14	10:09	-	-	-	-	2	1	2	
003756	12.19.14	15:09	-	-	-	-	2	1	2	
001962	06.05.15	10:35	-	-	-	-	2	1	2/5	U-Turn
002518	07.25.15	17:59	-	-	-	-	2	1	5	
003289	10.01.15	13:11	-	-	-	-	2	2	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

Relationships.
Responsiveness.
Results.



Traffic Permit Application Request for Scoping Meeting 58 Fore Street Redevelopment Portland, Maine

PREPARED FOR:

CPB2
PO Box 7987
Portland, ME 04112

September 2016

SUBMITTED BY:

Gorrill Palmer
707 Sable Oaks Drive
Suite 30
So. Portland, ME 04106
207.772.2515

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

September 16, 2016

Ms. Christine Grimando
City of Portland Planning Division
389 Congress Street, 4th Floor
Portland, Maine 04101

RE: Application for Traffic Movement Permit
58 Fore Street Redevelopment
Portland, Maine

Dear Ms. Grimando,

Gorrill Palmer (GP) has been retained by CPB2 LLC to prepare this Traffic Movement Permit Application for the proposed 58 Fore Street redevelopment project located at the site of the Portland Company in Portland, Maine.

We have attached the following information in support of this application:

- Sections 1-6
- Signed application form
- Notice of intent to file
- List of abutters (under separate cover)
- $1,500 application fee (under separate cover)

Section 7 (Traffic Impact Study) of the application is also being submitted under separate cover. Please contact our office with any questions regarding this application.

Sincerely,

Gorrill Palmer

Randy Dunton, PE, PTOE
Project Manager

Copy: Jim Brady, CPB2 Management LLC
David Senus, Woodard & Curran
Timothy Soucie, MaineDOT Region 1 Traffic Engineer

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 12/99
ID#_____

Total Fees:_____
Date Received: _____

****

PERMIT APPLICATION – TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. §704-A

Please type or print:

This application is for (check all that apply): Traffic 100-200 PCE's ☐ Traffic 200 + PCE's ☒

Name of Applicant: **CPB2 LLC Attn: Mr. James Brady**

Address: PO Box 7987 Portland, ME 04112 Telephone: (207) 558-3704

Name of local contact or agent: **Randy Dunton – Gorrill Palmer**

Address: **707 Sable Oaks Drive, Suite 30, South Portland, ME 04106**

Telephone: **(207) 772-2515**

Name and type of development: 58 Fore Street mixed use development. Total of approximately 960,000 sf of building area consisting of office space, hotel, residential units, retail, restaurant space, and a marina.

Location of development including road, street, or nearest route number: **The site is located at 58 Fore Street at the Portland Company site on the Portland Waterfront.**

City/~~Town~~/~~Plantation~~: **Portland** County: **Cumberland** Tax Maps: **018** Lots: **A001, A003**

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? **No**

Was this development started prior to obtaining a traffic permit? **No**

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30-A, chapter 187)?
Yes X No _____

Is this project located within a compact area of an urban compact municipality? Yes X No _____

Is this development or any portion of the site currently subject to state or municipal enforcement action?

None Known

Existing DEP or MDOT permit number (if applicable): Delegated review is to the City

Name(s) DOT staff person(s) contacted concerning this application **None**

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applicants: **N/A**

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 12/99
ID#_____

Total Fees:_____
Date Received: _____

CERTIFICATION

This person responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the applicant for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: _____

Name (print): **Randall E. Dunton** Engineer: **Maine PE # 8680**

Date: 9/12/16 Other: _____

STATE OF MAINE
RANDALL E. DUNTON
No. 8680
LICENSED
PROFESSIONAL ENGINEER

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

_____ 9/9/16

Signature of applicant Date

Form C 7/97

NOTICE OF INTENT TO FILE

Please take notice that:

CPB2 LLC (Attn: Mr. James Brady)
PO Box 7987
Portland, ME 04112

is intending to file a MaineDOT Traffic Permit application with the City of Portland (Delegated Review Authority) pursuant to the provisions of 23 M.R.S.A. §704 – A on or about September 16, 2016.

This application is for:

The development of the 58 Fore Street in Portland, Maine. The proposed development is to include 123,917 sf of office space, 50,273 sf of retail, 3,800 sf of restaurant, 638 residential units, a 132 room hotel, and a 2,600 marina with 220 slips. The project is forecast to generate 424 and 474 AM and PM weekday peak hour trip ends respectively. The project is expected to open in 2027.

At the following location:

The site is located at 58 Fore Street, at the site of the historic Portland Company.

A request for a public hearing must be received by the City, in writing no later than 20 days after the application is found by the department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Transportation's office in Scarborough (Region 1) during normal working hours. A copy of the application may also be seen at the municipal offices in Portland, Maine.

Written public comments may be sent to the following address: Attention Christine Grimando, Planning Division, 389 Congress Street, Portland, Maine 04101.

Randy Dunton

Randall Dunton, P.E., PTOE
Gorrill-Palmer Consulting Engineers, Inc.

STATE OF MAINE
RANDALL E. DUNTON
No. 8686
LICENSED
PROFESSIONAL ENGINEER

Sept 15, 2016

Section 1
Site and Traffic Information

1.A. Site Description and Site Plan

The site is located at 58 Fore Street, at the site of the historic Portland Company along Portland's Eastern Waterfront. The site is identified on City Tax Map 18, Lots A001 and A003. A proposed site plan is included in Attachment 1A.

1.B. Existing and Proposed Site Uses

The existing site has several buildings that were part of the Portland Company site. The proposed mixed-use project consists of a total of 958,679 sf of building area divided into seven Development Blocks (B1-B7) with varying uses. The following table summarizes the proposed site uses by Development Block:

Proposed Site Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function Space	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

The new marina facilities on B7 are proposed to be three times the size of the existing marina. It will be a new, modern facility with 220 slips proposed; 140 for seasonal boaters and 80 for transient vessels. The facility will service residents of Portland (including Islanders commuting to work on the Portland Peninsula), residents of the 58 Fore Street site, and transient boaters.

Vehicular access to the site will be via Thames Street Extension into the site, a full movement driveway onto Fore Street across from Waterville Street, primarily for residential units, and a new public road connecting Fore Street to Thames Street Extension. On-site parking will be provided with a below grade parking garage and on-street parking through the site.

1.C. Site Vicinity and Boundaries

The site is bordered by Fore Street, the Portland Waterfront, a small residential area to the northeast, and a commercial area to the southwest. A site location map showing the development area is included in Attachment 1B.

1.D. Proposed Uses in the Vicinity of the Proposed Development

Approved projects that are not yet opened as well as projects for which applications have been filed are required to be included in the predevelopment volumes for this project. Based on conversations with City Staff, traffic from the following developments should be included in the background traffic:

- A – 158 Fore Street: 180 room hotel
- B – 1 India Street: office and bank
- C – 185 Fore Street: 4,085 sf of office or retail and 8 residential units
- D – 16 Middle Street: 5,305 sf of retail and 39,526 of office
- E – 113 Newbury Street: 39 condominium units
- F – 48 Hancock Street: 2 residential units
- G – 49 Hancock Street: 2 residential units
- H – 62 India Street: 5,409 sf of retail and 29 condominium units
- I – 169 Newbury Street: 24 condominium units
- J – 273 Congress Street: 2,290 sf of retail and 10 condominium units
- K – 31 Fore Street: 4 condominium units

The locations, sizes, and uses of these developments are shown on the attached Other Development Figure (Attachment 1C).

I.E. Trip Generation

The trip generation for the site was calculated separately for Development Blocks 1-6 (B1-B6) and for Development Block 7 (B7), then combined to yield the total site trip generation. This is due to the unique nature of the marina on B7. The following is a summary of the methods, assumptions, and results of the trip generation calculations for the site.

Development Blocks 1-6

The Institute of Transportation Engineers' publication, *Trip Generation*, Seventh Edition, was used to forecast the traffic to be generated by B1-B6. The Ninth Edition is available, but has not yet been accepted by the MaineDOT. The following table summarizes the trip generation for B1-B6.

Development Blocks 1-6 ITE Trip Generation Summary

Development Block	LUC	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
B1								
	814 – Specialty Retail	7,878 SF	4	2	6	9	12	21
	220 – Apartment	91 Units	9	37	46	36	20	56
	710 – General Office	79,000 SF	140	15	155	22	127	149
B2								
	814 – Specialty Retail	26,895 SF	12	8	20	33	40	73
	220 – Apartment	19 Units	2	8	10	8	4	12
	710 – General Office	25,617 SF	57	6	63	9	52	61
B3								
	814 – Specialty Retail	11,500 SF	5	4	9	14	17	31
	710 – General Office	19,300 SF	45	5	50	7	41	48
B4								
	220 – Apartment	275 Units	28	112	140	111	60	171
	814 – Specialty Retail	4,000 SF	2	1	3	5	6	11
B5								
	230 – Residential Condominium / Townhouse	108 Units	7	41	48	36	20	56
	310 – Hotel	132 Rooms	44	30	74	43	35	78
	932 – High Turnover Sit-Down Restaurant	3,800 SF	22	22	44	25	16	41
	Function Space*	5,800 SF	0	0	0	0	0	0
B6								
	230 – Residential Condominium / Townhouse	131 Units	9	49	58	44	24	68
	220 - Apartment	14 Units	1	6	7	6	3	9
Total Development Blocks 1-6			**387**	**346**	**387**	**346**	**733**	**408**

*It was assumed that the function space would be ancillary to the other uses in the Development Block and would not generate additional traffic.

Due to the variety of uses and the site's location within a downtown area, two reductions can be applied to refine the trip generation for B1-B6. These reductions are summarized as follows:

Shared Use Adjustment

Due to the close proximity of the mixed uses and the sharing of people between uses, simply adding the trip generation of each use as if they were isolated would result in an overestimate of trip generation. To estimate the traffic that will visit more than one destination without leaving the site, GP utilized the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool. The NCHRP 684 spreadsheet uses the ITE forecast trip generation for each type of land use (office, retail, restaurant, residential, hotel, and other) and estimates the trips that will travel between two uses without leaving the site. This yields an internal trip capture percentage, which is the percentage of trip ends that will travel between two uses. The following tables summarize the AM and PM peak hour internal trip capture percentages respectively.

AM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends		
	Enter	Exit	Enter	Exit	Enter	Exit	Total
Office	242	26	10%	46%	23	12	35
Retail	23	15	57%	47%	13	7	20
Restaurant	22	22	55%	50%	12	11	23
Residential	56	253	4%	5%	2	12	14
Hotel	44	30	2%	30%	1	9	10
Total	387	346	13%	15%	51	51	102

*These values are taken directly from the NCHRP spreadsheets (Attachment 1D), which may not match exact calculations due to rounding in the spreadsheet.

PM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends		
	Enter	Exit	Enter	Exit	Enter	Exit	Total
Office	38	220	18%	5%	7	10	17
Retail	61	75	31%	44%	19	33	52
Restaurant	25	16	52%	69%	13	11	24
Residential	241	131	11%	15%	27	19	46
Hotel	43	35	21%	6%	9	2	11
Total	408	477	18%	16%	75	75	150

*These values are taken directly from the NCHRP spreadsheets (Attachment 1D), which may not match exact calculations due to rounding in the spreadsheet.

As shown in the tables, the NCHRP 684 Internal Trip Capture Estimation Tool results in a reduction of 102 trip ends during the AM peak hour and 150 trip ends during the PM peak hour.

Other Modes of Transportation Reduction

It can be expected for a site in a downtown area that other modes of transportation will be used to go to and from the site. These other modes could include things such as transit, bicycle, or walking. This site is adjacent to an existing bus route, as well as located on a pedestrian and bicycle path. The other modes reduction for B1-B6 is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract for the City of Portland. Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, used this data to create maps (Attachment 1D) that show the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to travel to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the individual tracts. The reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number of working people in the same three Census Tracts. This calculation yields a reduction of 35.8%, which appears reasonable for this area. The detailed calculation is described in the "Site Parking Demand" memo included in Attachment 1D.

The Census data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site, but not necessarily the proposed restaurant and hotel. The restaurants and hotel were further researched to find studies that included information on other modes of transportation for restaurants and hotels. The studies found indicated that 40%-65% of restaurant customers may be using alternative modes of transportation. Since the studies were not specific to Portland, Maine, the local data is expected to be closer to actual conditions that would be seen at the 58 Fore Street development, so the 35.8% reduction was applied to the restaurants. There was limited data available for hotels, so a conservative reduction of 10% was used for the hotel. The studies are discussed in more detail in the "Site Parking Demand" memo in Attachment 1D. The following table summarizes the other modes of transportation reduction for the site trip generation:

Other Modes of Transportation Reduction Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 Trip Generation	387	346	733	408	477	885
Hotel Trip Generation	44	30	74	43	35	78
B1-B6 Trip Generation w/o Hotel	343	316	659	365	442	807
Other Modes Reduction (35.8% of B1-B6 Trip Generation w/o Hotel)	123	113	236	131	158	289
Hotel Other Modes Reduction (10% of Hotel Trip Generation)	4	3	7	4	4	8
Total Other Modes Reduction	**127**	**116**	**243**	**135**	**162**	**297**

Development Block 7 (Marina)

Although the ITE does have a Marina category, the number of studies (2) is limited. Therefore, the trip generation for B7 was not determined using the ITE trip generation rates. Since a marina is such a unique facility, the trip generation was forecast based on the characteristics of this specific 220 slip marina. Applied Technology & Management (ATM), experts in marine and coastal engineering, provided the following information and assumptions:

- Peak weekday usage of the marina is approximately 10% of the slips, but possibly more since Maine's peak boating season is shorter than other areas
- Approximately 36% of daily users are transient boaters (80 transient boater slips out of 220 total slips)
- 10% of daily users who are not transient boaters are on-site residents
- 90% of daily users who are not transient boaters are off-site Portland residents
- 30% of off-site Portland residents are Islanders commuting to and from the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Based on the information from ATM, the following assumptions were made:

- Peak weekday usage will be 15% of the slips (33 slips) to be conservative
- Transient boaters will not have a car on site since they arrive and depart using their boat, so they will not generate trip ends
- On-site residents will not enter or exit the site to visit the marina, so they will not generate any trip ends
- Each slip used by an off-site Portland resident who is not an islander will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each slip used by an Islander commuting to work will generate one trip end out during the AM peak hour and one trip end in during the PM peak hour
- Each employee will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each mega-yacht slip would be visited by a provisioning vehicle during both peak hour and the provisioning vehicles would enter and exit the site during the peak hour

Based on these assumptions, the forecast weekday peak hour trip generation for the marina is as follows:

- AM Peak Hour: 36 trip ends (26 in / 10 out)
- PM Peak Hour: 36 trip ends (10 in / 26 out)

The detailed trip generation calculations are in Attachment 1D.

Two reductions were applied to the trip generation for B1-B6, however those reductions were not applied to the marina trip generation. Although it is possible for marina visitors to eat at the restaurant or visit the shops on the site, to be conservative it was assumed that the marina would be a primary destination and would have very few shared trips. Additionally, there is a possibility that marina users would use alternative modes of transportation to get to or from the site, but it is more conservative to assume that most visitors would use cars and not another mode of transportation.

Total Site Trip Generation

The following table summarizes the adjusted site trip generation starting with the ITE trip generation and subtracting the shared use reduction as well as the other modes of transportation reduction and lastly adding the marina trip generation:

Adjusted Trip Generation Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
B1-B6 ITE Subtotal	387	346	733	408	477	885
Shared Use Adjustment	-51	-51	-102	-75	-75	-150
Other Modes Adjustment	-127	-116	-243	-135	-162	-297
B1-B6 Total	**209**	**179**	**388**	**198**	**240**	**438**
B7 Trip Generation	26	10	36	10	26	36
Site Total	**235**	**189**	**424**	**208**	**266**	**474**

As shown in the table, the proposed development is forecast to generate 424 trip ends during the AM weekday peak hour and 474 trip ends during the PM weekday peak hour. To be conservative, this trip generation does not include any credit for existing on-site uses. This level of trip generation does require a MaineDOT Traffic Movement Permit because it is over 99 trip ends during the peak hour. The Traffic Movement Permit Application can be reviewed and issued by the City since they have delegated review authority.

A trip end is defined as a trip into or out of the site; thus a round trip is equal to two trip ends. Since the forecast traffic exceeds 99 trip ends during a peak hour, a Traffic Movement Permit is required. The Traffic Movement Permit Application can be reviewed and issued by the City since they have delegated review authority. A copy of the trip generation calculations are included in Attachment 1D.

1.F. Trip Distribution

Based on ITE's *Trip Generation*, the NCHRP 684 Internal Capture, the other modes reduction, and the marina information the following trip distribution is anticipated:

- AM Peak Hour Adjacent Street: 235 in / 189 out
- PM Peak Hour Adjacent Street: 208 in / 266 out

1.G. Trip Composition and Assignment

GP has assumed that all trips are primary in nature and made for the sole purpose of going to and from the site. The trip assignment has been based on the proposed driveway locations, the site uses, and the traffic counts completed at the study area intersections. The trip assignment has been separated into Residential and Non-Residential trip distributions. The trip assignments are categorized into Residential, Non-Residential, and Marina. The residential trip assignment assumes that the residents of the site know the neighborhood better than the non-residential site visitors, which would lead residents to use side streets more frequently, while the non-residents would use more major roads

and posted routes. The marina trip assignment is assumed to follow the non-residential trip distribution. The trip distribution and assignment is shown on the attached Figures 6-11 in Attachment 1B.

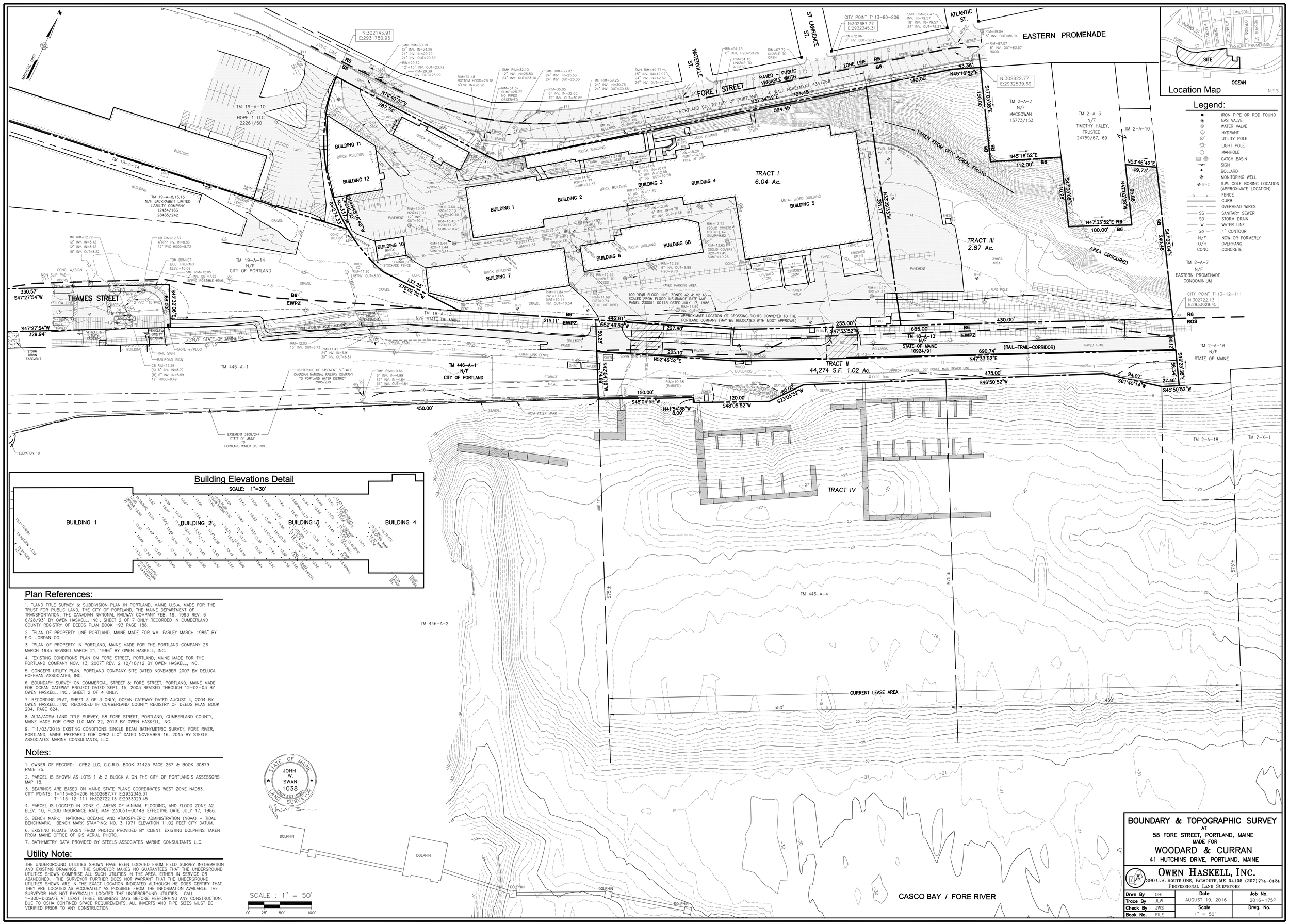
1.H. Attachments

Attachment 1A – Site Survey, Proposed Site Plan
Attachment 1B – Site Location Map, Trip Assignment Diagrams
Attachment 1C – Other Development Map
Attachment 1D – ITE Trip Generation Calculations, NCHRP 684 Spreadsheets, Commute Data Maps, *Site Parking Demand* Memo, Marina Trip Generation Calculations

Attachment 1A

Site Survey

Proposed Site Plan



Plan References:

1. "LAND TITLE SURVEY & SUBDIVISION PLAN IN PORTLAND, MAINE U.S.A. MADE FOR THE TRUST FOR PUBLIC LAND, THE CITY OF PORTLAND, THE MAINE DEPARTMENT OF TRANSPORTATION, THE CANADIAN NATIONAL RAILWAY COMPANY FEB. 19, 1993 REV. 6 6/28/93" BY OWEN HASKELL, INC., SHEET 2 OF 7 ONLY RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 193 PAGE 188.
2. "PLAN OF PROPERTY LINE PORTLAND, MAINE MADE FOR WM. FARLEY MARCH 1985" BY E.C. JORDAN CO.
3. "PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR THE PORTLAND COMPANY 26 MARCH 1985 REVISED MARCH 21, 1996" BY OWEN HASKELL, INC.
4. "EXISTING CONDITIONS PLAN ON FORE STREET, PORTLAND, MAINE MADE FOR THE PORTLAND COMPANY NOV. 13, 2007" REV. 2 12/18/12 BY OWEN HASKELL, INC.
5. CONCEPT UTILITY PLAN, PORTLAND COMPANY SITE DATED NOVEMBER 2007 BY DELUCA HOFFMAN ASSOCIATES, INC.
6. BOUNDARY SURVEY ON COMMERCIAL STREET & FORE STREET, PORTLAND, MAINE MADE FOR OCEAN GATEWAY PROJECT DATED SEPT. 15, 2003 REVISED THROUGH 12-02-03 BY OWEN HASKELL, INC., SHEET 2 OF 4 ONLY.
7. RECORDING PLAT, SHEET 3 OF 3 ONLY, OCEAN GATEWAY DATED AUGUST 4, 2004 BY OWEN HASKELL, INC. RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 204, PAGE 624.
8. ALTA/ACSM LAND TITLE SURVEY, 58 FORE STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR CPB2 LLC MAY 22, 2013 BY OWEN HASKELL, INC.
9. "11/03/2015 EXISTING CONDITIONS SINGLE BEAM BATHYMETRIC SURVEY, FORE RIVER, PORTLAND, MAINE PREPARED FOR CPB2 LLC" DATED NOVEMBER 16, 2015 BY STEELE ASSOCIATES MARINE CONSULTANTS, LLC.

Notes:

1. OWNER OF RECORD: CPB2 LLC, C.C.R.D. BOOK 31425 PAGE 267 & BOOK 30879 PAGE 75.
2. PARCEL IS SHOWN AS LOTS 1 & 2 BLOCK A ON THE CITY OF PORTLAND'S ASSESSORS MAP 18.
3. BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATES WEST ZONE NAD83. CITY POINTS: T-113-80-206 N:302687.77 E:2932345.31
   T-113-12-111 N:302722.13 E:2933029.45
4. PARCEL IS LOCATED IN ZONE C, AREAS OF MINIMAL FLOODING, AND FLOOD ZONE A2 ELEV. 10, FLOOD INSURANCE RATE MAP 230051-0014B EFFECTIVE DATE JULY 17, 1986.
5. BENCH MARK: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) – TIDAL BENCHMARK. BENCH MARK STAMPING: NO. 3 1971 ELEVATION 11.02 FEET CITY DATUM.
6. EXISTING FLOATS TAKEN FROM PHOTOS PROVIDED BY CLIENT. EXISTING DOLPHINS TAKEN FROM MAINE OFFICE OF GIS AERIAL PHOTO.
7. BATHYMETRY DATA PROVIDED BY STEELS ASSOCIATES MARINE CONSULTANTS LLC.

Utility Note:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-800-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

BOUNDARY & TOPOGRAPHIC SURVEY

AT

58 FORE STREET, PORTLAND, MAINE

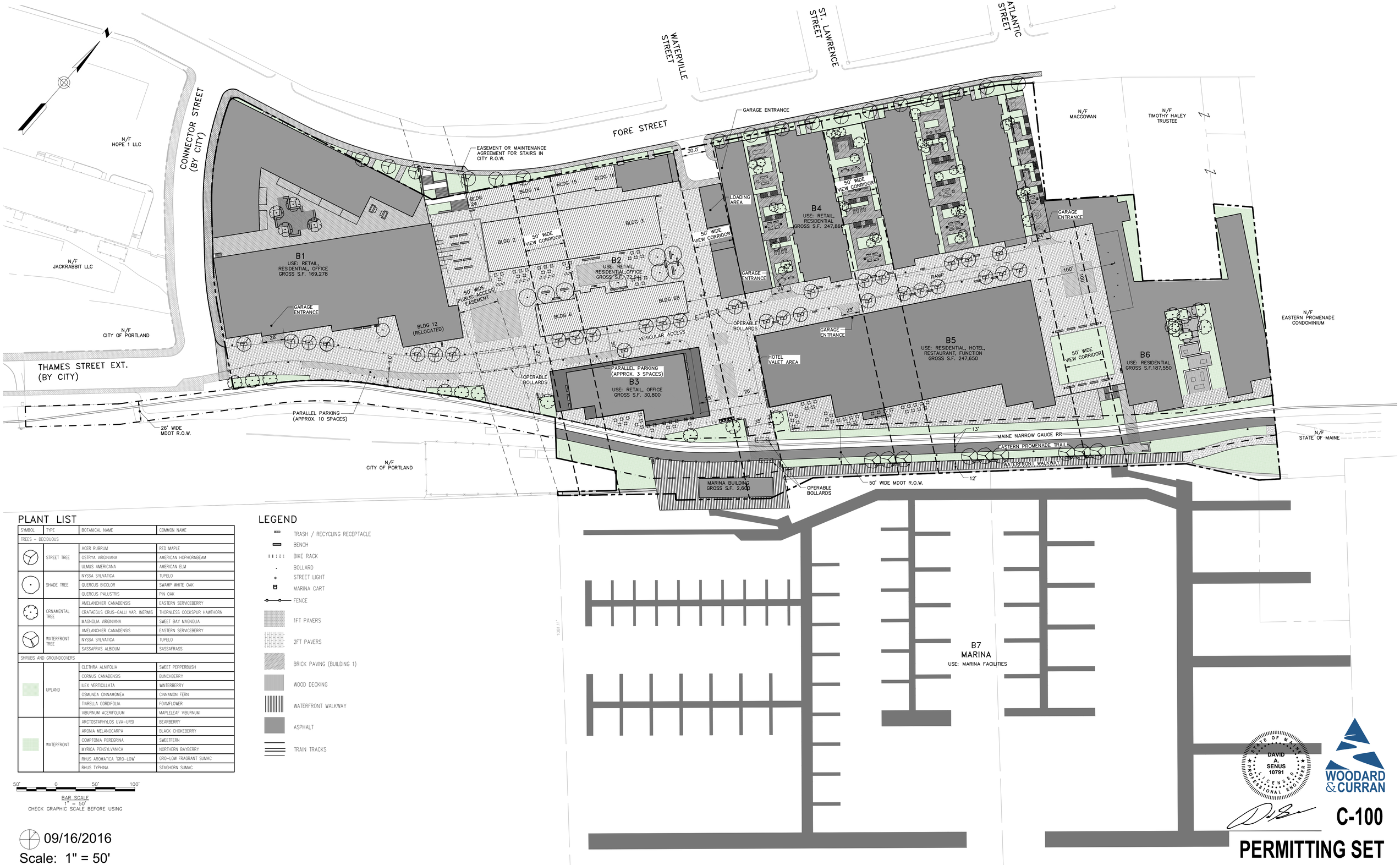
MADE FOR

WOODARD & CURRAN

41 HUTCHINS DRIVE, PORTLAND, MAINE

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207) 774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	OHI	Date	Job No.
Trace By	JLW	AUGUST 19, 2016	2016-175P
Check By	JWS	Scale	Drwg. No.
Book No.	FILE	1" = 50'	1



PLANT LIST

SYMBOL	TYPE	BOTANICAL NAME	COMMON NAME
TREES – DECIDUOUS			
	STREET TREE	ACER RUBRUM	RED MAPLE
		OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM
		ULMUS AMERICANA	AMERICAN ELM
	SHADE TREE	NYSSA SYLVATICA	TUPELO
		QUERCUS BICOLOR	SWAMP WHITE OAK
		QUERCUS PALUSTRIS	PIN OAK
	ORNAMENTAL TREE	AMELANCHIER CANADENSIS	EASTERN SERVICEBERRY
		CRATAEGUS CRUS-GALLI VAR. INERMIS	THORNLESS COCKSPUR HAWTHORN
		MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA
	WATERFRONT TREE	AMELANCHIER CANADENSIS	EASTERN SERVICEBERRY
		NYSSA SYLVATICA	TUPELO
		SASSAFRAS ALBIDUM	SASSAFRASS
SHRUBS AND GROUNDCOVERS			
	UPLAND	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH
		CORNUS CANADENSIS	BUNCHBERRY
		ILEX VERTICILLATA	WINTERBERRY
		OSMUNDA CINNAMOMEA	CINNAMON FERN
		TIARELLA CORDIFOLIA	FOAMFLOWER
		VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM
	WATERFRONT	ARCTOSTAPHYLOS UVA-URSI	BEARBERRY
		ARONIA MELANOCARPA	BLACK CHOKEBERRY
		COMPTONIA PEREGRINA	SWEETFERN
		MYRICA PENSYLVANICA	NORTHERN BAYBERRY
		RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC
		RHUS TYPHINA	STAGHORN SUMAC

LEGEND

- TRASH / RECYCLING RECEPTACLE
- BENCH
- BIKE RACK
- BOLLARD
- STREET LIGHT
- MARINA CART
- FENCE
- 1FT PAVERS
- 2FT PAVERS
- BRICK PAVING (BUILDING 1)
- WOOD DECKING
- WATERFRONT WALKWAY
- ASPHALT
- TRAIN TRACKS

50' 0 50' 100'

BAR SCALE
1" = 50'
CHECK GRAPHIC SCALE BEFORE USING

09/16/2016
Scale: 1" = 50'

STATE OF MAINE
DAVID A. SENUS
10791
LICENSED PROFESSIONAL ENGINEER

WOODARD & CURRAN

C-100

PERMITTING SET

OPB2 LLC
EASTERN WATERFRONT DEVELOPMENT PORTLAND, MAINE

OVERALL SITE MASTER PLAN

58 FORE STREET MASTER PLAN

SCOTT SIMONS ARCHITECTS | MICHAEL BOUCHER LANDSCAPE ARCHITECTURE | WOODARD & CURRAN | THORNTON TOMASETTI | THE BOULOS COMPANY | MASON ARCHITECTS | APPLIED TECHNOLOGY MANAGEMENT | PERKINS+WILL

Attachment 1C

Other Development Map

Other Development

PORTLAND COMPANY
PORTLAND, MAINE

Design:	EAT	Scale:	NONE
Draft:	LAN	Date:	JULY 2016
Checked:	RED	File Name:	3138-Aerial.dwg

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Attachment 1D

Trip Generation Calculations

NCHRP 684 Spreadsheets

Commute Data Maps

Site Parking Demand Memo

Marina Trip Generation Calculations

58 Fore Street Trip Generation Summary
Portland, Maine
September 2, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
	Retail	814 - Specialty Retail	4,000	SF		3	60%	40%	2	1	11	45%	55%	5	6
					B4 Total:	**143**	**21%**	**79%**	**30**	**113**	**182**	**64%**	**36%**	**116**	**66**
B5															
	Residential	230 - Residential Condominium/Townhouse	108	Dwelling Units		48	15%	85%	7	41	56	65%	35%	36	20
	Hotel	310 - Hotel	132	Rooms		74	60%	40%	44	30	78	55%	45%	43	35
	Restaurant	932 - High Turnover (Sit Down) Restaurant	3,800	SF		44	50%	50%	22	22	41	60%	40%	25	16
					B5 Total:	**166**	**44%**	**56%**	**73**	**93**	**175**	**59%**	**41%**	**104**	**71**
B6															
	Residential	230 - Residential Condominium/Townhouse	131	Dwelling Units		58	15%	85%	9	49	68	65%	35%	44	24
	Residential	220 - Apartment	14	Dwelling Units		7	20%	80%	1	6	9	65%	35%	6	3
					B6 Total:	**65**	**15%**	**85%**	**10**	**55**	**77**	**65%**	**35%**	**50**	**27**
B7															
	Marina Facilities	N/A	2,600	SF		36	72%	28%	26	10	36	28%	72%	10	26
					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
					Site Total:	**769**	**54%**	**46%**	**413**	**356**	**921**	**45%**	**55%**	**418**	**503**

		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
	B1-B6 Subtotal:	733	53%	47%	387	346	885	46%	54%	408	477
	NCHRP 684 Reduction:	102	12%	14%	51	51	150	18%	15%	75	75
35.8%	Other Modes Reduction:	236	35.8%	35.8%	123	113	289	35.8%	35.8%	131	158
10%	Hotel Other Modes Reduction:	7	57%	43%	4	3	8	50%	50%	4	4
	B1-B6 Total:	**388**	**54%**	**46%**	**209**	**179**	**438**	**45%**	**55%**	**198**	**240**
	Marina Total	36	72%	28%	26	10	36	28%	72%	10	26
	Site Total	**424**	**55%**	**45%**	**235**	**189**	**474**	**44%**	**56%**	**208**	**266**

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	268	242	26
Retail	814	50,273	SF	38	23	15
Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]	N/A	2,600	SF	36	26	10
Total				769	413	356

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	769	413	356
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips[3]	667	362	305
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	38	38		1.00	220	220
Retail	1.00	61	61		1.00	75	75
Restaurant	1.00	25	25		1.00	16	16
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	241	241		1.00	131	131
Hotel	1.00	43	43		1.00	35	35

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		44	9	0	4	0
Retail	2		22	3	20	4
Restaurant	0	7		1	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	55	28	0		4
Hotel	0	6	24	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	10	0
Retail	12		7	0	111	7
Restaurant	11	31		0	39	31
Cinema/Entertainment	2	2	1		10	0
Residential	22	6	4	0		5
Hotel	0	1	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	31	38		31	0	0
Retail	19	42	61		42	0	0
Restaurant	13	12	25		12	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	27	214	241		214	0	0
Hotel	9	34	43		34	0	0
All Other Land Uses[3]	0	10	10		10	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	210	220		210	0	0
Retail	33	42	75		42	0	0
Restaurant	11	5	16		5	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	19	112	131		112	0	0
Hotel	2	33	35		33	0	0
All Other Land Uses[3]	0	26	26		26	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

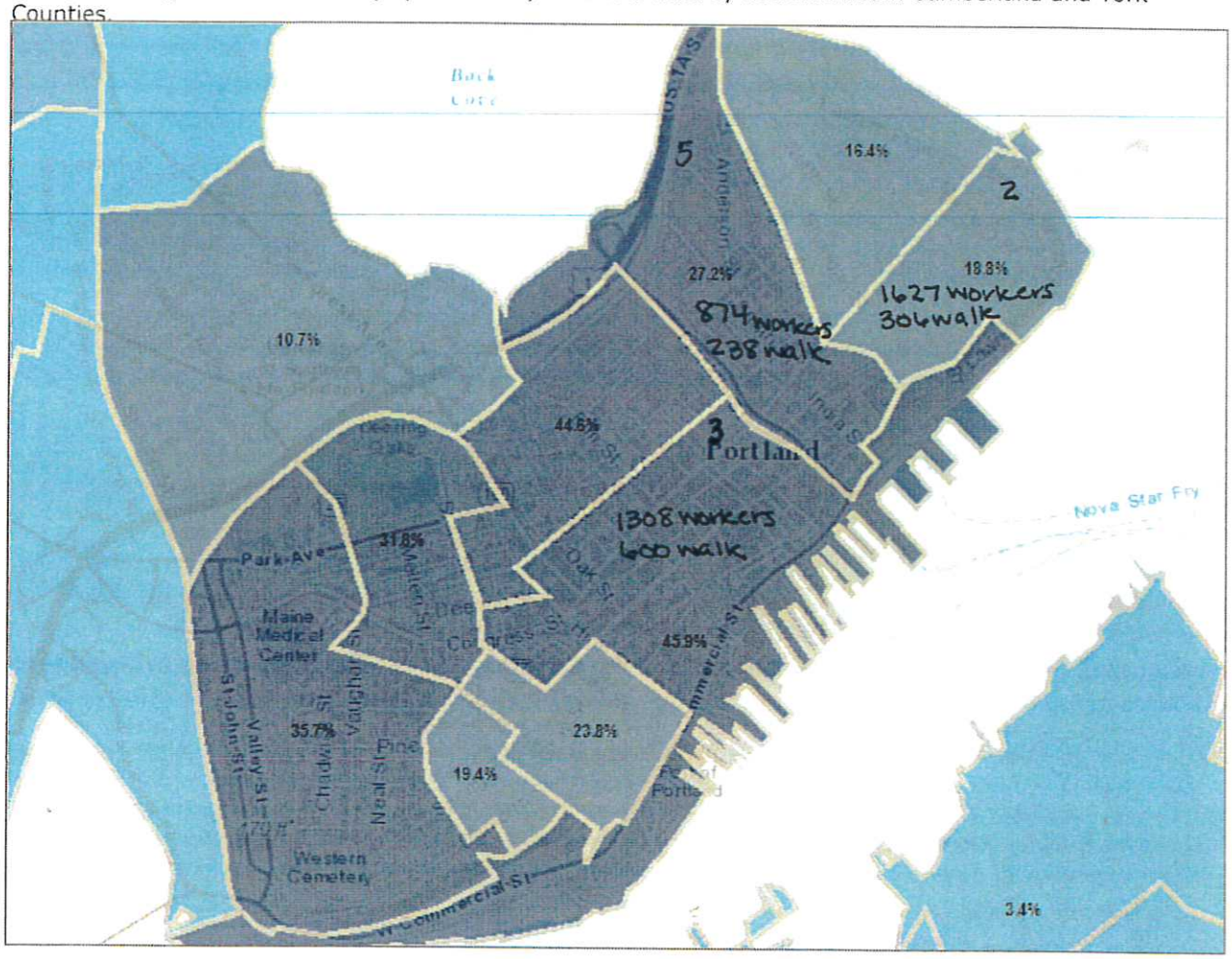
[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Walked

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

3809 Workers
1144 Walk

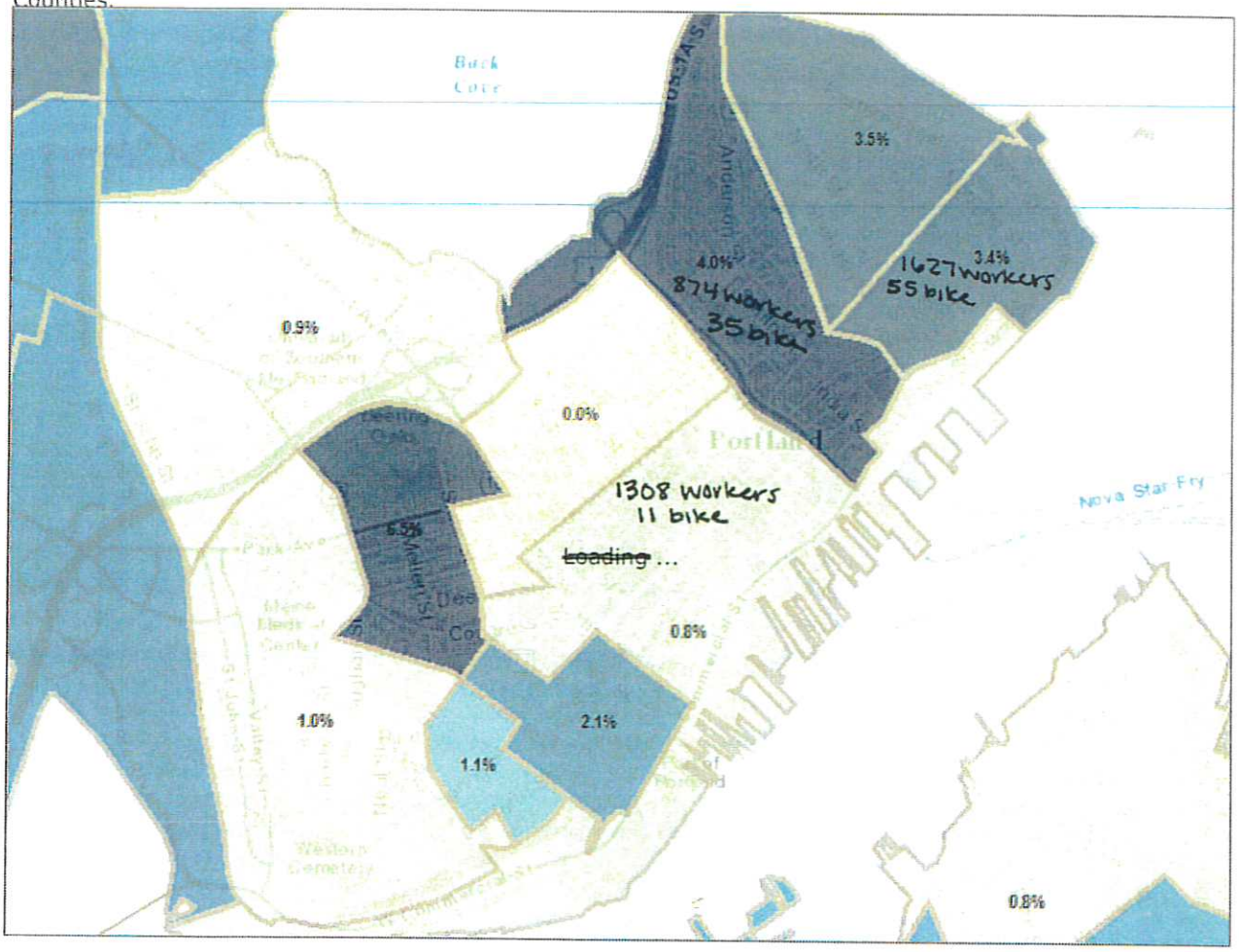
30.0% walk

Walk/Bike/Transit
30.0 + 2.7 + 3.1 = 35.8%

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Biked

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

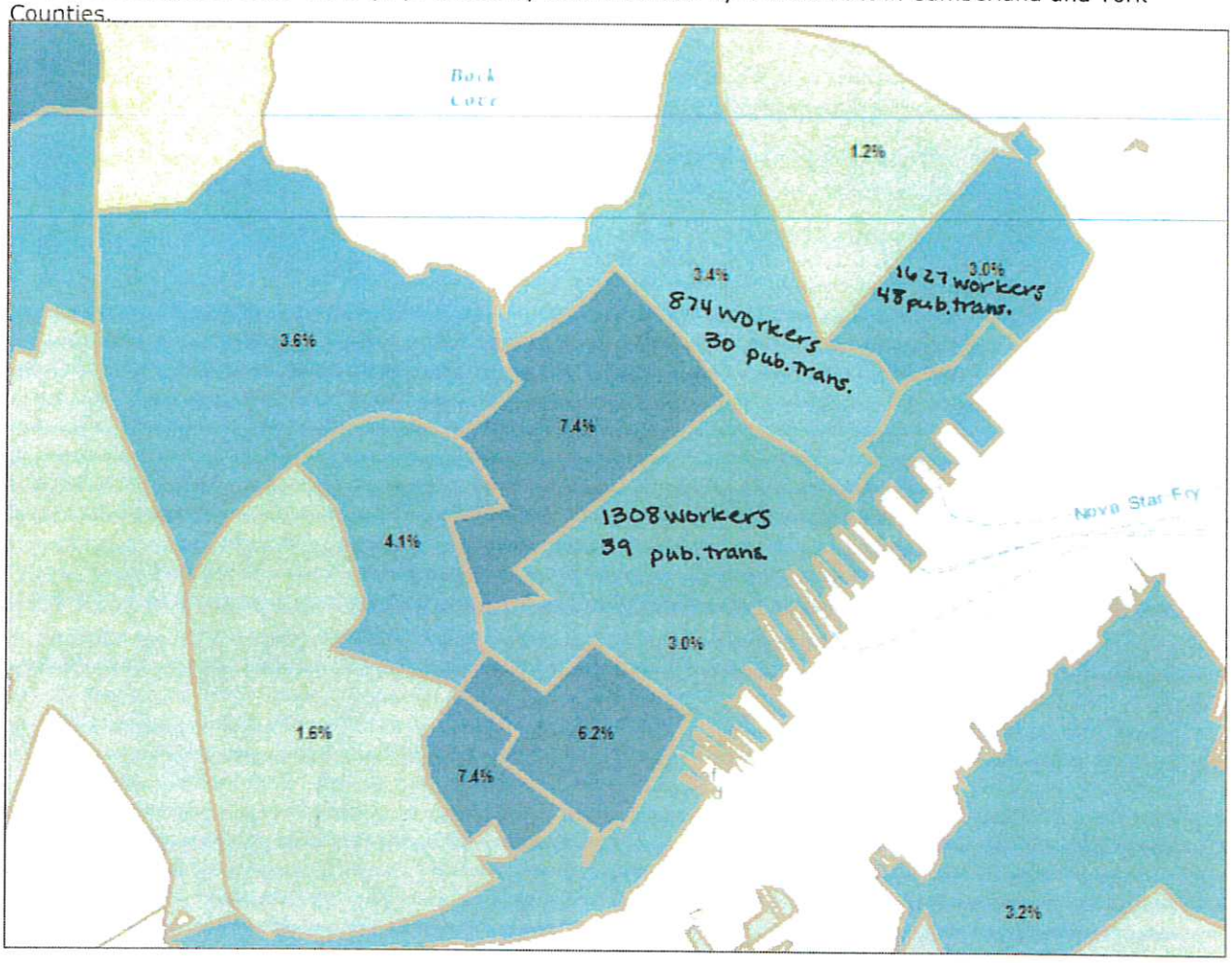
3809 Workers
101 Bike

2.7% Bike

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Public Transportation

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

3809 Workers
117 Public Transportation

3.1% Public Transportation

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Site Parking Demand
58 Fore Street Mixed Use Development
Portland, Maine
JN 3138

Date: September 16, 2016
Subject: Site Parking Demand
58 Fore Street Mixed Use Development
To: David Senus, Mary McCrann, Jim Brady, Kevin Costello, Casey Prentice
From: Randy Dunton and Emily Tynes, Gorrill Palmer (JN 3138)

The following is a summary of the estimated parking demand for the proposed mixed use development at 58 Fore Street. The following table summarizes the sizes and uses of the proposed development used to calculate the parking demand:

Proposed Site Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

It should be noted that the retail portions of the proposed site will be multiple smaller shops, not large retail stores.

Parking Demand Calculation Methodologies

The parking demand has been determined using two methodologies: using the City Ordinance requirements and based on a shared parking demand. The following summarizes the methodologies in more detail:

City Ordinance Parking Demand

The Ordinance requirement methodology involves calculating the peak parking demand for each use using the City of Portland Code of Ordinances. This method assumes each use is isolated and then adds the individual demands to determine the parking demand for the site. The supporting calculations for this method are attached. This method results in an overestimate because the peak demands for each use are not expected to occur at the same time. For example, offices require more spaces during the day while employees are in the office, and residential buildings would require more spaces later at night when residents are home from work.

The City Ordinance Ch. 14, Art III, Div. 20, Sec. 14-332.2 (c) states, "where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer." Since this mixed use development is approximately 958,679 sf of building floor area, it meets the criteria. Therefore, the site parking demand was determined based on the following methodology.

Shared Parking Plan

The shared parking plan methodology is based on a combination of City Ordinance parking demand, the ITE Parking Generation Manual (4th Edition), and published data / engineering judgement and it reflects that the demand for different uses will peak during different times of day. Since different uses do not peak at the same times, parking spaces can be shared between uses. To determine the shared parking demand, the total parking demand was calculated for each use, then distributed throughout the day based on the type of use. This is the same methodology used for the recent Thompson's Point project. The supporting calculations are attached. With a shared parking plan it is recommended that shared parking language be included in the leases, to ensure tenants understand the shared parking.

Parking Demand Reductions

Given the mixed use of the site as well as its downtown location, the following two parking demand reductions were applied to the shared parking spaces:

Shared Use Reduction

When evaluating a mixed use development with complementary uses such as this, the overall parking demand can be reduced due to the expectation that there will be some cross use between the individual facilities. For instance, it can be assumed that some of the people living in the apartments would also be those that visit the retail. Gorrill Palmer (GP) used the NCHRP 684 Internal Trip Capture Estimation Tool to calculate the reduction that can be applied to the trip generation. This calculated an internal trip capture of 14% for the AM peak hour and 17% for the PM peak hour. It can be assumed that parking demand can be reduced proportionally to the reduction in trip generation. To be conservative, GP used a shared use reduction of 14% throughout the day to estimate the parking demand. The following table summarizes the shared use reduction:

Shared Use Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand	919	690
Shared Use Reduction (14%)	-129	-97

Other Modes Reduction

The overall parking demand for a development in a downtown area can also be reduced due to the expectation that some people going to or from the site would use other modes of transportation such as transit, bicycle, or walking. The site is adjacent to an existing bus route as well as located on a bicycle and pedestrian path. The other modes reduction is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract. Based on this information Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, created maps using GIS data that illustrate the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to commute to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the individual tracts. This reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number

of working people in the same three Census Tracts. This calculation yields a 35.8% use of non-vehicular modes of transportation.

The GPCOG data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site. It was not clear if the 35.8% reduction would also be applicable to the restaurants and hotel, even though there are hotels and restaurants located within the boundaries of the three Census Tracts. GP searched for studies that included information on other modes of transportation for restaurants and hotels and found two sources that had information that could be compared to the other modes of transportation calculated using the Portland Census data. The following is a more detailed description of the relevant information found in the two studies:

The first study is *Contextual Influences on Trip Generation* (found in the United States Department of Transportation National Transportation Library online database or at the following link: http://ntl.bts.gov/lib/46000/46600/46699/CITG_FinalReport_Draft_10022012.pdf), a study for the Oregon Transportation Research and Education Consortium (OTREC) that compared the ITE predicted trip generation to the actual trip generation of 79 locations in Portland, Oregon, 39 of which were high turnover sit-down restaurants. The study also included surveying the visitors of those sites to determine what mode of transportation the visitors used. The results of the study are divided into different types of areas, ranging from central business district, which is considered the most urban area, to suburban areas, which is considered the least urban type of area surveyed. This study surveyed 12 restaurants in the central business district area and found that 35% of the patrons arrived to the sites using a car, while the remaining 65% walked, biked, or used transit (table attached). This result is higher than the 35.8% use of other modes calculated using the GPCOG information. Because the data is for Portland, Oregon it may not be appropriate to use as a reduction, but it does indicate that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

The second source that included restaurant information is the National Cooperative Highway Research Program (NCHRP) Report 758, *Trip Generation Rates for Transportation Impact Analyses of Infill Developments*. This study used information from the Household Travel Survey (HTS) for the San Francisco Bay area and Metropolitan Washington D.C. and counted data and surveys at specific sites in those areas. The Washington D.C. HTS data for restaurants shows that approximately 40.3% of residents use transit, walk, or bicycle to and from high-turnover sit-down restaurants (table attached). The study only included one site that was counted and surveyed, so the HTS data could not be verified, however like the Portland, Oregon study, it is higher than the other modes reduction calculated using the GPCOG Census information. Like the Portland, Oregon study, this data indicates that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

Based on these two additional sources that contain information specific to restaurant uses, GP determined that the other modes reduction of 35.8% calculated from the GPCOG Census

information that is based on the existing transit system can be applied to the restaurant parking demand. Although the other two studies showed higher percentages of people using alternative modes of transportation to go to or from restaurants, since they are not specific to Portland, Maine, the local data is expected to be closer to the actual conditions that would be seen at the 58 Fore Street development.

The two studies discussed above included information about restaurants, but did not have any data for hotels. Based on our research there is limited information available about modes of transportation used at hotels. It can be assumed for the 58 Fore Street site that hotel employees may take the bus, bike, or walk to get to and from work and some hotel guests may arrive by boat using the marina. To be conservative, GP only used an "other modes of transportation" reduction of 10% for the hotel.

The following table summarizes the other modes of transportation reduction for the site:

Other Modes of Transportation Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand w/o Hotel	886	677
Hotel Peak Parking Demand	33	13
Other Modes Reduction (35.8% of B1-B6 Demand w/o Hotel)	-317	-242
Hotel Other Modes Reduction (10% of Hotel Demand)	-3	-1
Total Other Modes Reduction	**-320**	**-243**

Marina Parking Demand

The City Ordinance does not include a parking requirement for marina facilities. The parking demand for the proposed marina is based on information from Applied Technology & Management (ATM). The new marina is proposed to have 220 slips that will service off-site Portland residents, on-site Portland residents, and transient boaters. ATM provided a range of parking rates from one space for every two slips to one space for every four slips. ITE has limited marina parking information available, however the ATM parking rates appear to be consistent with the ITE data. To be conservative, GP used a requirement of one parking space for every two slips. ATM expects peak usage of the marina to be 10% of the slips, but possibly higher since Maine has a shorter boating season. To be conservative, GP assumed that the peak demand would be 15% of the slips. ATM also stated that there would be approximately 9 employees at this marina, therefore GP included an additional 5% to include spaces for employees, giving a total peak demand estimation of 20% of the slips. Because of the nature of a marina use, the two parking demand reductions that were applied to the rest of the site were not applied to the

marina parking demand. Although it is possible that marina users visit other uses on site or use alternative modes of transportation to get to the site, to be conservative the reductions were not applied.

Dedicated Parking Spaces

Often in large developments, a portion of parking spaces are dedicated to a specific use. For example, residential units may have spaces assigned to each unit or a group of spaces may be reserved for use by only an office. These dedicated spaces would not be shared by any other site uses. The number of dedicated parking spaces is added to the number of shared parking spaces to determine the total site demand. On this site, there are 298 dedicated parking spaces proposed. These spaces include; half of the residential units in B1, all the residential units in B5, and all the residential units in B6. The two parking demand reductions that were applied to the rest of the site were not applied to the dedicated parking spaces, since the spaces will not be shared and will be provided for the peak demand regardless of the expected use of transit, bicycles, or walking.

Parking Demand Summary

The following table summarizes the overall parking demand for the site, including the reductions, based on both the Ordinance and the Shared Parking demand methodologies:

Parking Demand Summary

Proposed	Ordinance	Shared Parking
B1-B6 Shared Parking Demand	919	690
Shared Use Reduction	-129	-97
Other Mode Reduction	-320	-243
B1-B6 Total Shared Parking Demand	**470**	**350**
B7 (Marina) Parking Demand	110	22
B1-B7 Total Parking Demand	**580**	**372**
B1-B7 Dedicated Parking	298	298
Net Parking Demand	**878**	**670**

As shown in the table, the proposed parking demand, including reductions, based on the Ordinance and isolated uses is forecast to be 878 spaces and the parking demand based on shared parking is 670 spaces. The parking demand based on the City Ordinance is higher than the shared parking demand because it assumes all uses will require their peak parking demand concurrently whereas the shared parking demand considers the different uses peaking at different times of day.

It should be noted that a parking facility can be considered full when it is approximately 85% occupied. This is because a driver may not see empty parking spaces when the lot is almost completely occupied, especially in a larger parking area. **To ensure the peak parking demand is satisfied, the recommended number of spaces is 736 (372 spaces / 0.85 + 298 spaces).** This assumes that shared spaces are generally available to all users. The increase is not applied to the dedicated parking spaces because it is assumed that they will be visible and easy for the designated users to find.

The marina may also have additional parking needs, such as temporary parking spaces for visitors to drop off passengers or supplies near their boat before parking their vehicle and for fueling trucks and provisional vehicles that service the mega-yachts. These other parking spaces should be considered in addition to the estimated peak parking demand for the visitors and employees.

Bicycle Parking

Per City Ordinance, new uses are required to provide bicycle accommodations based on the type of use. Residential structures are required to provide 2 bicycle spaces for every 5 dwelling units. Non-residential structures are required to provide 2 bicycle parking spaces for every 10 vehicle parking spaces for the first 100 required spaces, plus one bicycle parking space for every 20 required vehicle parking spaces over the 100 vehicle parking spaces. The following table shows the required bicycle parking for the Ordinance vehicle parking demand and the Shared Parking demand:

Bicycle Parking Summary

	Ordinance	Shared Parking
Parking Variable	409 Spaces, 638 Units	322 Spaces, 638 Units
Residential Bicycle Spaces	256	256
Non-Residential Bicycle Spaces	36	31
Total	**292**	**287**

As shown in the table, the site will require 287-292 bicycle parking spaces to meet the City Ordinance Requirements for bicycle accommodations. The Transportation Demand Management (TDM) plan will outline a more detailed approach to incorporating bicycle parking on site.

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JOB 3138-58 Fore Street Redevelopment
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 8/26/16
CHECKED BY _____ DATE _____
SCALE _____

Marina Trip Generation

Info from ATM:

- 220 slips → 140 seasonal users, 80 transient boaters
- Daily usage peaks around 10%, maybe more
- 10% of daily non-transient users are on-site residents
- 90% of daily non-transient users are offsite residents
- 30% of off site residents are Islanders commuting to the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Assumptions:

- 15% of slips is peak daily usage to be conservative (33 slips)
- 36% are transient boaters (80/220 = 36% → 12 slips)
- 21 non-transient slips used during peak (33 slips − 12 slips)
- 2 on-site residents used slips during peak (21 × 0.10 = 2.1)
- 19 off-site residents use slips during peak (21 × 0.90 = 18.9)
- 6 Islanders commuting to Peninsula (19 × 0.30 = 5.7)
- 1 provisioning vehicle per mega-yacht slip (conservative)
- Transient boaters = 0 trip ends
- On-site residents = 0 trip ends
- Off-site residents = 1 AM trip end, 1 PM trip end
  - Islanders leave during AM and return during PM
  - Other off-site enter during AM and exit during PM
- Employees enter during AM and exit during PM
- Provisioning vehicles enter and exit during the peak hour (conservative)

AM Peak Hour	PM Peak Hour
- 9 employees in	- 9 employees out
- 6 Islanders out	- 6 Islanders in
- 13 seasonal in	- 13 seasonal out
- 4 provisional veh. in	- 4 provisional veh in
- 4 provisional veh. out	- 4 provisional veh out
36 trip ends (26 in / 10 out)	36 trip ends (10 in / 26 out)

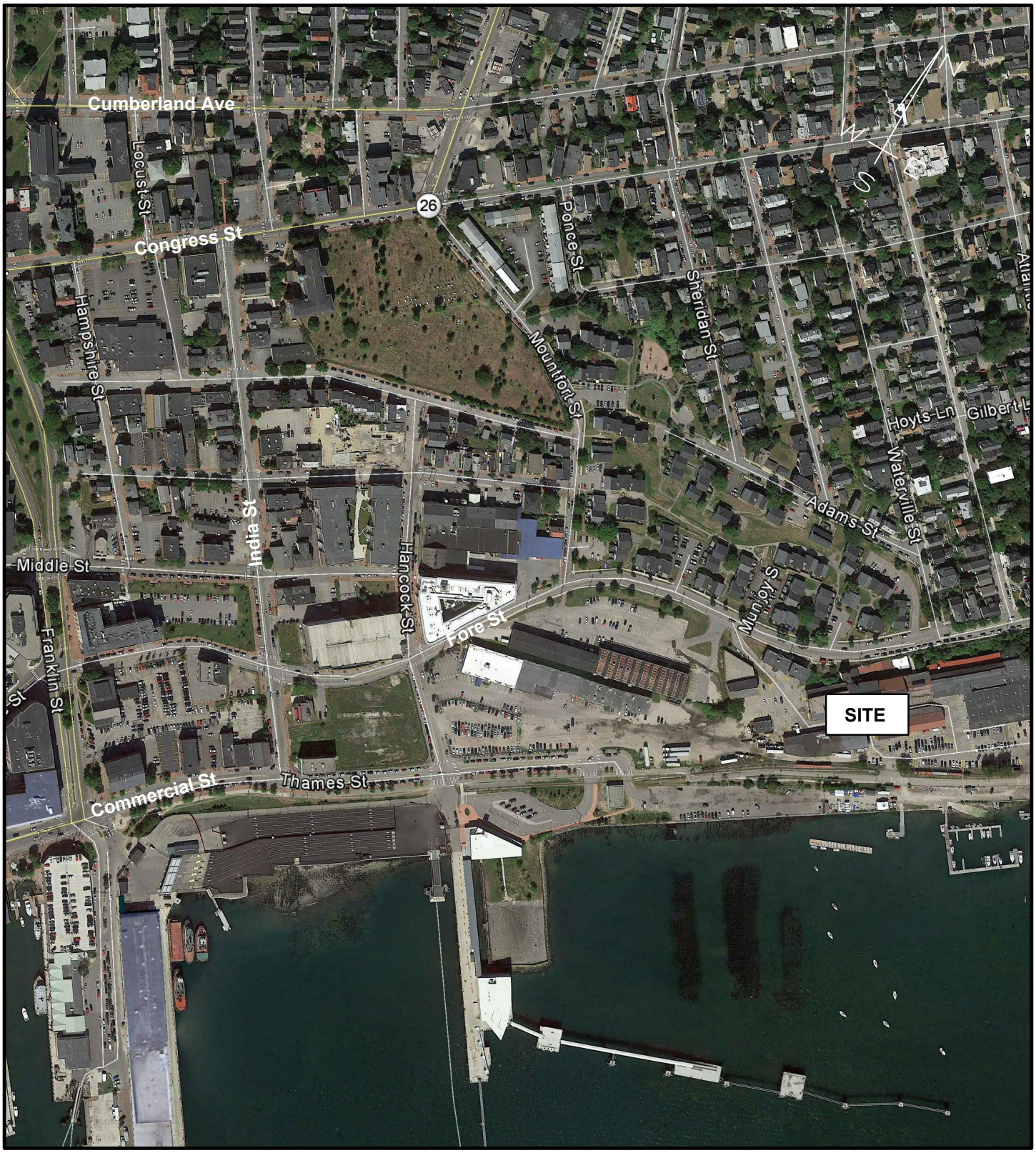
Attachment 1B

Site Location Map

Trip Assignment Diagrams

Location Map

Figure No. 1



58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

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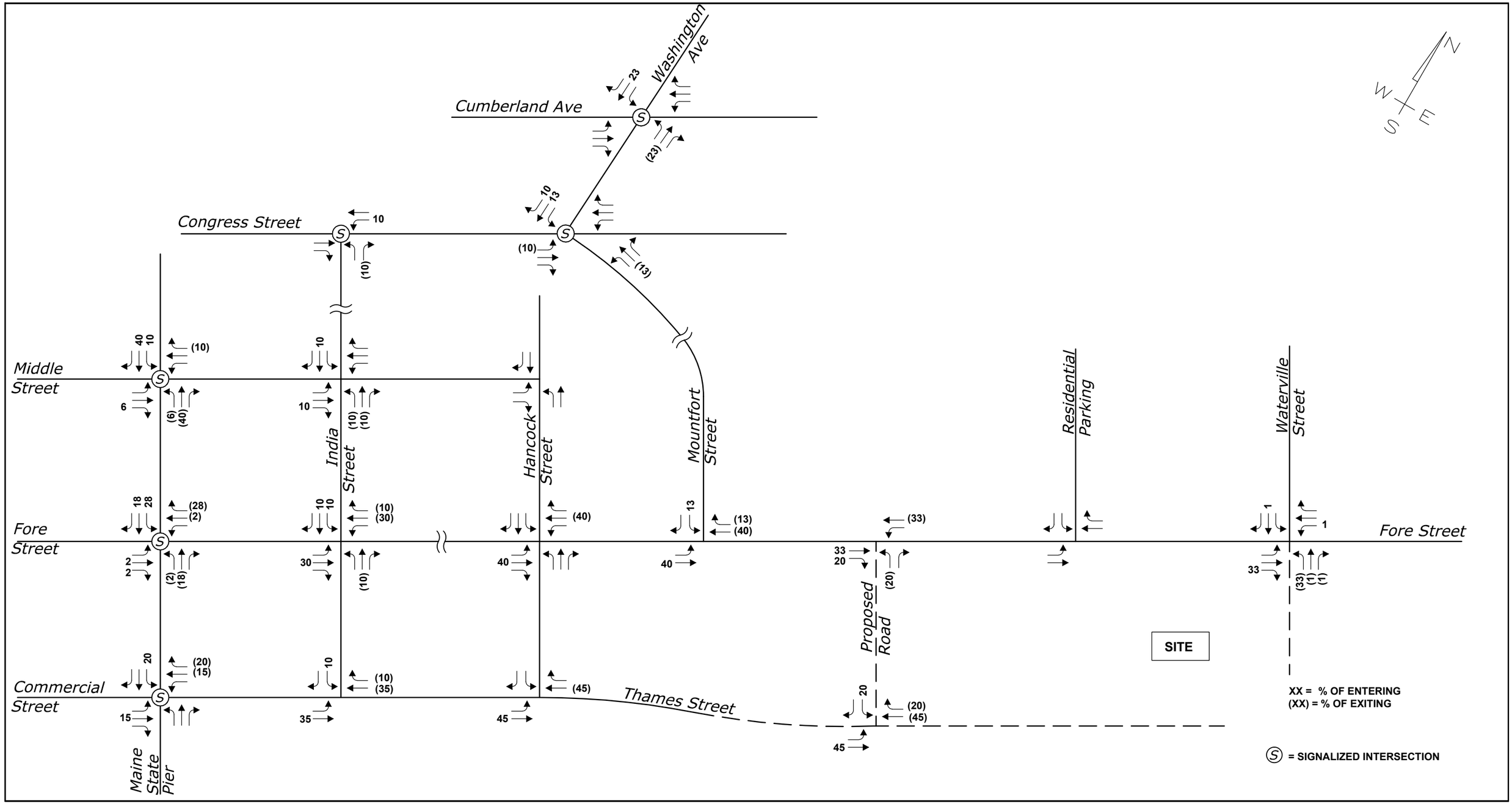
Residential Trip Distribution

Figure No. 6



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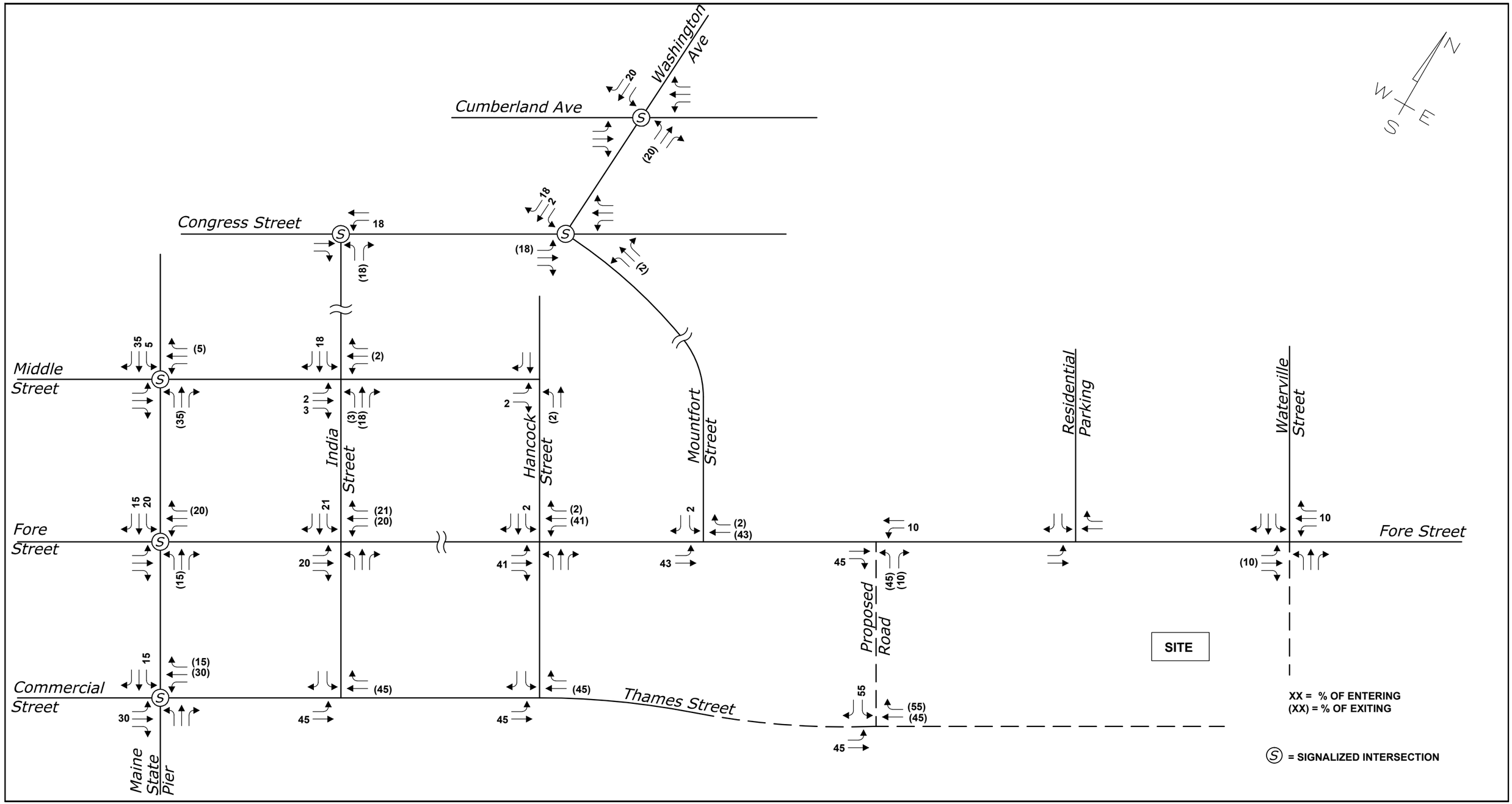
Non-Residential Trip Distribution

Figure No. 7



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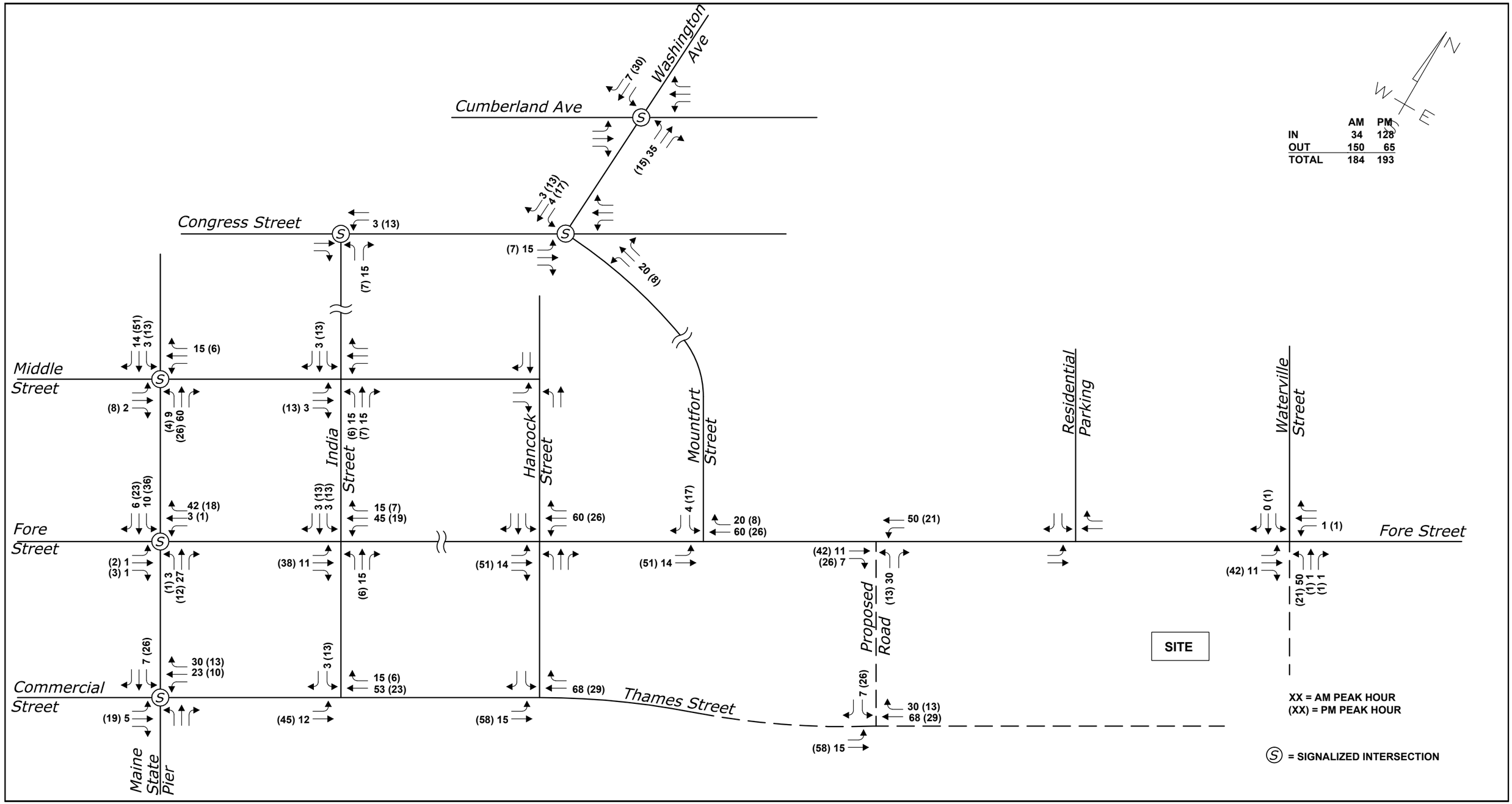
Residential Trip Assignment

Figure No. 8



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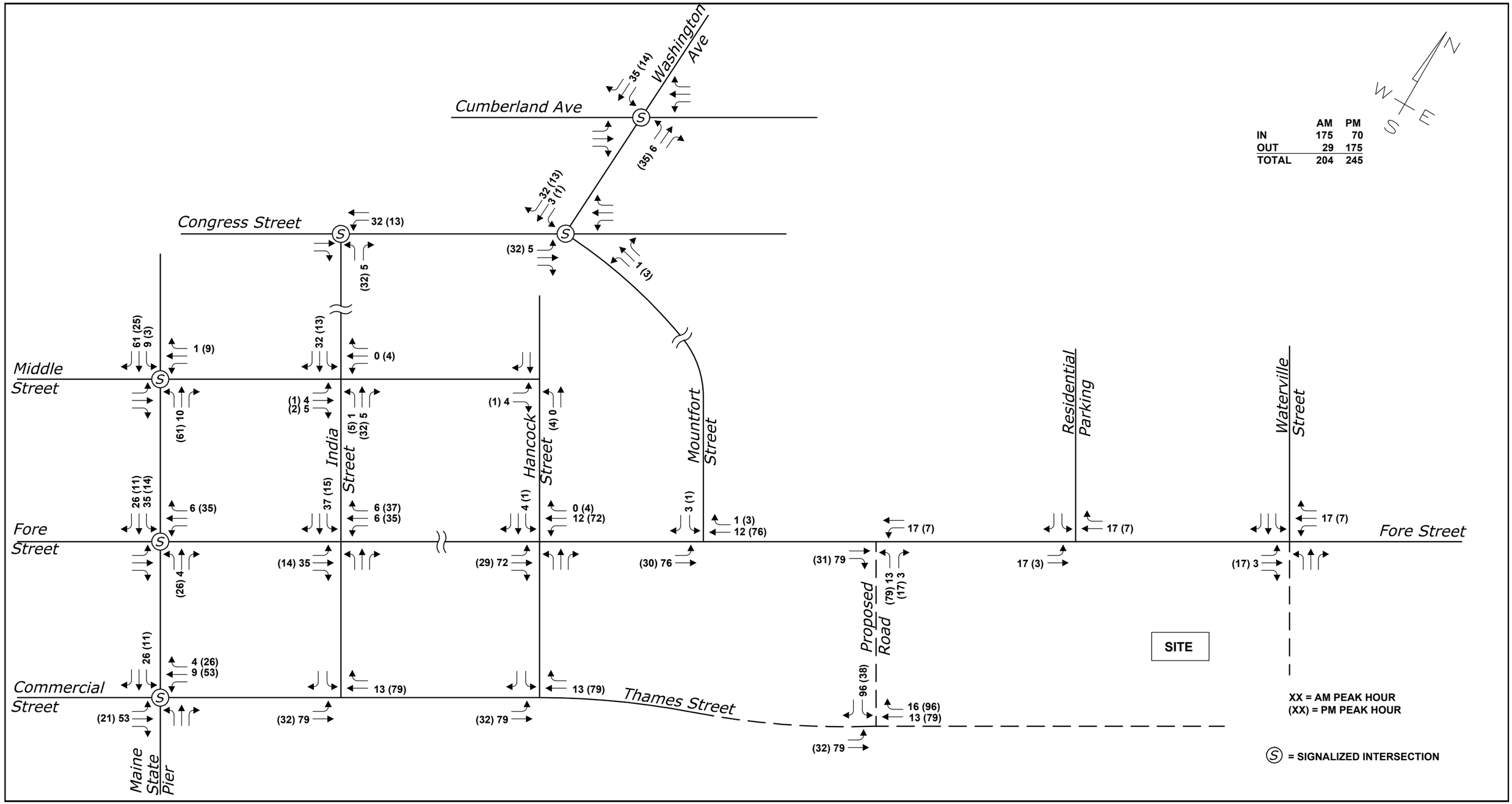
Non-Residential Trip Assignment

Figure No. 9



	AM	PM
IN	175	70
OUT	29	175
TOTAL	204	245

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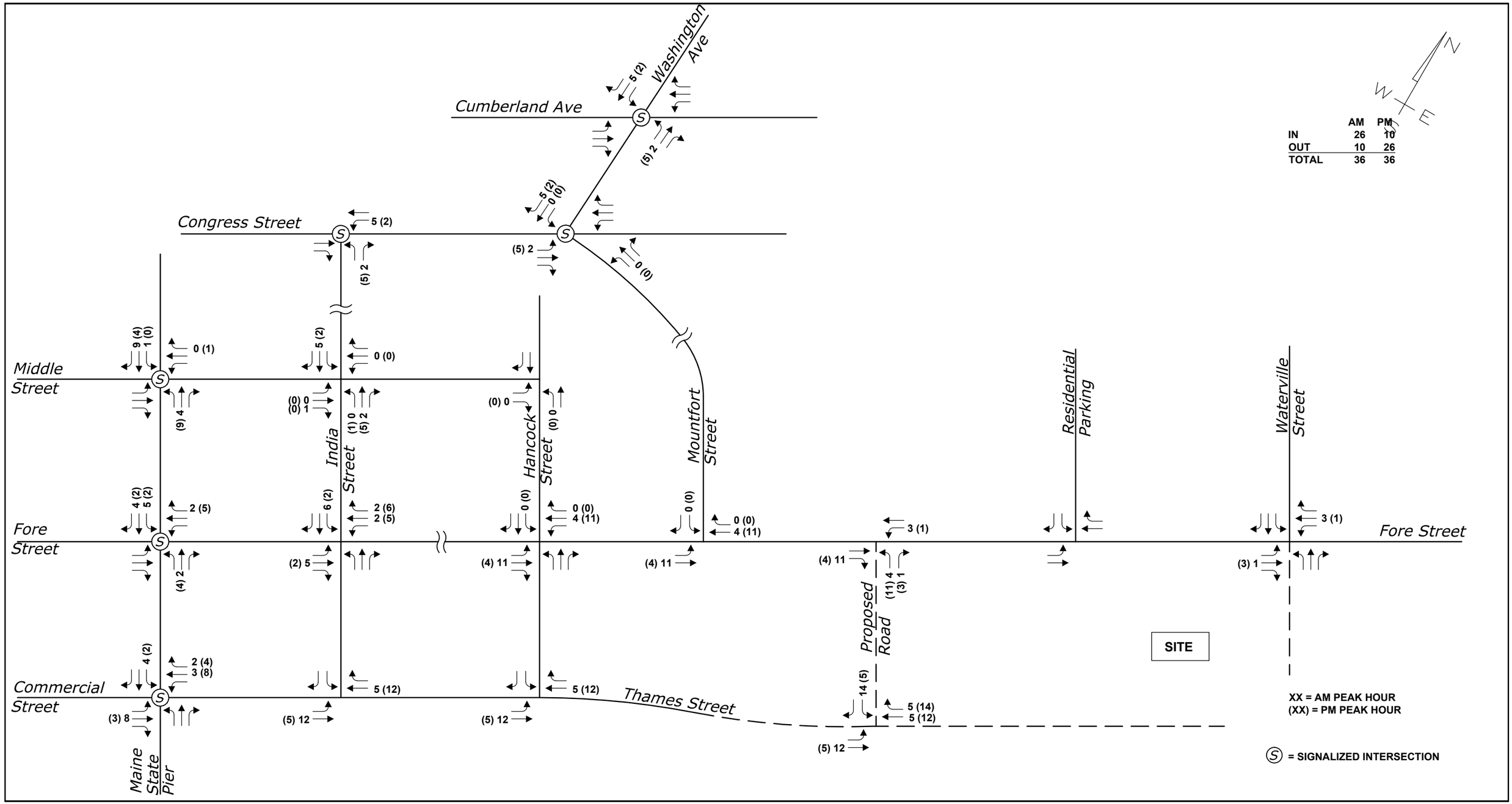
Marina Trip Assignment

Figure No. 10



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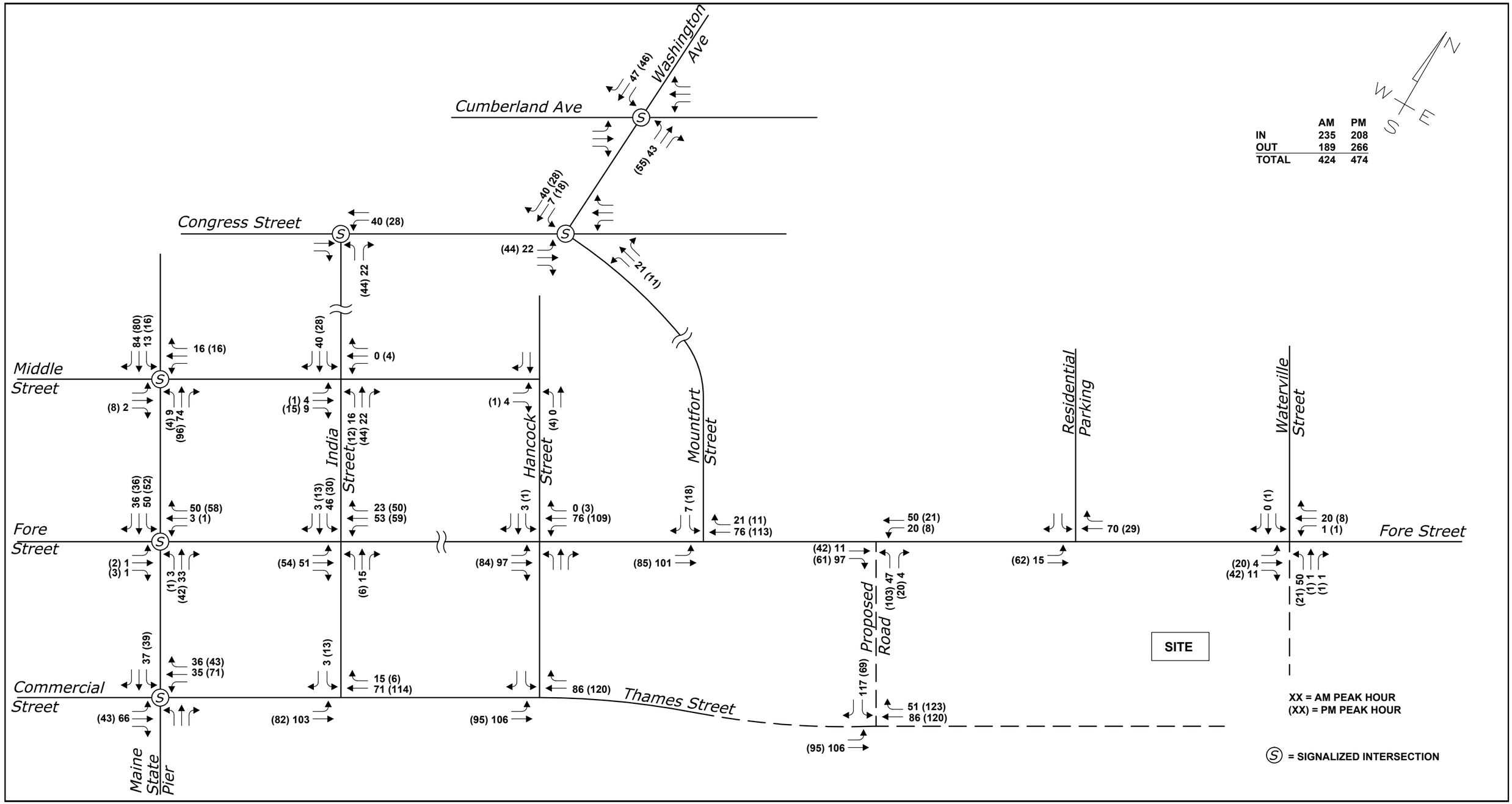
Total Trip Assignment

Figure No. 11



	AM	PM
IN	235	208
OUT	189	266
TOTAL	424	474

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Section 2
Traffic Crashes

2.A. Crash Summary Data

Gorrill Palmer obtained the crash data from MaineDOT for the period of 2013-2015, the most recent period available (Attachment 2A).

In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average) **and**:
2. A minimum of eight crashes over the same three-year period.

Based on the crash data provided by MaineDOT, there are two high crash locations within the study area; one at the intersection of Franklin Street with Middle Street, and one on Fore Street from its intersection with India Street to its intersection with Mountfort Street. It should be noted that there were also two locations that did not meet the HCL criteria, but were close. The intersection of India Street with Fore Street has a CRF of 1.60 and experienced seven collisions during the most recent-three year period and Cumberland Avenue from Boyd Street to Locust Street has a CRF of 4.13 and experienced seven collisions over the most recent three-year period. The intersection of India Street with Fore Street was previously identified as an HCL based on 2012-2014 crash data, but it experienced fewer crashes during the 2013-2015 period, so it no longer meets both HCL criteria.

To better evaluate the high crash locations and identify correctable crash patterns, the police reports for these locations were provided by MaineDOT and used to create collision diagrams, included as an attachment to this section. The two locations are described in more detail as follows:

Franklin Street / Middle Street

The intersection of Franklin Street with Middle Street has a CRF of 1.08 and experienced 20 crashes during the most recent three-year period. It is a signalized four leg intersection with a median separating the northbound and southbound Franklin Street traffic. Based on a review of the collision diagram, all 20 of the collisions involved vehicles turning left from Franklin Street onto Middle Street colliding with through traffic on Franklin Street in the opposite direction. This type of collision occurred with both Franklin Street

northbound and southbound left-turning traffic, but 16 of the 20 collisions occurred with southbound left-turning vehicles colliding with northbound through vehicles. Of those 16 collisions, six occurred because the left-turning vehicles could not see the northbound through vehicle due to a snowbank in the median blocking sight distance. Increased winter maintenance, specifically snow removal, could increase the sight distance at the intersection during the winter months and provide left-turning vehicles with a clearer view of oncoming traffic.

Fore Street from India Street to Hancock Street

This section of Fore Street has a CRF of 2.12 and experienced nine collisions during the most recent three-year period, seven of which occurred at the intersection of Fore Street with Hancock Street. The intersection of Fore Street with Hancock Street is stop controlled, with stop signs on Hancock Street and free flowing traffic on Fore Street. Based on a review of the collision diagram there does not appear to be a clear and correctable crash pattern. Most of the collisions at the intersection of Hancock Street and Fore Street were caused by a driver failing to yield the right of way.

2.B. Attachments

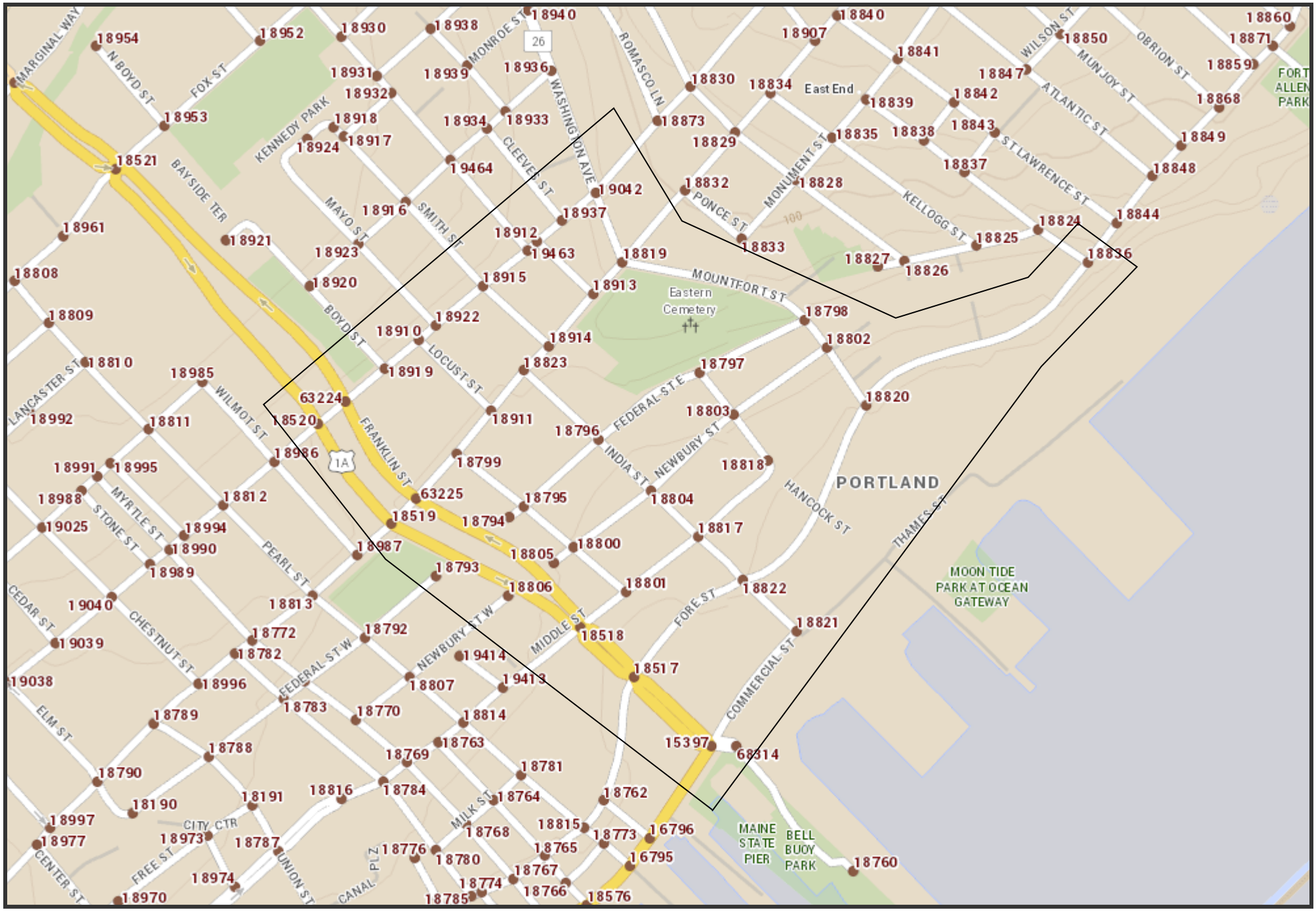
Attachment 2A – Crash Report, Collision Diagrams

Attachment 2A

Crash History

Collision Diagrams

NODE MAP



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.15 Miles

1 inch = 0.13 miles

Date: 8/23/2016
Time: 9:58:43 AM

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0561238	Start Node: 18520	Start Offset: 0	☐ Exclude First Node
	End Node: 19042	End Offset: 0	☐ Exclude Last Node
Route: 0560160	Start Node: 18819	Start Offset: 0	☑ Exclude First Node
	End Node: 18519	End Offset: 0	☑ Exclude Last Node
Route: 0561110	Start Node: 18794	Start Offset: 0	☐ Exclude First Node
	End Node: 18798	End Offset: 0	☑ Exclude Last Node
Route: 0560531	Start Node: 18805	Start Offset: 0	☐ Exclude First Node
	End Node: 18802	End Offset: 0	☑ Exclude Last Node
Route: 0560505	Start Node: 18518	Start Offset: 0	☑ Exclude First Node
	End Node: 18818	End Offset: 0	☐ Exclude Last Node
Route: 0560286	Start Node: 18836	Start Offset: 0	☐ Exclude First Node
	End Node: 18517	End Offset: 0	☑ Exclude Last Node
Route: 0561001	Start Node: 15397	Start Offset: 0	☐ Exclude First Node
	End Node: 18821	End Offset: 0	☐ Exclude Last Node
Route: 0001A	Start Node: 15397	Start Offset: 0	☑ Exclude First Node
	End Node: 63225	End Offset: 0	☑ Exclude Last Node
Route: 0001A	Start Node: 63225	Start Offset: 0	☑ Exclude First Node
	End Node: 63224	End Offset: 0	☑ Exclude Last Node
Route: 001AS	Start Node: 18520	Start Offset: 0	☑ Exclude First Node
	End Node: 18518	End Offset: 0	☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 001AS	Start Node: 18518 End Node: 18517	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 001AS	Start Node: 18517 End Node: 15397	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561002	Start Node: 18819 End Node: 19042	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☑ Exclude Last Node
Route: 0560524	Start Node: 18819 End Node: 18820	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560510	Start Node: 18912 End Node: 18913	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560666	Start Node: 18914 End Node: 18915	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560451	Start Node: 18910 End Node: 18911	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18795 End Node: 18799	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18800 End Node: 18795	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18801 End Node: 18800	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0561000	Start Node: 18822 End Node: 18821	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18817 End Node: 18822	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18804 End Node: 18817	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18796 End Node: 18804	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561000	Start Node: 18823 End Node: 18796	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560344	Start Node: 18803 End Node: 18818	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560344	Start Node: 18797 End Node: 18803	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18520	0561238 - 0.77	Int of CUMBERLAND AV FRANKLIN ST	9	18	0	0	1	2	15	16.7	7.178	0.84	1.10	0.00
												Statewide Crash Rate:	0.67	
63224	0561238 - 0.80	Int of CUMBERLAND AV FRANKLIN ST	9	13	0	0	1	4	8	38.5	6.653	0.65	1.12	0.00
												Statewide Crash Rate:	0.67	
18919	0561238 - 0.84	Int of BOYD ST CUMBERLAND AV	2	2	0	0	0	0	2	0.0	2.692	0.25	0.44	0.00
												Statewide Crash Rate:	0.15	
18910	0561238 - 0.87	Int of CUMBERLAND AV, LOCUST ST	2	2	0	0	0	0	2	0.0	2.636	0.25	0.44	0.00
												Statewide Crash Rate:	0.15	
18922	0561238 - 0.89	Int of CUMBERLAND AV MAYO ST	2	1	0	0	0	0	1	0.0	2.475	0.13	0.45	0.00
												Statewide Crash Rate:	0.15	
18915	0561238 - 0.94	Int of CUMBERLAND AV, SMITH ST	2	2	0	0	0	0	2	0.0	2.450	0.27	0.45	0.00
												Statewide Crash Rate:	0.15	
19463	0561238 - 0.98	Int of ANDERSON ST CUMBERLAND AV	2	2	0	0	0	0	2	0.0	2.195	0.30	0.46	0.00
												Statewide Crash Rate:	0.15	
18912	0561238 - 0.99	Int of CUMBERLAND AV, MONTGOMERY ST	2	0	0	0	0	0	0	0.0	2.043	0.00	0.47	0.00
												Statewide Crash Rate:	0.15	
18937	0561238 - 1.01	Int of CLEEVE ST CUMBERLAND AV	2	0	0	0	0	0	0	0.0	2.011	0.00	0.47	0.00
												Statewide Crash Rate:	0.15	
19042	0561238 - 1.04	Int of CUMBERLAND AV WASHINGTON AV	9	10	0	0	1	1	8	20.0	4.911	0.68	1.19	0.00
												Statewide Crash Rate:	0.67	
18913	0560160 - 0.55	Int of CONGRESS ST MONTGOMERY ST	2	0	0	0	0	0	0	0.0	3.833	0.00	0.40	0.00
												Statewide Crash Rate:	0.15	
18914	0560160 - 0.60	Int of CONGRESS ST SMITH ST	2	4	0	0	1	0	3	25.0	3.932	0.34	0.40	0.00
												Statewide Crash Rate:	0.15	
18823	0560160 - 0.63	Int of CONGRESS ST INDIA ST	9	7	0	0	1	3	3	57.1	4.581	0.51	1.20	0.00
												Statewide Crash Rate:	0.67	
18911	0560160 - 0.67	Int of CONGRESS ST LOCUST ST	2	0	0	0	0	0	0	0.0	2.943	0.00	0.43	0.00
												Statewide Crash Rate:	0.15	
18799	0560160 - 0.71	Int of CONGRESS ST HAMPSHIRE ST	2	0	0	0	0	0	0	0.0	3.235	0.00	0.42	0.00
												Statewide Crash Rate:	0.15	
63225	0560160 - 0.76	Int of CONGRESS ST FRANKLIN ST	9	12	0	1	0	4	7	41.7	5.974	0.67	1.14	0.00
												Statewide Crash Rate:	0.67	
18794	0561110 - 0	End of FEDERAL ST E	2	0	0	0	0	0	0	0.0	0.007	0.00	-17.21	0.00
												Statewide Crash Rate:	0.14	
18795	0561110 - 0.02	Int of FEDERAL ST E HAMPSHIRE ST	2	0	0	0	0	0	0	0.0	0.274	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
18796	0561110 - 0.10	Int of FEDERAL ST E INDIA ST	2	1	0	0	0	0	1	0.0	2.510	0.13	0.45	0.00
												Statewide Crash Rate:	0.15	
18797	0561110 - 0.20	Int of FEDERAL ST E HANCOCK ST	2	0	0	0	0	0	0	0.0	0.154	0.00	0.48	0.00
												Statewide Crash Rate:	0.14	
18805	0560531 - 0	End of NEWBURY ST	2	0	0	0	0	0	0	0.0	0.006	0.00	-20.36	0.00
												Statewide Crash Rate:	0.14	
18800	0560531 - 0.03	Int of HAMPSHIRE ST NEWBURY ST	2	0	0	0	0	0	0	0.0	0.296	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18804	0560531 - 0.11	Int of INDIA ST NEWBURY ST	2	2	0	0	0	0	2	0.0	2.235	0.30	0.46	0.00
												Statewide Crash Rate:	0.15	
18803	0560531 - 0.19	Int of HANCOCK ST NEWBURY ST	2	1	0	0	0	0	1	0.0	0.249	1.34	0.59	2.28
												Statewide Crash Rate:	0.14	
18801	0560505 - 0.33	0509221 POR,MIDDLE,HAMPSHIRE ST	2	1	0	0	0	0	1	0.0	0.968	0.34	0.53	0.00
												Statewide Crash Rate:	0.14	
18817	0560505 - 0.39	Int of INDIA ST MIDDLE ST	2	4	0	0	1	2	1	75.0	2.212	0.60	0.46	1.30
												Statewide Crash Rate:	0.15	
18818	0560505 - 0.47	0509238 POR,HANCOCK,MIDDLE ST.	2	0	0	0	0	0	0	0.0	0.272	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
18836	0560286 - 0.08	Int of FORE ST WATERVILLE ST	2	0	0	0	0	0	0	0.0	1.748	0.00	0.44	0.00
												Statewide Crash Rate:	0.13	
18820	0560286 - 0.28	Int of FORE ST, MOUNTFORT ST	2	1	0	0	1	0	0	100.0	1.976	0.17	0.43	0.00
												Statewide Crash Rate:	0.13	
18822	0560286 - 0.45	Int of FORE ST INDIA ST	2	7	0	0	0	3	4	42.9	3.565	0.65	0.41	1.60
												Statewide Crash Rate:	0.15	
15397	0561001 - 0	Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER	9	8	0	0	0	3	5	37.5	4.896	0.54	1.19	0.00
												Statewide Crash Rate:	0.67	
18821	0561001 - 0.11	Int of COMMERCIAL ST INDIA ST	2	0	0	0	0	0	0	0.0	2.210	0.00	0.46	0.00
												Statewide Crash Rate:	0.15	
18517	0001A - 11.88	Int of FORE ST FRANKLIN ST	9	8	0	0	1	3	4	50.0	3.590	0.74	1.27	0.00
												Statewide Crash Rate:	0.67	
18518	0001A - 11.94	Int of FRANKLIN ST MIDDLE ST	9	20	0	0	1	5	14	30.0	5.287	1.26	1.17	1.08
												Statewide Crash Rate:	0.67	
18519	001AS - 1.91	Int of CONGRESS ST, FRANKLIN ST	9	11	0	1	1	2	7	36.4	7.631	0.48	1.09	0.00
												Statewide Crash Rate:	0.67	
18819	0561002 - 0	Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV	9	11	0	0	1	0	10	9.1	4.593	0.80	1.20	0.00
												Statewide Crash Rate:	0.67	
18798	0560524 - 0.14	Int of FEDERAL ST E MOUNTFORT ST	2	2	0	0	0	0	2	0.0	0.513	1.30	0.59	2.19
												Statewide Crash Rate:	0.14	
18802	0560524 - 0.17	Int of MOUNTFORT ST NEWBURY ST	2	0	0	0	0	0	0	0.0	0.449	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
Study Years:	3.00	NODE TOTALS:		150	0	2	11	32	105	30.0	105.383	0.47	0.51	0.92

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18520	63224	3118814	0 - 0.03	0561238 - 0.77	0.03	2	1	0	0	0	0	1	0.0	0.00107	312.57	683.74	0.00
Int of CUMBERLAND AV FRANKLIN ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
63224	18919	3115972	0 - 0.04	0561238 - 0.80	0.04	2	3	0	0	0	0	3	0.0	0.00106	940.32	684.19	1.37
Int of CUMBERLAND AV FRANKLIN ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18910	18919	3129300	0 - 0.03	0561238 - 0.84	0.03	2	7	0	0	0	2	5	28.6	0.00077	3047.62	737.95	4.13
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18910	18922	3118713	0 - 0.02	0561238 - 0.87	0.02	2	1	0	0	0	0	1	0.0	0.00049	678.28	804.41	0.00
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18915	18922	3117967	0 - 0.05	0561238 - 0.89	0.05	2	5	0	0	0	0	5	0.0	0.00120	1394.48	665.03	2.10
Int of CUMBERLAND AV, SMITH ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18915	19463	3131702	0 - 0.04	0561238 - 0.94	0.04	2	0	0	0	0	0	0	0.0	0.00088	0.00	715.17	0.00
Int of CUMBERLAND AV, SMITH ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18912	19463	194577	0 - 0.01	0561238 - 0.98	0.01	2	0	0	0	0	0	0	0.0	0.00021	0.00	850.21	0.00
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18912	18937	3130202	0 - 0.02	0561238 - 0.99	0.02	2	1	0	0	0	0	1	0.0	0.00040	835.08	829.57	1.01
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18937	19042	3131703	0 - 0.03	0561238 - 1.01	0.03	2	3	0	0	0	0	3	0.0	0.00059	1686.50	777.77	2.17
Int of CLEEVE ST CUMBERLAND AV				RD INV 05 61238											Statewide Crash Rate: 198.45		
18819	18913	3131697	0 - 0.03	0560160 - 0.52	0.03	2	1	0	0	0	0	1	0.0	0.00111	300.18	677.09	0.00
Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV				RD INV 05 60160											Statewide Crash Rate: 198.45		
18913	18914	194578	0 - 0.05	0560160 - 0.55	0.05	2	4	0	0	0	1	2	33.3	0.00189	706.78	592.48	1.19
Int of CONGRESS ST MONTGOMERY ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18823	18914	3118711	0 - 0.03	0560160 - 0.60	0.03	2	1	0	0	0	0	1	0.0	0.00117	284.21	668.12	0.00
Int of CONGRESS ST INDIA ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18823	18911	3120757	0 - 0.04	0560160 - 0.63	0.04	2	4	0	0	1	2	1	75.0	0.00116	1150.76	670.11	1.72
Int of CONGRESS ST INDIA ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18799	18911	3123999	0 - 0.04	0560160 - 0.67	0.04	2	2	0	0	0	0	2	0.0	0.00120	557.40	664.91	0.00
Int of CONGRESS ST HAMPSHIRE ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
63225	18799	3115974	0 - 0.05	0560160 - 0.71	0.05	2	1	0	0	0	1	0	100.0	0.00174	191.54	604.90	0.00
Int of CONGRESS ST FRANKLIN ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18519	63225	3115973	0 - 0.03	0560160 - 0.76	0.03	2	0	0	0	0	0	0	0.0	0.00128	0.00	654.44	0.00
Int of CONGRESS ST, FRANKLIN ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18794	18795	194384	0 - 0.02	0561110 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00000	0.00	-	0.00
End of FEDERAL ST E				RD INV 05 61110											Statewide Crash Rate: 384.19	42194.82	
18795	18796	194385	0 - 0.08	0561110 - 0.02	0.08	2	1	0	0	0	0	1	0.0	0.00024	1372.06	1568.43	0.00
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 61110											Statewide Crash Rate: 384.19		
18796	18797	194388	0 - 0.10	0561110 - 0.10	0.10	2	1	0	0	0	0	1	0.0	0.00011	2936.47	1652.05	1.78
Int of FEDERAL ST E INDIA ST				RD INV 05 61110											Statewide Crash Rate: 384.19		
18797	18798	194391	0 - 0.10	0561110 - 0.20	0.10	2	1	0	0	0	0	0	0.0	0.00006	5930.14	1307.34	4.54
Int of FEDERAL ST E HANCOCK ST				RD INV 05 61110											Statewide Crash Rate: 384.19		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18800	18805	194398	0 - 0.03	0560531 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00000	0.00	-	0.00
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19	30403.77	
18800	18804	194397	0 - 0.08	0560531 - 0.03	0.08	2	4	0	0	0	0	4	0.0	0.00008	15800.03	1582.54	9.98
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18803	18804	194402	0 - 0.08	0560531 - 0.11	0.08	2	1	0	0	0	0	1	0.0	0.00011	3119.00	1644.54	1.90
Int of HANCOCK ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18802	18803	194400	0 - 0.08	0560531 - 0.19	0.08	2	1	0	0	0	0	1	0.0	0.00006	5212.57	1423.30	3.66
Int of MOUNTFORT ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18518	18801	194025	0 - 0.06	0560505 - 0.27	0.06	2	2	0	0	0	1	1	50.0	0.00075	885.18	1225.13	0.00
Int of FRANKLIN ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18801	18817	194399	0 - 0.06	0560505 - 0.33	0.06	2	3	0	0	1	0	2	33.3	0.00017	5854.12	1638.94	3.57
0509221 POR,MIDDLE,HAMPSHIRE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18817	18818	194423	0 - 0.08	0560505 - 0.39	0.08	2	0	0	0	0	0	0	0.0	0.00032	0.00	1495.09	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18820	18836	3131698	0 - 0.20	0560286 - 0.08	0.20	2	5	0	0	2	0	3	40.0	0.00336	495.47	433.67	1.14
Int of FORE ST, MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
18820	18822	3106815	0 - 0.17	0560286 - 0.28	0.17	2	9	0	0	1	1	7	22.2	0.00323	929.24	438.31	2.12
Int of FORE ST, MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
18517	18822	3106667	0 - 0.11	0560286 - 0.45	0.11	2	2	0	0	0	0	2	0.0	0.00155	429.61	528.74	0.00
Int of FORE ST FRANKLIN ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
15397	18821	3106035	0 - 0.11	0561001 - 0	0.11	2	3	0	0	0	0	2	0.0	0.00260	385.13	545.43	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				RD INV 05 61001											Statewide Crash Rate: 198.45		
15397	18517	3123025	0 - 0.08	0001A - 11.80	0.08	2	1	0	0	0	1	0	100.0	0.00076	439.06	739.30	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1A											Statewide Crash Rate: 198.45		
18517	18518	3118954	0 - 0.06	0001A - 11.88	0.06	2	0	0	0	0	0	0	0.0	0.00078	0.00	734.26	0.00
Int of FORE ST FRANKLIN ST				US 1A											Statewide Crash Rate: 198.45		
18518	63225	3121455	0 - 0.16	0001A - 11.94	0.16	2	0	0	0	0	0	0	0.0	0.00337	0.00	509.80	0.00
Int of FRANKLIN ST MIDDLE ST				US 1A											Statewide Crash Rate: 198.45		
63225	63224	2566764	0 - 0.09	0001A - 12.10	0.09	2	2	0	0	0	1	1	50.0	0.00319	208.87	517.08	0.00
Int of CONGRESS ST FRANKLIN ST				US 1A											Statewide Crash Rate: 198.45		
18519	18520	3106670	0 - 0.09	001AS - 1.82	0.09	2	3	0	0	0	0	3	0.0	0.00326	306.28	514.07	0.00
Int of CONGRESS ST, FRANKLIN ST				US 1AS											Statewide Crash Rate: 198.45		
18518	18519	3106668	0 - 0.16	001AS - 1.91	0.16	2	1	0	0	1	0	0	100.0	0.00358	93.20	502.19	0.00
Int of FRANKLIN ST MIDDLE ST				US 1AS											Statewide Crash Rate: 198.45		
18517	18518	3118912	0 - 0.06	001AS - 2.07	0.06	2	2	0	0	1	0	1	50.0	0.00078	853.42	734.71	1.16
Int of FORE ST FRANKLIN ST				US 1AS											Statewide Crash Rate: 198.45		
15397	18517	3100256	0 - 0.08	001AS - 2.13	0.08	2	1	0	0	0	0	1	0.0	0.00107	312.58	683.74	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1AS											Statewide Crash Rate: 198.45		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18819	19042	3106814	0 - 0.06	0561002 - 0	0.06	2	4	0	0	0	0	4	0.0	0.00174	764.28	604.53	1.26
Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV				RD INV 05 61002											Statewide Crash Rate: 198.45		
18798	18819	194394	0 - 0.14	0560524 - 0	0.14	2	1	0	0	0	0	1	0.0	0.00073	455.85	1234.29	0.00
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18798	18802	194393	0 - 0.03	0560524 - 0.14	0.03	2	0	0	0	0	0	0	0.0	0.00013	0.00	1658.64	0.00
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18802	18820	194401	0 - 0.05	0560524 - 0.17	0.05	2	6	0	0	0	0	5	0.0	0.00019	10807.60	1626.49	6.64
Int of MOUNTFORT ST NEWBURY ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18912	18913	194575	0 - 0.05	0560510 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00005	0.00	1109.01	0.00
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 60510											Statewide Crash Rate: 384.19		
18914	18915	194579	0 - 0.06	0560666 - 0	0.06	2	1	0	0	0	1	0	100.0	0.00011	3074.89	1646.59	1.87
Int of CONGRESS ST SMITH ST				RD INV 05 60666											Statewide Crash Rate: 384.19		
18910	18911	194572	0 - 0.07	0560451 - 0	0.07	2	3	0	0	0	0	3	0.0	0.00009	10902.21	1610.95	6.77
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 60451											Statewide Crash Rate: 384.19		
18795	18799	194386	0 - 0.06	0560342 - 0.10	0.06	2	0	0	0	0	0	0	0.0	0.00007	0.00	1482.15	0.00
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18795	18800	194387	0 - 0.05	0560342 - 0.05	0.05	2	1	0	0	0	0	1	0.0	0.00012	2805.66	1655.82	1.69
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18800	18801	194396	0 - 0.05	0560342 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00010	0.00	1630.72	0.00
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18821	18822	3106816	0 - 0.06	0561000 - 0.23	0.06	2	0	0	0	0	0	0	0.0	0.00124	0.00	659.57	0.00
Int of COMMERCIAL ST INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18817	18822	3106813	0 - 0.05	0561000 - 0.18	0.05	2	1	0	0	0	0	1	0.0	0.00088	378.86	715.36	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18804	18817	3122291	0 - 0.05	0561000 - 0.13	0.05	2	3	0	0	1	0	1	50.0	0.00099	1008.74	695.75	1.45
Int of INDIA ST NEWBURY ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18796	18804	3130049	0 - 0.05	0561000 - 0.08	0.05	2	3	0	0	0	0	3	0.0	0.00112	889.95	675.15	1.32
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18796	18823	3106811	0 - 0.08	0561000 - 0	0.08	2	2	0	0	0	0	2	0.0	0.00189	353.64	592.58	0.00
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18803	18818	194403	0 - 0.05	0560344 - 0.04	0.05	2	0	0	0	0	0	0	0.0	0.00007	0.00	1518.66	0.00
Int of HANCOCK ST NEWBURY ST				RD INV 05 60344											Statewide Crash Rate: 384.19		
18797	18803	194392	0 - 0.04	0560344 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00006	0.00	1288.27	0.00
Int of FEDERAL ST E HANCOCK ST				RD INV 05 60344											Statewide Crash Rate: 384.19		
Study Years: 3.00				Section Totals:	3.68		102	0	0	8	11	78	18.6	0.05523	615.59	292.48	2.10
				Grand Totals:	3.68		252	0	2	19	43	183	25.4	0.05523	1520.87	412.47	3.69

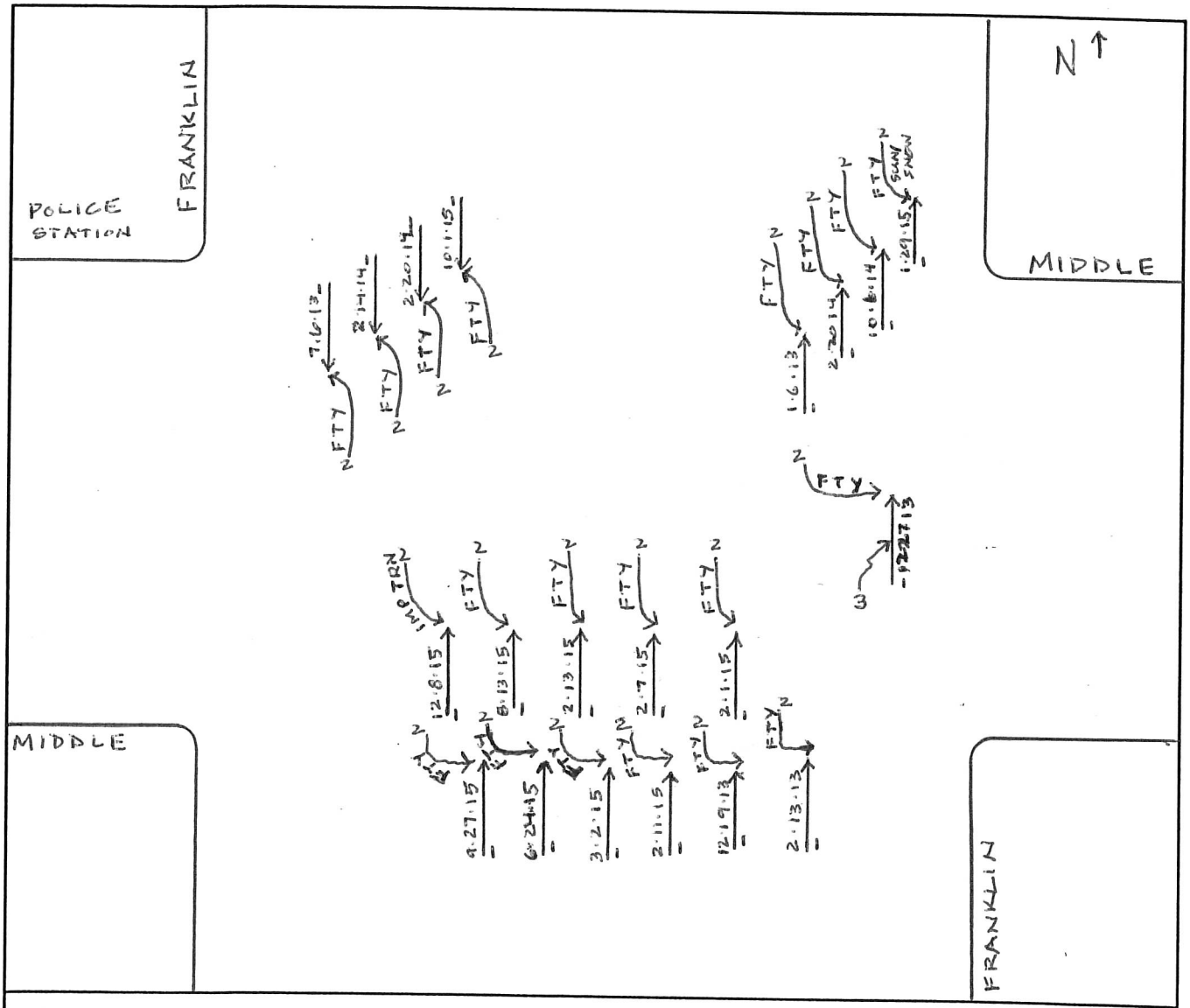
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Franklin & Middle Streets

TOWN Portland, Maine NODE NO(S) 18518

YEARS REVIEWED 2013 - 2015 DATE PREPARED 08.29.2016



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT OR FACTOR
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER

C - CLEAR
SL - SLEET
F - FOG
S - SNOW
R - RAIN
CL - CLOUDY
XW - CROSS WINDS

INJURIES

K - FATAL
A - INCAPACITATING
B - NON-INCAPACITATING
C - POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Franklin & Middle Streets

TOWN Portland, ME NODE NO(S) 18518

YEARS REVIEWED 2013 - 2015 DATE PREPARED 08·29·2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
00076	01·06·13	08:55	-	-	-	1	2	2	2	
000535	02·13·13	06:41	-	-	-	-	2	2	2	
001912	07·06·13	13:08	-	-	-	-	2	1	2	
003722	12·19·13	19:47	-	-	-	-	4	2	2	
003801	12·27·13	08:55	-	-	-	-	2	3	2	
000570	02·14·14	07:56	-	-	-	1	2	3	2	
000702	02·20·14	12:46	-	-	-	-	2	2	2	
000703	02·20·14	12:50	-	-	-	-	2	2	2	
002950	10·06·14	18:10	-	-	-	-	2	1	2	
000362	01·29·15	07:48	-	-	-	1	2	3	2/19	
000442	02·01·15	16:15	-	-	-	1	2	3	2	
000617	02·07·15	14:49	-	-	-	-	2	2	2	
000724	02·11·15	13:04	-	-	-	-	2	2	2	
000769	02·13·15	08:22	-	-	-	-	2	2	2	
001020	03·02·15	14:59	-	-	-	-	2	1	2	
002165	06·24·15	09:30	-	-	-	1	2	1	2	
002716	08·13·15	08:15	-	-	-	-	2	1	2	
003242	09·27·15	10:32	-	-	1	-	2	1	2	
003298	10·01·15	08:45	-	-	-	-	2	1	2	
004095	12·08·15	10:31	-	-	-	-	2	1	10	

S:/SHEETS/COLLISION DIAGRAM.DWG

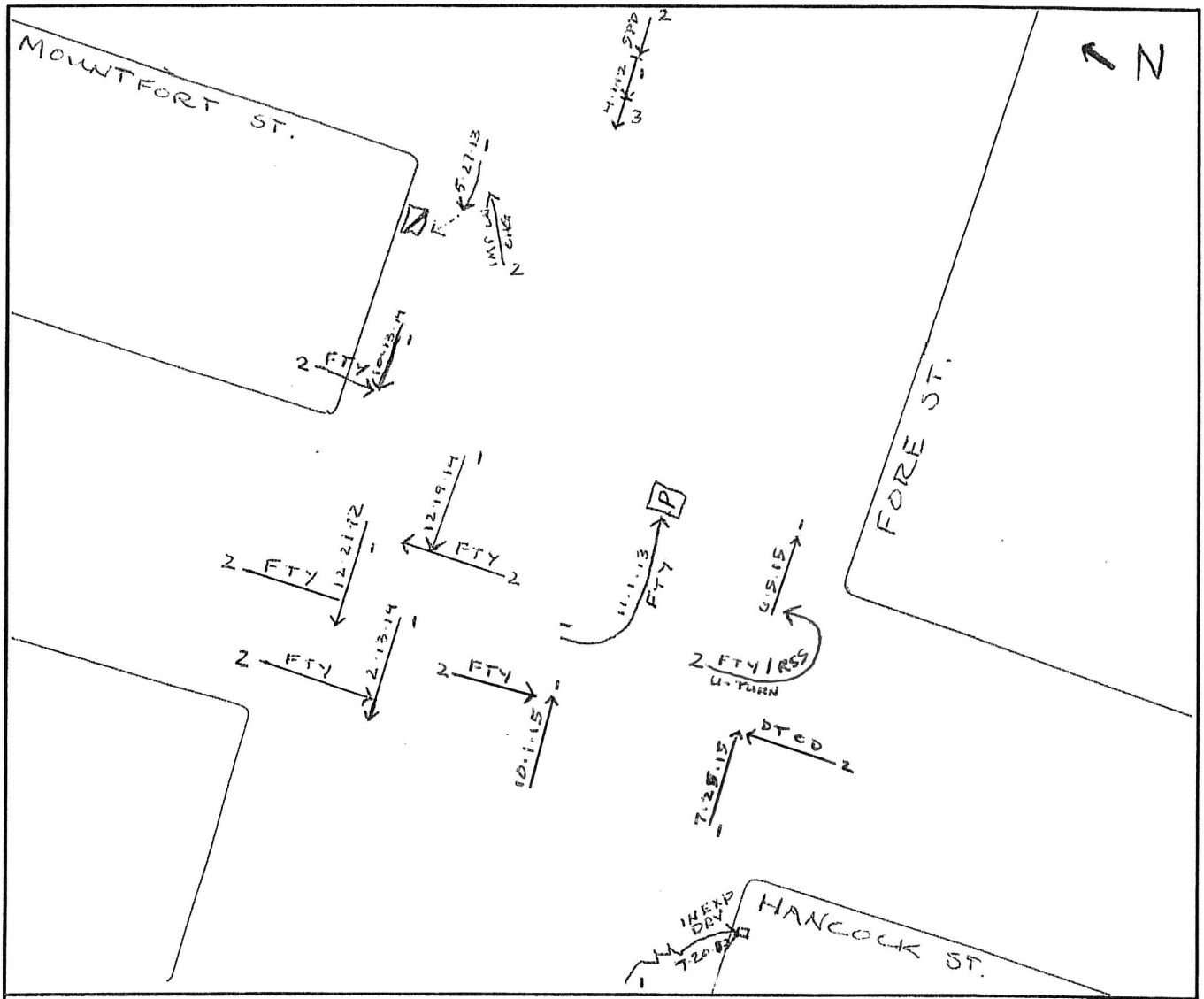
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Fore Street & Hancock Street

TOWN Portland, Maine NODE NO(S) 18820 to 18822

YEARS REVIEWED 2012 - 2015 DATE PREPARED 08.29.2016



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/PROJECTS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Fore Street & Hancock Street

TOWN Portland NODE NO(S) 18820 to 18822

YEARS REVIEWED 2012 - 2015 DATE PREPARED 08.29.2016

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
00781	04.01.12	02:55	-	-	-	1	4	1	3	
003253	12.21.12	16:53	-	-	-	2	4	2	2	
001534	05.27.13	12:40	-	-	-	1	2	1	8	
002062	07.20.13	10:29	-	-	-	-	2	1	15	Student Driver
003090	11.01.13	15:30	-	1	-	-	2	1	2	
000550	02.13.14	10:03	-	-	-	-	2	2	2	
003007	10.13.14	10:09	-	-	-	-	2	1	2	
003756	12.19.14	15:09	-	-	-	-	2	1	2	
001962	06.05.15	10:35	-	-	-	-	2	1	2/5	U-Turn
002518	07.25.15	17:59	-	-	-	-	2	1	5	
003289	10.01.15	13:11	-	-	-	-	2	2	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

Section 3
Development Entrances and Exits

3.A. Entrance and Exit Locations

Vehicular access to the site is via a full movement site driveway onto Fore Street primarily for the residential units, Thames Street Extension for the non-residential site uses and a proposed new public road connecting Fore Street to Thames Street Extension.

3.B. Plan View

Attachment 1A of Section 1 shows the proposed site plan.

- Frontage Road(s) – Fore Street
- Posted Speed Limit – 25 mph
- Sight Lines – The posted speed limit on Fore Street is 25 mph, which requires a MaineDOT and City available sight distance of 200 feet. The measured available sight distance exiting the site accesses exceeds 200 feet looking left and right from the proposed road connecting Fore Street to Thames Street Extension. The sight distance looking left from the proposed road onto Fore Street could be improved by relocating the Hamilton Marine sign further from the edge of the road. The proposed site driveway across from Waterville Street exceeds the sight distance requirements in both directions, provided that on-street parking spaces within the site triangle on either side of the driveway are removed.

Section 4
Title, Right or Interest

4.A. Evidence of Title, Right, or Interest

A copy of the Deeds are included in Attachment 4A

4.B. Attachments

Attachment 4A – July 2013 Deed, April 2014 Deed

Attachment 4A

July 2013 Deed

April 2014 Deed

MAINE REAL ESTATE TAX PAID

TRUSTEES' DEED

Maine Statutory Short Form

KNOW ALL BY THESE PRESENTS THAT **ELIZABETH M. SPRAGUE, ERIC THOMAS SPRAGUE and PHINEAS M. SPRAGUE, as Trustees of THE BUENA VISTA TRUST**, under indenture dated December 20, 2011, with a principal place of business in Cape Elizabeth, Maine, by the power conferred by law, and every other power, for consideration paid, grant to **CPB2 LLC**, a Delaware limited liability company, with a place of business c/o Blue Water Construction, 41 Glendale Place, Gilford, New Hampshire 03249, the land, together with any improvements thereon, situated in the City of Portland, County of Cumberland, State of Maine, described on Exhibit A attached hereto.

Pursuant to Title 18-B M.R.S. § 1013, we, in our capacities, do hereby certify that (1) we are all of the Trustees of said Trust; (2) the Trust exists as the date of this Agreement; (3) we have power under said Trust to convey any trust asset in our sole discretion and need no consent from any beneficial interests; (4) we are the trustees authorized to execute or otherwise authenticate any and all documents in the exercise of our power; (5) in making this conveyance, we have in all respects acted in pursuance of the authority granted in and by said Trust; and (6) the Trust has not been revoked, modified, amended or terminated in any way that would cause the representations contained in this certificate to be incorrect.

[signatures on next page]

Witness our hands and seals this 19 day of the month of July, 2013.

WITNESS:

THE BUENA VISTA TRUST

_____

By_____
Eric Thomas Sprague, Trustee

_____

By_____
Elizabeth M. Sprague, Trustee

_____

By_____
Phineas M. Sprague, Trustee

STATE OF MAINE
COUNTY OF CUMBERLAND

July __, 2013

Then personally appeared the above named Eric Thomas Sprague, in his said capacity and acknowledged the foregoing instrument to be his free act and deed.

Before me,

_____
Notary Public/Attorney at Law

Witness our hands and seals this 26 day of the month of July, 2013.

WITNESS:

THE BUENA VISTA TRUST

By _____
Eric Thomas Sprague, Trustee

By _____
Elizabeth M. Sprague, Trustee

By _____
Phineas M. Sprague, Trustee

STATE OF MAINE
COUNTY OF CUMBERLAND

July 26, 2013

Then personally appeared the above named Eric Thomas Sprague, in his said capacity and acknowledged the foregoing instrument to be his free act and deed.

Before me,

_____
~~Notary Public~~/Attorney at Law

EXHIBIT A

A certain lot or parcel of land together with the buildings thereon situated on the southerly side of Fore Street in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at a point on the southerly sideline of Fore Street at the northeasterly corner of Tract I as shown on "ALTA/ACSM Land Title Survey 58 Fore Street, Portland, Cumberland County, Maine made for CPB2 LLC" dated May 22, 2013 by Owen Haskell, Inc., thence N53°19'30"E along the southerly sideline of said Fore Street 140.00 feet;

Thence, N 61° 01' 30" E along the southerly sideline of said Fore Street 43.36 feet to land now or formerly of Macgowan as described in the Deed recorded in Cumberland County Registry of Deeds in Book 15773, Page 153;

Thence, S 31° 18' 30" E along land of said Macgowan 150.00 feet;

Thence, N 61° 01' 30" E along land of said Macgowan 112.00 feet to land now or formerly of Timothy Haley, Trustee, as described in the Deed recorded in the said Registry of Deeds in Book 24759, Pages 67 & 69;

Thence, S 31° 18' 30" E along land of said Haley 110.28 feet;

Thence, N 63° 18' 30" E along land of said Haley 100.00 feet;

Thence, N 31° 18' 30" W along land of said Haley 95.88 feet;

Thence, N 69° 31' 20" E along land of said Haley 49.73 feet to land now or formerly of Eastern Promenade Condominium;

Thence, S 31° 18' 26" E along land of said Eastern Promenade Condominium 240.48 feet to an iron rod found and to land now or formerly of the State of Maine as described in the Deed recorded in said Registry of Deeds in Book 10924, Page 91;

Thence, S 63° 18' 30" W along land of said State of Maine 430.00 feet to the easterly line of said Tract I;

Thence, N 33° 29 '33" W along said Tract I 381.17 feet to the point of beginning containing 2.87 acres.

The premises are conveyed together with the right of access and egress running from the existing paved driveway over land now or formerly of The Portland Company to the

premises conveyed herein as described in a deed to Elizabeth M. Sprague, Eric Thomas Sprague and Phineas M. Sprague, Trustees of The Buena Vista Trust by Warranty deed of The Portland Company dated December 30, 1012 and recorded in the Cumberland County Registry of Deeds in Book 30265, Page 32.

Meaning and intending to convey and hereby conveying the same premises conveyed to Elizabeth M. Sprague, Eric Thomas Sprague and Phineas M. Sprague, Trustees of The Buena Vista Trust by Warranty Deed of The Portland Company, dated December 30, 2012 and recorded in the Cumberland County Registry of Deeds in Book 30265, Page 32.

S:\P\POCO14\Prentice Purchase\Sale Documents\Deed of Trustees.doc

Received
Recorded Register of Deeds
Jul 29,2013 03:54:21P
Cumberland County
Pamela E. Lovley

Doc#: 13675 Bk:31425 Pg: 267

QUITCLAIM DEED WITH COVENANT

Maine Statutory Short Form

MAINE REAL ESTATE TAX PAID

KNOW ALL BY THESE PRESENTS, that **THE PORTLAND COMPANY**, a Maine corporation and having a place of business at 58 Fore Street, County of Cumberland, and State of Maine, for consideration paid, grants to **CPB2 LLC**, a Delaware limited liability company, with an address of P.O. Box 7987, Portland, Maine 04112, with **QUITCLAIM COVENANTS,** the land located in Portland, County of Cumberland and State of Maine, and more particularly described in Exhibit "A" attached hereto and made a part hereof.

IN WITNESS WHEREOF, said THE PORTLAND COMPANY has caused this instrument to be signed and sealed this 1st day of April, 2014.

WITNESS:

THE PORTLAND COMPANY

Phineas Sprague Jr

By: Phineas Sprague, Jr.
Its: President

STATE OF MAINE
COUNTY OF CUMBERLAND

April 1, 2014

Personally appeared the above-named Phineas Sprague, Jr. in his said capacity, and acknowledged the foregoing to be his free act and deed and that of said corporation, The Portland Company, before me.

~~Notary Public~~/Attorney at Law

Drew A. Anderson

Printed Name

EXHIBIT A

TRACT I

A certain lot or parcel of land together with the buildings thereon situated on the southerly side of Fore Street, City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at a point on the southerly sideline of Fore Street at a railroad spike at the northeasterly corner of land now or formerly of Hope 1 LLC as described in deed Book 22261, Page 50, thence S 87° 34' 45" E along the southerly sideline of said Fore Street 287.74 feet;

Thence, N 53° 19' 30" E along the southerly sideline of said Fore Street 594.45 feet to the northwesterly corner of Tract III, as shown on "ALTA/ACSM Land Title Survey, 58 Fore Street, Portland, Cumberland County, Maine made for CPB2 LLC" by Owen Haskell, Inc. dated May 22, 2013.

Thence, S 33° 29' 33" E along the westerly side of said Tract III 381.17 feet to land now or formerly of the State of Maine as described in deed Book 10924, Page 91;

Thence, S 63° 18' 30" W along land of said State of Maine 255.00 feet;

Thence, S 68° 31' 30" W along land of said State of Maine 442.91 feet to an iron rod found (bent) and land now or formerly of City of Portland as described in deed Book 21951, Page 341;

Thence, N 88° 12' 30" W along land of said City of Portland 137.25 feet to a non-tangent curve to the right;

Thence, following the curve to the right, along land of said City of Portland and land of said Hope 1 LLC, having a radius of 274.33 feet, an arc length of 337.36 feet, a chord bearing of N 38° 35' 30" W, and a chord length of 316.50 feet, to the southerly sideline of Fore Street and the point of beginning containing 6.04 acres.

Basis of bearings: Magnetic 1967.

TRACT II

A certain lot or parcel of land together with the buildings thereon situated southerly of but not adjacent to Fore Street, in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Commencing at a point on the southerly line of Tract I, at an iron rod found (bent) at the southeasterly corner of land now or formerly of the City of Portland as described in deed Book 21951, Page 341, on the northerly line of land now or formerly of the State of Maine as described in deed Book 10924, Page 91, as shown on "ALTA/ACSM Land Title Survey, 58 Fore Street, Portland, Cumberland County, Maine made for CPB2 LLC" by Owen Haskell, Inc. dated May 22, 2013.

Thence, N 68° 31' 30" E along the northerly line of land of said State of Maine 215.11 feet;

Thence, S 27° 09' 40" E across land of said State of Maine and along the easterly line of land now or formerly of the City of Portland 50.25 feet to the true point of beginning;

Thence, N 68° 31' 30" E along the southerly sideline of land of said State of Maine 225.10 feet;

Thence, N 63° 18' 30" E along the southerly sideline of land of said State of Maine 690.74 feet;

Thence, S 30° 39' 00" E along land of said State of Maine 56.34 feet;

Thence, S 61° 35' 30" W 27.46 feet;

Thence, S 77° 24' 52" W 94.07 feet;

Thence, S 62° 35' 30" W 475.00 feet;

Thence, S 38° 50' 30" W 60.00 feet;

Thence, S 63° 50' 30" W 120.00 feet;

Thence, N 26° 10' 00" W 8.00 feet;

Thence, S 63° 49' 37" W 150.00 feet to land of said City of Portland;

Thence, N 27° 09' 40" W along land of said City of Portland 74.89 feet to the point of beginning containing 44,274 sq. ft.

Basis of bearings: Magnetic 1967.

ALSO CONVEYING two crossings for vehicular, pedestrian and utility access to and from other land now or formerly of Phineas Sprague to the most immediately above described parcel across the area shown on Exhibit B of Indenture Deed by and between the Maine Department of Transportation and Phineas Sprague, dated August 30, 1993 and recorded in Book 10924, Page 97, as the "Rail-Trail Corridor." Each crossing shall be 50 feet in width over the 50 foot wide "Rail-Trail Corridor" plus turning radii, as necessary, at the entrances to the crossings from the above described parcel of land. Such crossings may be moved from time to time by the Grantee at its expense upon proper notice to and approval by the Maine Department of Transportation, provided that the distance between the centerlines of the two crossings shall never be less than 200 feet; and further provided that in the event of any relocation, any former crossing shall be restored to the condition it would have been in had the crossing not been placed in that location.

TOGETHER WITH any upland including the seawall which immediately adjoin the above described premises.

Received
Recorded Register of Deeds
Apr 03,2014 12:25:29P
Cumberland County
Pamela E. Lovley

Section 5
Public or Private Rights-of-Way

5.A. Public or Private Rights-of-Way

The site will have three accesses; Thames Street Extension into the site, a full movement driveway onto Fore Street across from Waterville Street, and a new public road that connects Fore Street to Thames Street Extension.

Section 6
Schedule

6.A. Schedule

The proposed project is anticipated to be completed and occupied by 2027.

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

Site Parking Demand
58 Fore Street Mixed Use Development
Portland, Maine
JN 3138

Date: September 16, 2016
Subject: Site Parking Demand
58 Fore Street Mixed Use Development
To: David Senus, Mary McCrann, Jim Brady, Kevin Costello, Casey Prentice
From: Randy Dunton and Emily Tynes, Gorrill Palmer (JN 3138)

The following is a summary of the estimated parking demand for the proposed mixed use development at 58 Fore Street. The following table summarizes the sizes and uses of the proposed development used to calculate the parking demand:

Proposed Site Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

It should be noted that the retail portions of the proposed site will be multiple smaller shops, not large retail stores.

Parking Demand Calculation Methodologies

The parking demand has been determined using two methodologies: using the City Ordinance requirements and based on a shared parking demand. The following summarizes the methodologies in more detail:

City Ordinance Parking Demand

The Ordinance requirement methodology involves calculating the peak parking demand for each use using the City of Portland Code of Ordinances. This method assumes each use is isolated and then adds the individual demands to determine the parking demand for the site. The supporting calculations for this method are attached. This method results in an overestimate because the peak demands for each use are not expected to occur at the same time. For example, offices require more spaces during the day while employees are in the office, and residential buildings would require more spaces later at night when residents are home from work.

The City Ordinance Ch. 14, Art III, Div. 20, Sec. 14-332.2 (c) states, "where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer." Since this mixed use development is approximately 958,679 sf of building floor area, it meets the criteria. Therefore, the site parking demand was determined based on the following methodology.

Shared Parking Plan

The shared parking plan methodology is based on a combination of City Ordinance parking demand, the ITE Parking Generation Manual (4th Edition), and published data / engineering judgement and it reflects that the demand for different uses will peak during different times of day. Since different uses do not peak at the same times, parking spaces can be shared between uses. To determine the shared parking demand, the total parking demand was calculated for each use, then distributed throughout the day based on the type of use. This is the same methodology used for the recent Thompson's Point project. The supporting calculations are attached. With a shared parking plan it is recommended that shared parking language be included in the leases, to ensure tenants understand the shared parking.

Parking Demand Reductions

Given the mixed use of the site as well as its downtown location, the following two parking demand reductions were applied to the shared parking spaces:

Shared Use Reduction

When evaluating a mixed use development with complementary uses such as this, the overall parking demand can be reduced due to the expectation that there will be some cross use between the individual facilities. For instance, it can be assumed that some of the people living in the apartments would also be those that visit the retail. Gorrill Palmer (GP) used the NCHRP 684 Internal Trip Capture Estimation Tool to calculate the reduction that can be applied to the trip generation. This calculated an internal trip capture of 14% for the AM peak hour and 17% for the PM peak hour. It can be assumed that parking demand can be reduced proportionally to the reduction in trip generation. To be conservative, GP used a shared use reduction of 14% throughout the day to estimate the parking demand. The following table summarizes the shared use reduction:

Shared Use Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand	919	690
Shared Use Reduction (14%)	-129	-97

Other Modes Reduction

The overall parking demand for a development in a downtown area can also be reduced due to the expectation that some people going to or from the site would use other modes of transportation such as transit, bicycle, or walking. The site is adjacent to an existing bus route as well as located on a bicycle and pedestrian path. The other modes reduction is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract. Based on this information Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, created maps using GIS data that illustrate the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to commute to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the individual tracts. This reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number

of working people in the same three Census Tracts. This calculation yields a 35.8% use of non-vehicular modes of transportation.

The GPCOG data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site. It was not clear if the 35.8% reduction would also be applicable to the restaurants and hotel, even though there are hotels and restaurants located within the boundaries of the three Census Tracts. GP searched for studies that included information on other modes of transportation for restaurants and hotels and found two sources that had information that could be compared to the other modes of transportation calculated using the Portland Census data. The following is a more detailed description of the relevant information found in the two studies:

The first study is *Contextual Influences on Trip Generation* (found in the United States Department of Transportation National Transportation Library online database or at the following link: http://ntl.bts.gov/lib/46000/46600/46699/CITG_FinalReport_Draft_10022012.pdf), a study for the Oregon Transportation Research and Education Consortium (OTREC) that compared the ITE predicted trip generation to the actual trip generation of 79 locations in Portland, Oregon, 39 of which were high turnover sit-down restaurants. The study also included surveying the visitors of those sites to determine what mode of transportation the visitors used. The results of the study are divided into different types of areas, ranging from central business district, which is considered the most urban area, to suburban areas, which is considered the least urban type of area surveyed. This study surveyed 12 restaurants in the central business district area and found that 35% of the patrons arrived to the sites using a car, while the remaining 65% walked, biked, or used transit (table attached). This result is higher than the 35.8% use of other modes calculated using the GPCOG information. Because the data is for Portland, Oregon it may not be appropriate to use as a reduction, but it does indicate that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

The second source that included restaurant information is the National Cooperative Highway Research Program (NCHRP) Report 758, *Trip Generation Rates for Transportation Impact Analyses of Infill Developments*. This study used information from the Household Travel Survey (HTS) for the San Francisco Bay area and Metropolitan Washington D.C. and counted data and surveys at specific sites in those areas. The Washington D.C. HTS data for restaurants shows that approximately 40.3% of residents use transit, walk, or bicycle to and from high-turnover sit-down restaurants (table attached). The study only included one site that was counted and surveyed, so the HTS data could not be verified, however like the Portland, Oregon study, it is higher than the other modes reduction calculated using the GPCOG Census information. Like the Portland, Oregon study, this data indicates that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

Based on these two additional sources that contain information specific to restaurant uses, GP determined that the other modes reduction of 35.8% calculated from the GPCOG Census

information that is based on the existing transit system can be applied to the restaurant parking demand. Although the other two studies showed higher percentages of people using alternative modes of transportation to go to or from restaurants, since they are not specific to Portland, Maine, the local data is expected to be closer to the actual conditions that would be seen at the 58 Fore Street development.

The two studies discussed above included information about restaurants, but did not have any data for hotels. Based on our research there is limited information available about modes of transportation used at hotels. It can be assumed for the 58 Fore Street site that hotel employees may take the bus, bike, or walk to get to and from work and some hotel guests may arrive by boat using the marina. To be conservative, GP only used an "other modes of transportation" reduction of 10% for the hotel.

The following table summarizes the other modes of transportation reduction for the site:

Other Modes of Transportation Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand w/o Hotel	886	677
Hotel Peak Parking Demand	33	13
Other Modes Reduction (35.8% of B1-B6 Demand w/o Hotel)	-317	-242
Hotel Other Modes Reduction (10% of Hotel Demand)	-3	-1
Total Other Modes Reduction	**-320**	**-243**

Marina Parking Demand

The City Ordinance does not include a parking requirement for marina facilities. The parking demand for the proposed marina is based on information from Applied Technology & Management (ATM). The new marina is proposed to have 220 slips that will service off-site Portland residents, on-site Portland residents, and transient boaters. ATM provided a range of parking rates from one space for every two slips to one space for every four slips. ITE has limited marina parking information available, however the ATM parking rates appear to be consistent with the ITE data. To be conservative, GP used a requirement of one parking space for every two slips. ATM expects peak usage of the marina to be 10% of the slips, but possibly higher since Maine has a shorter boating season. To be conservative, GP assumed that the peak demand would be 15% of the slips. ATM also stated that there would be approximately 9 employees at this marina, therefore GP included an additional 5% to include spaces for employees, giving a total peak demand estimation of 20% of the slips. Because of the nature of a marina use, the two parking demand reductions that were applied to the rest of the site were not applied to the

marina parking demand. Although it is possible that marina users visit other uses on site or use alternative modes of transportation to get to the site, to be conservative the reductions were not applied.

Dedicated Parking Spaces

Often in large developments, a portion of parking spaces are dedicated to a specific use. For example, residential units may have spaces assigned to each unit or a group of spaces may be reserved for use by only an office. These dedicated spaces would not be shared by any other site uses. The number of dedicated parking spaces is added to the number of shared parking spaces to determine the total site demand. On this site, there are 298 dedicated parking spaces proposed. These spaces include; half of the residential units in B1, all the residential units in B5, and all the residential units in B6. The two parking demand reductions that were applied to the rest of the site were not applied to the dedicated parking spaces, since the spaces will not be shared and will be provided for the peak demand regardless of the expected use of transit, bicycles, or walking.

Parking Demand Summary

The following table summarizes the overall parking demand for the site, including the reductions, based on both the Ordinance and the Shared Parking demand methodologies:

Parking Demand Summary

Proposed	Ordinance	Shared Parking
B1-B6 Shared Parking Demand	919	690
Shared Use Reduction	-129	-97
Other Mode Reduction	-320	-243
B1-B6 Total Shared Parking Demand	**470**	**350**
B7 (Marina) Parking Demand	110	22
B1-B7 Total Parking Demand	**580**	**372**
B1-B7 Dedicated Parking	298	298
Net Parking Demand	**878**	**670**

As shown in the table, the proposed parking demand, including reductions, based on the Ordinance and isolated uses is forecast to be 878 spaces and the parking demand based on shared parking is 670 spaces. The parking demand based on the City Ordinance is higher than the shared parking demand because it assumes all uses will require their peak parking demand concurrently whereas the shared parking demand considers the different uses peaking at different times of day.

It should be noted that a parking facility can be considered full when it is approximately 85% occupied. This is because a driver may not see empty parking spaces when the lot is almost completely occupied, especially in a larger parking area. **To ensure the peak parking demand is satisfied, the recommended number of spaces is 736 (372 spaces / 0.85 + 298 spaces).** This assumes that shared spaces are generally available to all users. The increase is not applied to the dedicated parking spaces because it is assumed that they will be visible and easy for the designated users to find.

The marina may also have additional parking needs, such as temporary parking spaces for visitors to drop off passengers or supplies near their boat before parking their vehicle and for fueling trucks and provisional vehicles that service the mega-yachts. These other parking spaces should be considered in addition to the estimated peak parking demand for the visitors and employees.

Bicycle Parking

Per City Ordinance, new uses are required to provide bicycle accommodations based on the type of use. Residential structures are required to provide 2 bicycle spaces for every 5 dwelling units. Non-residential structures are required to provide 2 bicycle parking spaces for every 10 vehicle parking spaces for the first 100 required spaces, plus one bicycle parking space for every 20 required vehicle parking spaces over the 100 vehicle parking spaces. The following table shows the required bicycle parking for the Ordinance vehicle parking demand and the Shared Parking demand:

Bicycle Parking Summary

	Ordinance	Shared Parking
Parking Variable	409 Spaces, 638 Units	322 Spaces, 638 Units
Residential Bicycle Spaces	256	256
Non-Residential Bicycle Spaces	36	31
Total	**292**	**287**

As shown in the table, the site will require 287-292 bicycle parking spaces to meet the City Ordinance Requirements for bicycle accommodations. The Transportation Demand Management (TDM) plan will outline a more detailed approach to incorporating bicycle parking on site.

09-02-16 Ordinance Parking Estimate

Building Letter	P1	P1	P1	P1	P1	P1	P1	P2	P2	P2	P2	P2	P2	P2	P3	P3	P3	P3	P3	P4	P4	P4	P4	P4	P5	P5	P5	P5	P5	P5	P5	P6	P6	P6	P6	P6	P1-P6	P7	P7	
	Specialty Retail	Specialty Retail	Residential	Residential	Office	Office	Total	Specialty Retail	Specialty Retail	Residential	Residential	Office	Office	Total	Specialty Retail	Specialty Retail	Office	Office	Total	Residential	Residential	Specialty Retail	Specialty Retail	Total	Residential	Residential	Hotel	Hotel	Restaurant	Restaurant	Total	Residential	Residential	Residential	Residential	Total	Total	Marina (1)	Marina (1)	**Total**
PGR	200	1 / 200 sf over 2,000 sf	1	1 per Unit	400	1 / 400 sf		200	1 / 200 sf over 2,000 sf	1.00	1 per Unit	400	1 / 400 sf		200	1 / 200 sf over 2,000 sf	400	1 / 400 sf		1	1 per Unit	200	1 / 200 sf over 2,000 sf		1	1 per Unit	1/4	1 per 4 guests	1/150			1	1 per Unit	1	1 per Unit			1/2	1 per 2 slips	
Monthly Adjustment		1		1		1		1.00	1.00	1.00	1	1.00	1		1			1		1	1		1.00		1	1		1	1.0	1			1		1					
SQF or Unit	7,878	7,878 sf	91	91 Units	79,000	79,000 sf		26,895	26,895 sf	19	19 Units	25,617	25,617 sf		11,500	11,500 sf	19,300	19,300 sf		275	275 Units	4,000	4,000 sf		108	108 Units	132	132 rooms	3,800	3,800 sf		131	131 Units	14	14 Units			220	220 slips	
Max Demand	1.000	29	1.00	91	1.00	198	318	1.000	124	1.00	19	1.00	64	208	1.000	48	1.00	48	96	1.00	275	1.000	10	285	1.00	108	1.00	33	1.00	25	166	1.00	131	1.00	14	145	1217	1.00	110	1327
Dedicated Spaces	0.000	0	0.50	45	0.00	0	45	0.000	0	0.00	0	0.00	0	0	0.000	0	0.00	0	0	0.00	0	0.000	0	0	1.00	108	0.00	0	0.00	0	108	1.00	131	1.00	14	145	298	0.00	0	298
Demand w/oDedicated		29		46		198	272		124		19		64	208		48		48	96		275		10	285		0		33		25	58		0		0	0	919		110	1029

(1) The marina parking demand is based on information from ATM. They suggest the peak demand is 10% (possibly higher) of the total number of slips. We used a peak demand of 20% to include 15% of slips (33 slips) and the marina employees. The peak slip usage includes on-site residents and transient boaters that would not require marina parking, as well as the off-site residents that would require parking. It is assumed that most of the off-site slip users arrive at the site during the peak hour, which is reflected in the shared use factors.

09-02-16 Parking Estimate Marina Shared

Building	45 Dedicated Spaces – P1							P2						
	P1		P1		P1		Total for P1	P2		P2		P2		Total for P2
	Specialty Retail		Residential		Office			Specialty Retail		Residential		Office		
Rate	200	1 / 200 sf	1	1 per Unit	400	1/400 sf		200	1 / 200 sf	1.00	1 per Unit	400	1/400 sf	
Monthly Adjustment														
SQF or Unit	7,878	7,878 sf	91	91 Units	79,000	79,000 sf		26,895	26,895 sf	19	19 Units	25,617	25,617 sf	
6:00AM	0.00	0	0.84	31	0.00	0	31	0.00	0	0.84	16	0.00	0	16
7:00AM	0.20	8	0.62	11	0.20	40	58	0.20	27	0.62	12	0.20	13	51
8:00AM	0.64	25	0.41	0	0.64	126	151	0.64	86	0.41	8	0.64	41	134
9:00AM	0.93	37	0.34	0	0.93	184	220	0.93	125	0.34	6	0.93	60	191
10:00AM	1.00	39	0.32	0	1.00	197	237	1.00	134	0.32	6	1.00	64	205
11:00AM	1.00	39	0.31	0	1.00	197	237	1.00	134	0.31	6	1.00	64	204
12:00PM	0.90	35	0.30	0	0.90	177	212	0.90	121	0.30	6	0.90	57	184
1:00PM	0.90	35	0.31	0	0.90	177	212	0.90	120	0.31	6	0.90	57	184
2:00PM	1.00	39	0.33	0	1.00	198	237	1.00	134	0.33	6	1.00	64	205
3:00PM	1.00	39	0.37	0	1.00	198	237	1.00	134	0.37	7	1.00	64	206
4:00PM	0.93	37	0.45	0	0.93	184	221	0.93	125	0.45	9	0.93	60	193
5:00PM	0.64	25	0.61	10	0.64	126	161	0.64	86	0.61	12	0.64	41	138
6:00PM	0.20	8	0.69	17	0.20	40	65	0.20	27	0.69	13	0.20	13	53
7:00PM	0.00	0	0.72	20	0.10	20	40	0.00	0	0.72	14	0.10	6	20
8:00PM	0.00	0	0.80	27	0.10	20	47	0.00	0	0.80	15	0.10	6	22
9:00PM	0.00	0	0.89	35	0.10	20	55	0.00	0	0.89	17	0.10	6	23
10:00PM	0.00	0	0.92	38	0.10	20	58	0.00	0	0.92	17	0.10	6	24
Dedicated spaces	0.00	0	0.50	45	0.00	0	45	0.00	0	0.00	0	0.00	0	0

Building	P3					P4				
	P3		P3		Total for P3	P4		P4		Total for P4
	Specialty Retail		Office			Residential		Specialty Retail		
Rate	200	1 / 200 sf	400	1/400 sf		1	1 per Unit	200	1 / 200 sf	
Monthly Adjustment										
SQF or Unit	11,500	11,500 sf	19,300	19,300 sf		275	275 Units	4,000	4,000 sf	
6:00AM	0.00	0	0.00	0	0	0.84	231	0.02	0	231
7:00AM	0.20	12	0.20	10	21	0.62	171	0.20	4	175
8:00AM	0.64	37	0.64	31	67	0.41	113	0.66	13	126
9:00AM	0.93	54	0.93	45	98	0.34	94	0.86	17	111
10:00AM	1.00	57	1.00	48	106	0.32	88	1.00	20	108
11:00AM	1.00	57	1.00	48	106	0.31	85	0.95	19	104
12:00PM	0.90	52	0.90	43	95	0.30	83	0.78	16	98
1:00PM	0.90	52	0.90	43	95	0.31	85	0.83	17	102
2:00PM	1.00	58	1.00	48	106	0.33	91	0.99	20	111
3:00PM	1.00	58	1.00	48	106	0.37	102	0.93	19	120
4:00PM	0.93	54	0.93	45	98	0.45	124	0.77	15	139
5:00PM	0.64	37	0.64	31	67	0.61	168	0.19	4	172
6:00PM	0.20	12	0.20	10	21	0.69	190	0.05	1	191
7:00PM	0.00	0	0.10	5	5	0.72	198	0.02	0	198
8:00PM	0.00	0	0.10	5	5	0.80	220	0.01	0	220
9:00PM	0.00	0	0.10	5	5	0.89	245	0.01	0	245
10:00PM	0.00	0	0.10	5	5	0.92	253	0.01	0	253
Dedicated spaces	0.00	0	0.00	0	0	0.00	0	0.00	0	0

Building	P5							P6				
	P5		P5		P5		Total for P5	P6		P6		Total for P6
	Residential		Hotel		Restaurant			Residential		Residential		
Rate	1	1 per Unit	4	1 per 4 guests	153.8462	6.5/1000 6:00AM-4:00PM		1	1 per Unit	1	1 per Unit	
Monthly Adjustment					100	10/1000 4:00PM-11:00PM						
SQF or Unit	108	108 Units	132	132 Rooms	3,800	3,800 sf		131	131 Units	14	14 Units	
6:00AM	0.84	0	1.00	33	0.00	0	33	0.84	0	0.84	0	0
7:00AM	0.62	0	1.00	33	0.10	2	35	0.62	0	0.62	0	0
8:00AM	0.41	0	1.00	33	0.10	2	35	0.41	0	0.41	0	0
9:00AM	0.34	0	0.75	25	0.20	5	30	0.34	0	0.34	0	0
10:00AM	0.32	0	0.50	17	0.30	7	24	0.32	0	0.32	0	0
11:00AM	0.31	0	0.40	13	0.90	22	35	0.31	0	0.31	0	0
12:00PM	0.30	0	0.35	12	1.00	25	36	0.30	0	0.30	0	0
1:00PM	0.31	0	0.35	12	0.90	22	34	0.31	0	0.31	0	0
2:00PM	0.33	0	0.35	12	0.65	16	28	0.33	0	0.33	0	0
3:00PM	0.37	0	0.40	13	0.35	9	22	0.37	0	0.37	0	0
4:00PM	0.45	0	0.50	17	0.35	13	30	0.45	0	0.45	0	0
5:00PM	0.61	0	0.60	20	0.60	23	43	0.61	0	0.61	0	0
6:00PM	0.69	0	0.70	23	0.90	34	57	0.69	0	0.69	0	0
7:00PM	0.72	0	0.80	26	1.00	38	64	0.72	0	0.72	0	0
8:00PM	0.80	0	0.90	30	1.00	38	68	0.80	0	0.80	0	0
9:00PM	0.89	0	0.95	31	1.00	38	69	0.89	0	0.89	0	0
10:00PM	0.92	0	1.00	33	0.75	29	62	0.92	0	0.92	0	0
Dedicated spaces	1.00	108	0.00	0	0.00	0	108	1.00	131	1.00	14	145

Building	Shared Spaces – P1-P6					P7			Combined Shared and Dedicated – P1-P7		For Bicycle Parking	
	P1-P6 Subtotal	Mixed Use Reduction (2)	Other Modes Reduction (Except Hotel) (3)	Hotel Other Modes Reduction (4)	P1-P6 Total	P7		Total for P7	Site Total	Recommended Spaces (4)	Non Residential Required Spaces	Non Residential Required Spaces (reduced)
						Marina (1)						
Rate						2	1 per 2 slips					
Monthly Adjustment		14%	35.8%	10%						85%		
SQF or Unit						220	220 slips					
6:00AM	311	44	100	3	164	0.10	11	11	473	504	44	27
7:00AM	341	48	110	3	180	0.20	22	22	500	536	170	96
8:00AM	514	72	172	3	267	0.20	22	22	587	638	415	219
9:00AM	651	91	224	2	334	0.20	22	22	654	717	573	299
10:00AM	679	95	237	2	345	0.20	22	22	666	731	607	316
11:00AM	687	96	241	1	349	0.20	22	22	669	735	618	322
12:00PM	625	88	220	1	316	0.20	22	22	636	696	559	292
1:00PM	626	88	220	1	317	0.20	22	22	637	697	557	291
2:00PM	686	96	241	1	348	0.20	22	22	668	734	611	318
3:00PM	690	97	242	1	350	0.20	22	22	670	736	603	314
4:00PM	681	95	238	2	346	0.20	22	22	667	732	571	298
5:00PM	581	81	201	2	297	0.20	22	22	618	674	414	219
6:00PM	387	54	130	2	201	0.20	22	22	521	560	189	106
7:00PM	328	46	108	3	171	0.10	11	11	481	513	107	60
8:00PM	361	51	119	3	188	0.05	6	6	492	526	104	55
9:00PM	398	56	131	3	208	0.05	6	6	512	550	106	56
10:00PM	401	56	132	3	210	0.05	6	6	514	552	98	52
Dedicated spaces						0.00	0	0	298	298	0	0

(1) The marina parking demand is based on information from ATM. They suggest the peak demand is 10% (possibly higher) of the total number of slips. We used peak demand of 20% to include 15% of slips (33 slips) and the marina employees. The peak slip usage includes on-site residents and transient boaters that would not require marina parking, as well as the off-site residents that would require parking. It is assumed that most of the off-site slip users arrive at the site during the peak hour, which is reflected in the shared use factors.

(2) Based on the results from the NCHRP 684 Internal Trip Capture Estimation Tool

(3) Based on Commute to Work data from the 2009-2013 ACS by Census Tract for the City of Portland provided by GPCOG

(4) The increase from required to recommended is only applied to the shared spaces, not the dedicated spaces

Portland State Univ. Study

Table 3-5. Percent Mode Shares by Area Type and Land Use

Area Type & Land Use	Automobile Mode Share	Walk Mode Share	Bicycle Mode Share	Transit Mode Share
Convenience	58%	27%	7%	6%
Central Business District	34%	49%	10%	10%
Urban Core	52%	31%	9%	6%
Regional Centers	60%	26%	7%	5%
Suburban Town Centers	70%	18%	3%	7%
Suburban Areas	72%	14%	8%	3%
High-turnover Restaurant	63%	22%	8%	6%
Central Business District	35%	42%	7%	16%
Urban Core	65%	20%	13%	2%
Regional Centers	70%	24%	6%	1%
Suburban Town Centers	85%	6%	1%	6%
Suburban Areas	86%	5%	0%	8%
Drinking Place	43%	27%	22%	7%
Central Business District	26%	40%	19%	15%
Urban Core	46%	20%	25%	8%
Regional Centers	52%	30%	18%	1%
Suburban Town Centers*	N/A	N/A	N/A	N/A
Suburban Areas*	N/A	N/A	N/A	N/A
Overall	58%	25%	9%	7%
Central Business District	34%	43%	9%	14%
Urban Core	57%	23%	15%	5%
Regional Centers	61%	26%	10%	3%
Suburban Town Centers	79%	11%	2%	7%
Suburban Areas	78%	10%	5%	5%

*Drinking places were not surveyed in suburban area types

Figure 3-2 shows the resulting automobile mode share for all establishments surveyed in a spatial context. As shown, automobile mode shares are generally lower in establishments closer to the city center. There is variation in automobile mode share in the inner east side of Portland where area type varies between Urban Center and Neighborhood/Regional Center. For a more detailed map of mode shares of survey establishments, see Appendix D.

NCHRP 758

Case study sites were identified using the guidelines presented in Chapter 4, and data were collected consistent with the procedures for deriving the adjustment factors using the minimum data collection variant. Data collected at the case study sites included:

- Vehicle counts at driveways of parking facilities exclusive to the site,
- Vehicle occupancy,
- Person trips entering and exiting the site's building,
- Observation of mode of access, and
- General observation of site conditions and surrounding context.

With empirical data available, the research team was able to compare predicted and surveyed results of the household travel survey method. A secondary objective of the data collection was to refine the data collection protocol for the proxy site method.

5.3.2 Summary of Findings

The following sections contain brief overviews of the results of applying the household travel survey method to the four land use categories used to develop the example adjustment factors from the HTS data presented in Chapter 4.

5.4 Derived Adjustment Factors

Table 5.1 presents the methodology-derived adjustment factors (mode share and vehicle occupancy) for the GU/UC context zones by land use category and proximity to transit. The research team reviewed these findings for reasonableness. The MWCOG has not published a report summarizing the findings of their HTS, so the research team could not compare its findings on mode share and vehicle occupancy with mode-share cross-references to land use, trip purpose, or context prepared by MWCOG.

Table 5.1. Mode share and vehicle occupancy adjustment factors for Washington, D.C.

Infill Adjustment Factors for GU/UC Contexts	Within Walking Distance Of:			
	High-Frequency Bus Stop		Rail Station	
	a.m.	p.m.	a.m.	p.m.
Residential Case Study Sites (ITE LUC 220)				
Transit	27.3%	24.0%	32.5%	27.7%
Walk/bicycle	11.3%	13.4%	12.9%	15.8%
Vehicle occupancy	1.27	1.32	1.30	1.34
General Office Case Study Sites (ITE LUC 710)				
Transit	33.4%	31.0%	38.8%	35.6%
Walk/bicycle	9.8%	10.4%	11.9%	12.5%
Vehicle occupancy	1.13	1.16	1.15	1.17
Retail/Shopping Center Case Study Sites (ITE LUC 820)				
Transit	15.4%	13.5%	19.7%	16.5%
Walk/bicycle	29.6%	19.0%	35.4%	22.8%
Vehicle occupancy	1.20	1.36	1.16	1.36
Restaurant Case Study Sites (ITE LUC 932)				
Transit	10.4%	13.8%	12.2%	16.1%
Walk/bicycle	29.9%	17.6%	38.8%	22.4%
Vehicle occupancy	1.36	1.71	1.35	1.69

Source:
Mode share and vehicle occupancy adjustment factors were extracted from linked trip data records developed from the 2004 MWCOG HTS.

5.4.1 Residential Land Use Category

The results in Table 5.2 show that the method results in substantially higher peak hour trip generation at the three residential infill case study sites when compared to the actual trips. The results range from a factor of two to as high as nearly three and a half times the actual trips. The research team expected that the method would overpredict or underpredict, but did not expect the large differences shown in Table 5.2.

The three residential test sites generate low volumes of traffic, so the percentage difference between the predicted and actual trips can be misleadingly large. For example, the Columbia Uptown residential test site was determined to generate 13 vehicle trips in the a.m. peak hour, while the method predicts the a.m. peak hour to be 25 trips. The absolute difference of 12 trips remains a small number, but the percentage difference of 92% appears large.

The research team considered that magnitude of the difference between predicted and actual vehicle trips might be an anomaly or magnification of error related to the small number of actual trips. But because all of the residential sites had low actual vehicle trips, the research team was unable to confirm a magnification of error.

When compared to trips estimated using ITE trip generation rates, the method predicts about one-third to one-half fewer trips at all three study sites, as the research team expected. The difference between the predicted and ITE trip

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Bay House Trip Generation and Parking Demands
In support of 58 Fore Street Project – Portland, Maine
JN 3138

Date: September 28, 2016
Subject: Bay House Trip Generation and Parking Demands
To: City: Jeremiah Bartlett, Christine Grimando, Tom Errico
Client: Jim Brady, Kevin Costello, Casey Prentice, David Senus, Mary McCrann
From: Randy Dunton, Gorrill Palmer (JN 3138)

Per the request of the City, Gorrill Palmer (GP) completed a trip generation and parking assessment at the Bay House parking structure to calculate trip generation rates and parking demand for residential units in the Portland area. The purpose of this task is to compare the results and methodology to that used for the 58 Fore Street project. The following is a summary of the background information, trip generation, and parking demand:

Bay House Information

Michelle Bellino, Property Manager for the Bay House, provided GP with information on the Bay House that was used for this study. The Bay House has 86 residential condominium units and 6 non-residential condominium units, and is at full occupancy. The parking structure below the condominiums is used by 75 of the residential units. The 11 one bedroom and studio condominiums use the Ocean Gateway Garage and visitors of the 6 non-residential units park on Hancock Street and Middle Street. This study has focused on the 75 residential units that use the Bay House parking garage. The Bay House parking garage has one vehicular access on Middle Street.

Trip Generation

Gorrill Palmer completed turning movement counts at the Bay House parking garage entrance on Middle Street on September 13, 2016 from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. The results of these counts are shown on the attached Figure 2. Figure 2 shows both the peak hour of the adjacent street and the peak hour of the Bay House parking garage.

Counted Trip Generation for Bay House

The trip generation of the site is the number of trip ends in and out of the parking garage during the AM and PM peak hours. Since the non-residential units and the 11 one bedroom and studio condominiums do not use the Bay House parking garage, the calculations for trip generation rate are based on the 75 units that use the Bay House parking garage. As shown on Figure 2, the peak hours of the adjacent street are 7:30 AM to 8:30 AM and 4:15 PM to 5:15 PM. The peak hours

of Bay House traffic are 7:00 AM to 8:00 AM and 4:30 PM to 5:30 PM. The trip generation rate for each peak hour was calculated by dividing the number of trip ends in and out during the peak hour by the 75 units that use the parking garage. The following table summarizes the Bay House trip generation during the peak hours and the calculated trip generation rate. The detailed calculations are attached.

Bay House Trip Generation Summary

Peak Hour	Counted Trip Generation (trip ends)	Trip Generation Rate (trip ends per unit)
AM Peak Hour Adj. Street	13 (1 in / 12 out)	0.173 (8% in / 92% out)
PM Peak Hour Adj. Street	10 (7 in / 3 out)	0.133 (70% in / 30% out)
AM Peak Hour Bay House	16 (3 in / 13 out)	0.213 (19% in / 81% out)
PM Peak Hour Bay House	11 (7 in / 4 out)	0.147 (64% in / 36% out)

Calculated Trip Generation for Bay House

The Institute of Transportation Engineers (ITE) publication, *Trip Generation*, 7th Edition was used to forecast the trip generation if a new similar facility were proposed. Although the 9th Edition is available, the MaineDOT only accepts the 7th Edition for Traffic Movement Permit Applications. This is consistent with the methodology used for 58 Fore Street.

Trip Generation Reductions

In a downtown area, two reductions are often applied to trip generation; a "shared use" reduction and an "other modes of transportation" reduction. For comparison purposes, the same reductions used for the 58 Fore Street development were applied to the Bay House ITE trip generation. The "shared use" reduction for 58 Fore Street was calculated using the NCHRP 684 Internal Trip Capture Estimation Tool and the "other modes of transportation" reduction was calculated using US Census data, provided by the Greater Portland Council of Governments. A detailed summary of the calculations and sources for these reductions can be found in the "Site Parking Demands" memo dated September 16, 2016 which was previously submitted to the City. The calculated "shared use" reduction for 58 Fore Street is 13% during the AM peak hour and 16% during the PM peak hour. The calculated "other modes of transportation" reduction for 58 Fore Street is 35.8% for the residential units. The following table summarizes the Bay House ITE trip generation, the trip generation reductions, and the reduced trip generation for each peak hour.

Calculated Trip Generation Summary – Bay House

Peak Hour	ITE Trip Generation Rate (trips per unit)	ITE Trip Generation	Shared Use Reduction (13% AM, 16% PM)	Other Modes Reduction (35.8%)	Calculated Trip Generation
AM Peak Hour Adj. Street	0.44 (15% in / 85% out)	33 (5 in / 28 out)	4 (1 in / 3 out)	12 (2 in / 10 out)	17 (2 in / 15 out)
PM Peak Hour Adj. Street	0.52 (65% in / 35% out)	39 (25 in / 14 out)	6 (4 in / 2 out)	14 (9 in / 5 out)	19 (12 in / 7 out)
AM Peak Hour Bay House	0.44 (20% in / 80% out)	33 (7 in / 26 out)	4 (1 in / 3 out)	12 (3 in / 9 out)	17 (3 in / 14 out)
PM Peak Hour Bay House	0.52 (65% in / 35% out)	39 (25 in / 14 out)	6 (4 in / 2 out)	14 (9 in / 5 out)	19 (12 in / 7 out)

It should be noted that the Bay House would be expected to have a lower "shared use" reduction than 58 Fore Street since 58 Fore Street is proposed to have more complementary uses on site than the area around Bay House. A lower "shared use" reduction would result in a higher Calculated Trip Generation than shown in the table. The Bay House would be expected to have a similar "other modes of transportation" reduction since it is located in a Census Tract that was used to calculate the 58 Fore Street reduction.

Trip Generation Comparison – Counted vs. Calculated

The following table summarizes the comparison of the Bay House counted trip generation and the calculated trip generation:

Trip Generation Comparison – Counted vs. Calculated

Peak Hour	Counted Trip Generation	Calculated Trip Generation	Difference
AM Peak Hour Adj. Street	13	17	-4
PM Peak Hour Adj. Street	10	19	-9
AM Peak Hour Bay House	16	17	-1
PM Peak Hour Bay House	11	19	-8

As shown in the table, the calculated trip generation is higher than the counted trip generation during all peak hours. As noted previously, the "shared use" reduction for Bay House is expected to be lower than that for 58 Fore Street, which would result in an even higher calculated trip generation. However, even with the conservative higher "shared use" reduction, the calculated trip generation is still greater than the counted trip generation. This comparison indicates that the 58 Fore Street calculated trip generation for the residential units after reductions have been applied are anticipated to be higher than what may actually be on the adjacent roadway network.

Parking Demand

Bay House

Bay House parking counts were completed on September 13, 2016 at 9:00 AM, directly following the morning turning movement count, and at 4:00 PM, directly before the afternoon turning movement count. These counts inventoried the number of vehicles parked in the garage. At 9:00 AM there were 43 vehicles parked in the parking garage and at 4:00 PM there were 40 vehicles parked in the parking garage. Using the turning movement counts discussed in the previous section, GP calculated that there were 61 vehicles parked in the parking garage at 7:00 AM and 47 vehicles parked in the parking garage at 6:00 PM. The peak parking demand for residential units would be expected to occur between 6:00 AM and 7:00 AM, before residents of the condominiums leave for the day.

58 Fore Street

The parking demand for the 58 Fore Street site was determined by calculating the parking demand for the individual uses, applying a factor to distribute the demand throughout the day, and then adding the demand for each time period, for each use, to determine the overall peak parking demand. The parking rate used for residential units in 58 Fore Street was 1 space per unit. The parking demand factors represent how much of the total demand will be used at a specific time.

Bay House vs. 58 Fore Street

The 58 Fore Street parking demand factor for 6:00 AM to 7:00 AM is 0.84. Using the parking rate of 1 space per unit and parking demand factor of 0.84, the theoretical demand for the 75 Bay House units that use the parking garage would be 63 vehicles from 6:00 AM to 7:00 AM. There were 61 vehicles parked in the Bay House garage just before 7:00 AM. Based on this, using the base rate and AM parking demand factor yields a parking demand consistent with the actual conditions. The parking demand factor at 6:00 PM is 0.69, which would yield a parking demand of 52 vehicles for the 75 Bay House units. This is higher than the actual demand of 47 vehicles at 6:00 PM, which suggests that the parking demand factor of 0.69 may be conservative at 6:00 PM.

Conclusions

The following is a summary of the conclusions:

1. The calculated trip generation for the Bay House is higher than the actual counted trip generation. This includes a reduction in the calculated trip generation for "shared use" and "other modes of transportation" consistent with the methodologies used in the 58 Fore Street project. This indicates that the trip generation for the residential units of the 58 Fore Street project may be somewhat higher than will actually occur.

2. The calculated AM peak hour parking demand for the Bay House is consistent with the actual counted parking demand. The calculated PM peak hour parking demand for the Bay House was slightly higher than the actual counted parking demand. This indicates that the parking demand calculated for the residential portion of the 58 Fore Street project should be consistent with the actual parking demand during peak AM time periods and slightly conservative for the peak PM time periods.

Location Map

Figure No. 1

BAY HOUSE STUDY
PORTLAND, MAINE

Design:	EAT	Scale:	NONE
Draft:	LAN	Date:	SEPT 2016
Checked:	RED	File Name:	3138-TRAFF2.dwg

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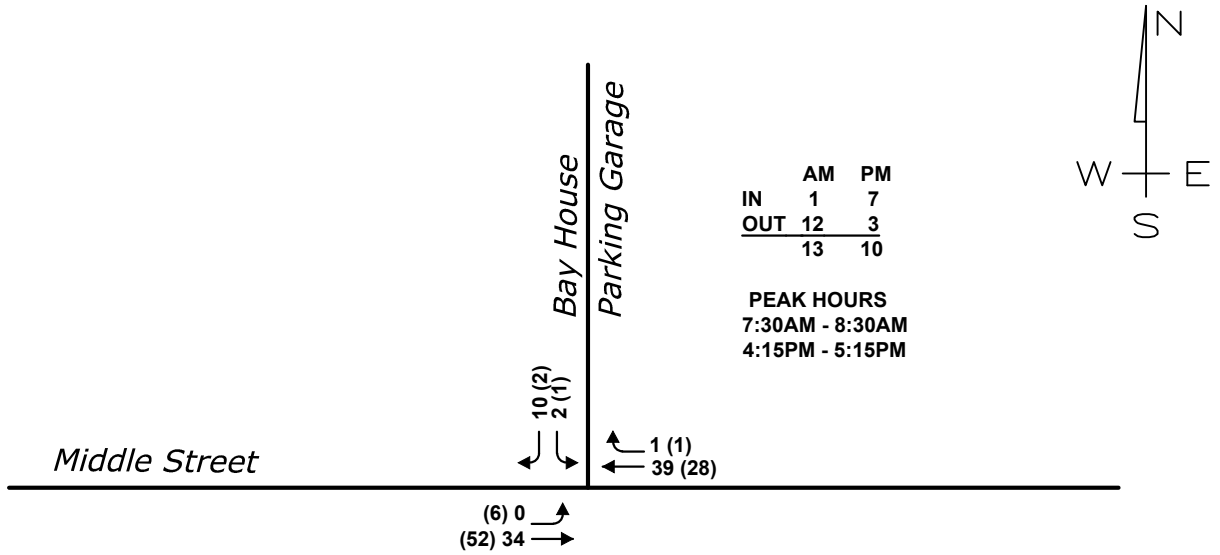
Raw Volumes

Figure No. 2

Peak Hour of the Adjacent Street

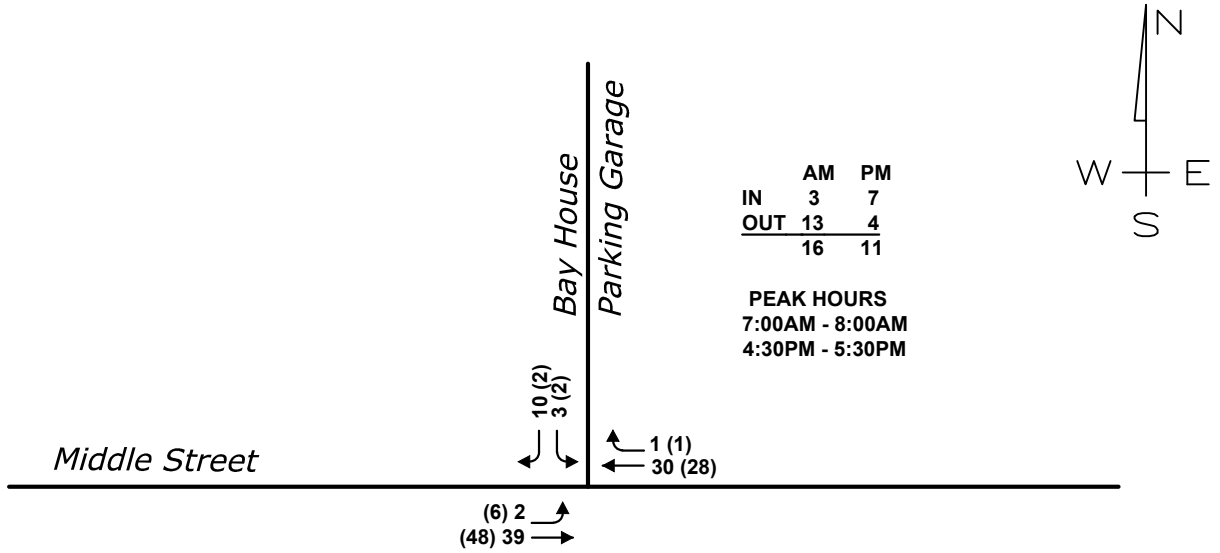


	AM	PM
IN	1	7
OUT	12	3
	13	10

PEAK HOURS
7:30AM - 8:30AM
4:15PM - 5:15PM

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

Peak Hour of Bay House



	AM	PM
IN	3	7
OUT	13	4
	16	11

PEAK HOURS
7:00AM - 8:00AM
4:30PM - 5:30PM

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

BAY HOUSE STUDY
PORTLAND, MAINE

Design:	EAT	Scale:	NONE
Draft:	LAN	Date:	SEPT 2016
Checked:	RED	File Name:	3138-TRAFF2.dwg

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JOB 3138: 58 Fore Street
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 9/15/16
CHECKED BY _____ DATE _____
SCALE _____

BayHouse Trip Generation

86 units → 11 one bedroom/studios - Park in Ocean Gateway
→ 75 two bedroom or larger - Park on site

AM Peak Hour: 7:30-8:30AM
Adj Street

1 in / 12 out → 13 trip ends 8% entering, 92% exiting

$\frac{13}{75} = 0.173$ trips/unit

PM Peak Hour: 4:15 - 5:15PM
Adj. Street

7 in / 3 out → 10 trip ends 70% entering, 30% exiting

$\frac{10}{75} = 0.133$ trips/unit

AM Peak Hour of Generator: 7:00AM-8:00AM

3 in / 13 out → 16 trip ends 19% entering, 81% exiting

$\frac{16}{75} = 0.213$ trips/unit

PM Peak Hour of Generator: 4:30PM-5:30PM

7 in / 4 out → 11 trip ends 64% entering, 36% exiting

$\frac{11}{75} = 0.147$ trips/unit

JN:	3158	Gorrill Palmer
Project Description:	58 Fore Street - Bay House	707 Sable Oaks Drive
Project Location:	Portland, Maine	Suite 30
Date:	September 16, 2016	South Portland, Maine 04106

Residential Condominium/Townhouse
Land Use Code (LUC) 230

Dwelling Units: 75

Average Rate

Time Period	ITE Trip Rate	Sample Size	Trip Ends	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	**T = 5.86 (X)**	**54**	**440**	**50%**	**50%**	**220**	**220**	**N/A**
Peak Hour of Adjacent Street Traffic 7-9 AM	**T = 0.44 (X)**	**59**	**33**	**15%**	**85%**	**5**	**28**	**N/A**
Peak Hour of Adjacent Street Traffic 4-6 PM	**T = 0.52 (X)**	**62**	**39**	**65%**	**35%**	**25**	**14**	**N/A**
AM Peak Hour of Generator	T = 0.44 (X)	52	33	20%	80%	7	26	N/A
PM Peak Hour of Generator	T = 0.52 (X)	50	39	65%	35%	25	14	N/A
Saturday	T = 5.67 (X)	30	425	50%	50%	213	212	N/A
Saturday Peak Hour of Gen.	T = 0.47 (X)	27	35	55%	45%	19	16	N/A

* Percentages rounded to nearest 5%

Fitted Curve Equation

Time Period	ITE Trip Rate	Sample Size	Trip Ends	Directional Split * IN	Directional Split * OUT	Directional Distribution IN	Directional Distribution OUT	R^2
Weekday	Ln(T) = 0.85 Ln(X) + 2.55	54	503	50%	50%	252	251	0.83
Peak Hour of Adjacent Street Traffic 7-9 AM	Ln(T) = 0.80 Ln(X) + 0.26	59	41	15%	85%	6	35	0.76
Peak Hour of Adjacent Street Traffic 4-6 PM	Ln(T) = 0.82 Ln(X) + 0.32	62	47	65%	35%	31	16	0.80
AM Peak Hour of Generator	Ln(T) = 0.82 Ln(X) + 0.17	52	41	20%	80%	8	33	0.80
PM Peak Hour of Generator	T = 0.34 (X) + 38.31	50	64	65%	35%	42	22	0.83
Saturday	T = 3.62 (X) + 427.93	30	699	50%	50%	350	349	0.84
Saturday Peak Hour of Gen.	T = 0.29 (X) + 42.63	27	64	55%	45%	35	29	0.84

* Percentages rounded to nearest 5%

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JOB 3138 · 58 Fore Street
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 09/16/16
CHECKED BY _____ DATE _____
SCALE _____

Bay House Parking

Parked vehicles after AM count (9 AM) = 43 vehicles

Total in during AM count: 3 vehicles
Total out during AM count: 21 vehicles

Parked vehicles before AM count (7 AM) = 43 - 3 + 21 = 61 vehicles

6:00AM - 7:00AM Parking demand factor = 0.84

Parked vehicles before PM count (4PM): 40 vehicles

Total in during PM count: 13 vehicles
Total out during PM count: 6 vehicles

Parked vehicles after PM count (6PM) = 40 - 6 + 13 = 47 vehicles

6:00PM - 7:00PM Parking demand factor = 0.69

Accommodations for 100 vehicles in the garage
4 handicap spaces, 56 standard spaces, 20 spaces for 2 vehicles
77 spaces are deeded to specific units

Att. D

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Results.

REVISED
Traffic Impact Study
58 Fore Street
Redevelopment
Portland, Maine

PREPARED FOR:

CPB2
PO Box 7987
Portland, ME 04112

October 2016

SUBMITTED BY:

Gorrill Palmer
707 Sable Oaks Drive
Suite 30
So. Portland, ME 04106
207.772.2515

REVISED - Traffic Impact Study
58 Fore Street Development
Portland, Maine
October 2016

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B ITE Trip Generation Calculations
NCHRP Spreadsheets
Commute Data Maps
Site Parking Demand Memo
Marina Trip Generation Calculations

C Capacity Analysis Results

D Node Map
Crash Report
Collision Diagrams

I. Introduction

This study examines the impact of the redevelopment of the historic Portland Company at 58 Fore Street on Portland's Eastern Waterfront. The development is proposed to be a total of 958,679 sf of building area and is separated into seven Development Blocks (B1-B7) with varying uses. The following table summarizes the proposed site uses by Development Block:

Proposed Site Use Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function Space	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

The new marina facilities on B7 are proposed to be three times the size of the existing marina. It will be a new, modern facility with 220 slips proposed; 140 for seasonal boaters and 80 for transient vessels. The facility will service residents of Portland (including Islanders commuting to work on the Portland Peninsula), residents of the 58 Fore Street site, and transient boaters.

There are three proposed accesses to the site; Thames Street Extension into the site, a full movement driveway onto Fore Street across from Waterville Street primarily for residential units, and a new public road connecting Fore Street to Thames Street Extension. The attached Figure 1 (Appendix A) shows the location of the site.

II. Existing Traffic Volumes

Morning and afternoon turning movement counts were completed from 7:30 AM to 9:30 AM and from 4:00 PM to 6:00 PM at the following locations and dates:

- Franklin Street / Middle Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Franklin Street / Fore Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Franklin Street / Commercial Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Cumberland Avenue / Washington Street – August 16, 2016 (AM and PM)
- Congress Street / Mountfort Street / Washington Street – August 16, 2016 (AM and PM)
- Congress Street / India Street – August 16, 2016 (AM and PM)
- Fore Street / Mountfort Street – August 11, 2016 (AM and PM)
- Fore Street / Existing Site Driveways – August 11, 2016 (AM and PM)
- Fore Street / Waterville Street – August 11, 2016 (AM and PM)

The dates, times, and locations of the counts were approved by the City prior to the counts.

Additionally, as part of a different study, GP had completed morning and afternoon turning movement counts at the following locations:

- India Street / Fore Street
- India Street / Commercial Street
- Fore Street / Hancock Street

These counts were collected on October 7, 2015 from 7:00 AM to 8:30 AM and from 4:00 PM to 6:00 PM. The date, times, and locations of the counts were approved by the City prior to the counts.

The AM and PM peak hour volumes of the counts at all 12 locations are shown on the attached Figure 2 (Appendix A).

III. Other Development in the Vicinity of the Site

Approved projects that are not yet opened as well as projects for which applications have been filed are required to be included in the predevelopment volumes for this project. Based on conversations with City Staff the following projects have been included in the background traffic for this project:

- A – 158 Fore Street: 180 room hotel
- B – 1 India Street: office and bank
- C – 185 Fore Street: 4,085 sf of office or retail and 8 residential units
- D – 16 Middle Street: 5,305 sf of retail and 39,526 sf of office
- E – 113 Newbury Street: 39 condominium units (Seaport Lofts)
- F – 48 Hancock Street: 2 residential units
- G – 49 Hancock Street: 2 residential units
- H – 62 India Street: 5,409 sf of retail and 29 condominium units
- I – 169 Newbury Street: 24 condominium units
- J – 273 Congress Street: 2,290 sf of retail and 10 residential units
- K – 31 Fore Street: 4 condominium units

The locations, sizes, and uses of these developments are shown on the attached Other Development Figure in Appendix A. The forecast traffic from these projects within the study area is shown on the attached Figure 4 in Appendix A.

IV. Predevelopment Traffic Volumes

Traffic volumes are typically seasonally adjusted to approximate the 30th highest hour of the year using the weekly group mean factors published by MaineDOT. This seasonal adjustment increases the volumes to those that may be experienced during peak summer months. Since August is a peak summer month, no seasonal adjustment needs to be applied to the counts collected in August 2016. However, October is not a peak summer month, so the three locations counted for another study in October 2015 needed to be adjusted. This seasonal adjustment resulted in an increase of 3.4%.

In addition to seasonally adjusting the traffic volumes, they are also increased by a yearly growth to approximate the build out year of the project. The proposed project is anticipated to be completed and occupied in 2027. MaineDOT traffic counts in the area show a decrease in traffic volumes in the past six years. To be conservative, an annual growth of 0.5% per year was utilized. This is the same growth used for the recently completed Franklin Street Study. The seasonally and annually adjusted volumes are shown on the attached Figure 3 in Appendix A.

The annually and seasonally adjusted traffic volumes have been combined with the approved other development ahead of this project in the approval process to yield the 2027 Predevelopment Design Hour Volumes (DHV) shown on the attached Figure 5 in Appendix A.

V. Trip Generation

The trip generation for the site was calculated separately for Development Blocks 1-6 (B1-B6) and for Development Block 7 (B7), then combined to yield the total site trip generation. This is due to the unique nature of the marina on B7. The following is a summary of the methods, assumptions, and results of the trip generation calculations for the site.

Development Blocks 1-6

The Institute of Transportation Engineers' publication, *Trip Generation*, Seventh Edition, was used to forecast the traffic to be generated by B1-B6. The Ninth Edition is available, but has not yet been accepted by the MaineDOT. Since this project will generate greater than 200 trip ends in a peak hour, a MaineDOT Traffic Movement Permit (TMP) will be required. The permit process can be administered by the City since they have delegated review authority.

The following table summarizes the trip generation for B1-B6.

Development Blocks 1-6 ITE Trip Generation Summary

Development Block	Land Use Code	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
B1								
	814 – Specialty Retail	7,878 sf	4	2	6	9	12	21
	220 – Apartment	91 Units	9	37	46	36	20	56
	710 – General Office	79,000 sf	140	15	155	22	127	149
B2								
	814 – Specialty Retail	26,895 sf	12	8	20	33	40	73
	220 – Apartment	19 Units	2	8	10	8	4	12
	710 – General Office	25,617 sf	57	6	63	9	52	61
B3								
	814 – Specialty Retail	11,500 sf	5	4	9	14	17	31
	710 – General Office	19,300 sf	45	5	50	7	41	48
B4								
	220 – Apartment	275 Units	28	112	140	111	60	171
	814 – Specialty Retail	4,000 sf	2	1	3	5	6	11

Development Block	Land Use Code	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
B5								
	220 – Apartment	108 Units	7	41	48	36	20	56
	310 – Hotel	132 Rooms	44	30	74	43	35	78
	932 – High Turnover Sit-Down Restaurant	3,800 sf	22	22	44	25	16	41
	Function Space*	5,800 sf	0	0	0	0	0	0
B6								
	230 – Residential Condominium / Townhouse	131 Units	9	49	58	44	24	68
	220 – Apartment	14 Units	1	6	7	6	3	9
Development Blocks 1-6			**387**	**346**	**733**	**408**	**477**	**885**

*It was assumed that the function space would be ancillary to the other uses in the Development Block and would not generate additional traffic.

Due to the variety of uses and the site's location within a downtown area, two reductions can be applied to refine the trip generation for B1-B6. These reductions are summarized as follows:

Shared Use Adjustment

Due to the close proximity of the mixed uses and the sharing of people between uses, simply adding the trip generation of each use as if they were isolated would result in an overestimate of trip generation. To estimate the traffic that will visit more than one destination without leaving the site, GP utilized the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool. The NCHRP 684 spreadsheet uses the ITE forecast trip generation for each type of land use (office, retail, restaurant, residential, hotel, and other) and estimates the trips that will travel between two uses without leaving the site (spreadsheets provided in Appendix B). This yields an internal trip capture percentage, which is the percentage of trip ends that will travel between two uses. The following tables summarize the AM and PM peak hour internal trip capture percentages respectively:

AM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends*		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total
Office	242	26	10%	46%	23	12	35
Retail	23	15	57%	47%	13	7	20
Restaurant	22	22	55%	50%	12	11	23
Residential	56	253	4%	5%	2	12	14
Hotel	44	30	2%	30%	1	9	10
Total	**387**	**346**	**12%**	**14%**	**51**	**51**	**102**

*These values are taken directly from the NCHRP spreadsheets (Appendix B), which may not match exact calculations due to rounding in the spreadsheet.

PM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends*		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total
Office	38	220	18%	5%	7	10	17
Retail	61	75	31%	44%	19	33	52
Restaurant	25	16	52%	69%	13	11	24
Residential	241	131	11%	15%	27	19	46
Hotel	43	35	21%	6%	9	2	11
Total	**408**	**477**	**18%**	**15%**	**75**	**75**	**150**

*These values are taken directly from the NCHRP spreadsheets (Appendix B), which may not match exact calculations due to rounding in the spreadsheet.

Other Modes of Transportation Reduction

It can be expected for a site in a downtown area that other modes of transportation will be used to go to and from the site. These other modes could include things such as transit, bicycle, or walking. This site is adjacent to an existing bus route, as well as located on a pedestrian and bicycle path, so full use of other modes of transportation are readily available. The other modes reduction for B1-B6 is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract for the City of Portland. Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, used this data to create maps (Appendix B) that show the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to travel to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the

individual tracts. The reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number of working people in the same three Census Tracts. This calculation yields a reduction of 35.8%, which appears reasonable for this area. The detailed calculation is described in the "Site Parking Demand" memo included in Appendix B.

The Census data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site, but not necessarily the proposed restaurant and hotel. The restaurants and hotel were further researched to find studies that included information on other modes of transportation for restaurants and hotels. The studies found indicated that 40%-65% of restaurant customers may be using alternative modes of transportation. Since the studies were not specific to Portland, Maine, the local data is expected to be closer to actual conditions that would be seen at the 58 Fore Street development, so the 35.8% reduction was applied to the restaurants. There was limited data available for hotels, so a conservative reduction of 10% was used for the hotel. The studies are discussed in more detail in the "Site Parking Demand" memo in Appendix C. The following table summarizes the other modes of transportation reduction for the site trip generation:

Other Modes of Transportation Reduction Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 Trip Generation	387	346	733	408	477	885
Hotel Trip Generation	44	30	74	43	35	78
B1-B6 Trip Generation w/o Hotel	343	316	659	365	442	807
Other Modes Reduction (35.8% of B1-B6 Trip Generation w/o Hotel)	123	113	236	131	158	289
Hotel Other Modes Reduction (10% of Hotel Trip Generation)	4	3	7	4	4	8
Total Other Modes Reduction	**127**	**116**	**243**	**135**	**162**	**297**

Development Block 7 (Marina)

Although the ITE does have a Marina category, the number of studies (2) is limited. Therefore, the trip generation for B7 was not determined using the ITE trip generation rates. Since a marina is such a unique facility, the trip generation was forecast based on the characteristics of this specific 220 slip marina. Applied Technology & Management (ATM), experts in marine and coastal engineering, provided the following information and assumptions:

- Peak weekday usage of the marina is forecast to be approximately 10% of the slips, but possibly greater since Maine's peak boating season is shorter than other less seasonal areas
- Approximately 36% of daily users are forecast to be transient boaters (80 transient boater slips out of 220 total slips)
- 10% of daily users who are not transient boaters are on-site residents
- 90% of daily users who are not transient boaters are off-site Portland residents
- 30% of off-site Portland residents are Islanders commuting to and from the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Based on the information from ATM, the following assumptions were made:

- Peak weekday usage will be 15% of the slips (33 slips). This is higher than the 10% identified by ATM and increased to 15% to account for the short season
- Transient boaters will not have a car on site since they arrive and depart using their boat, so they will not generate trip ends
- On-site residents will not enter or exit the site to visit the marina, so they will not generate any trip ends
- Each slip used by an off-site Portland resident who is not an islander will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each slip used by an Islander commuting to work will generate one trip end out during the AM peak hour and one trip end in during the PM peak hour
- Each employee will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each mega-yacht slip would be visited by a provisioning vehicle during both peak hours and the provisioning vehicles would enter and exit the site during the peak hour

Based on these assumptions, the forecast weekday peak hour trip generation for the marina is as follows:

- AM Peak Hour: 36 trip ends (26 in / 10 out)
- PM Peak Hour: 36 trip ends (10 in / 26 out)

The detailed trip generation calculations are attached in Appendix B.

Two reductions (shared use and other modes) were applied to the trip generation for B1-B6; however those reductions were not applied to the marina trip generation, as described in more detail as follows:

Shared Use

Although it is possible for marina visitors to eat at the restaurants or visit the shops on site, to be conservative it was assumed that the marina would be a primary destination and would have very few shared trips with the other uses.

Other Modes

Additionally, there is a possibility that marina users would use alternative modes of transportation to get to or from the site, but to be conservative we assumed that visitors would use cars and not another mode of transportation.

Total Site Trip Generation

The following table summarizes the adjusted site trip generation starting with the ITE trip generation and subtracting the shared use reduction as well as the other modes of transportation reduction and lastly adding the marina trip generation:

Adjusted Trip Generation Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 ITE Subtotal	387	346	733	408	477	885
Shared Use Adjustment	-51	-51	-102	-75	-75	-150
Other Modes Adjustment	-127	-116	-243	-135	-162	-297
B1-B6 Total	**209**	**179**	**388**	**198**	**240**	**438**
B7 Trip Generation	26	10	36	10	26	36
Site Total	**235**	**189**	**424**	**208**	**266**	**474**

As shown in the table, the proposed development is forecast to generate 424 trip ends during the AM weekday peak hour and 474 trip ends during the PM weekday

peak hour. To be conservative, this trip generation does not include any credit for existing on-site uses. This level of trip generation does require a MaineDOT Traffic Movement Permit because it is over 99 trip ends during the peak hour. The Traffic Movement Permit Application can be reviewed and issued by the City since they have delegated review authority.

VI. Trip Composition and Assignment

GP has assumed that all trips are primary in nature and made for the sole purpose of going to and from the site. This is a conservative approach since some of the restaurant or retail trip ends would be expected to be pass by trips.

The trip assignment was based on conversations with Mr. Kevin Hooper and use of the PACTS Model for this area. Mr. Hooper provided the following general distribution:

Trip Distribution

2010 PACTS Model Vehicle Trip Distribution	AM Peak Inbound	AM Peak Outbound	PM Peak Inbound	PM Peak Outbound
I-295 North	38%	30%	30%	33%
Preble Street Extension	15%	14%	13%	17%
Forest	2%	10%	7%	4%
Congress	8%	5%	8%	7%
I-295 South	19%	9%	17%	8%
Veterans Memorial Bridge	4%	15%	11%	16%
Casco Bay Bridge	14%	17%	14%	15%
Total	**100%**	**100%**	**100%**	**100%**

The trips were distributed based on this information and are shown graphically on Figure 6 in Appendix A. The study area was determined based on conversations with the City.

VII. Postdevelopment Traffic Volumes

The predevelopment traffic volumes shown on Figure 5 have been combined with the total forecast traffic for the development shown on Figure 6 to yield the 2027 Postdevelopment DHV shown on the attached Figure 7 (Appendix A).

VIII. Capacity Analysis

GP completed capacity analyses for the study area intersections using the Synchro/SimTraffic computer analysis software. Level of service rankings are similar to the academic ranking system where an 'A' is very good with little control delay and an 'F' represents very poor conditions. At an intersection if the level of service falls below a 'D', an evaluation should be made to determine if mitigation is warranted.

The following tables summarize the relationship between the control delay and level of service:

Level of Service for Unsignalized Intersections and Roundabouts

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The capacity analyses were completed for two scenarios; first with the existing roadway geometry and the second with the approved proposed Franklin Street improvements. The City and MaineDOT approved the proposed Franklin Street design based on a study done by Gorrill Palmer. The City is responsible for implementing the proposed design and sections of Franklin Street are currently in the process of final design. The approved Franklin Street improvements in the 58 Fore Street study area include new intersection geometry and updated signal timing at the intersections of Franklin Street with Fore Street and Franklin Street with Middle Street, and the construction of a single lane roundabout at the intersection of Franklin Street with Commercial Street. The Synchro/SimTraffic software was also used to analyze the proposed roundabout. The following table is a summary of the capacity analysis results. The detailed analyses are attached in Appendix C.

Level of Service Summary

Approach	Existing Geometry				Proposed Franklin Street			
	2027 AM		2027 PM		2027 AM		2027 PM	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Franklin / Middle (S)								
Franklin SE	B	B	C	F	B	B	B	F
Franklin NW	B	B	B	C	A	A	B	B
Middle NE	B	B	C	C	C	C	B	C
Middle SW	B	B	B	B	B	C	B	B
Overall	**B**	**B**	**C**	**E**	**B**	**B**	**B**	**D**
Franklin / Fore (S)								
Franklin SE	B	B	C	B	B	B	B	F
Franklin NW	B	B	B	D	B	C	B	C
Fore NE	B	B	B	C	B	B	C	C
Fore SW	B	B	C	C	B	B	B	C
Overall	**B**	**B**	**B**	**C**	**B**	**B**	**B**	**D**
Franklin / Commercial (S) – Existing, (R) – Proposed								
Franklin EB	B	B	B	B	A	A	A	A
Maine State Pier WB	C	D	D	D	A	A	A	A
Commercial NB	B	B	B	B	A	A	A	A
Commercial SB	C	C	C	C	A	A	A	A
Overall	**B**	**C**	**C**	**C**	**A**	**A**	**A**	**A**
Commercial / Thames / India (U)								
Commercial EB	A	A	A	A	A	A	A	A
Thames WB	A	A	A	A	A	A	A	A
India SE	A	A	A	A	A	A	A	A
India / Fore (U)								
Fore EB	A	A	A	B	A	B	B	C
Fore WB	A	A	A	B	A	B	A	B
India SE	A	A	A	A	A	B	A	B
India NW	A	A	A	B	A	A	A	B
Hancock / Fore (U)								
Fore NB	A	A	A	A	A	A	A	A
Fore SB	A	A	A	A	A	A	A	A
Hancock SE	A	A	A	A	A	A	A	A
Hancock NW	A	A	A	A	A	A	A	A
Mountfort / Fore (U)								
Fore NE	A	A	A	A	A	A	A	A
Fore SW	A	A	A	A	A	A	A	A
Mountfort SE	A	A	A	A	A	A	A	A
Existing Driveways / Fore (U)								
Fore EB	A	N/A	A	N/A	A	N/A	A	N/A
Fore WB	A	N/A	A	N/A	A	N/A	A	N/A
100 Fore St NB	A	N/A	A	N/A	A	N/A	A	N/A
58 Fore St NW	A	N/A	A	N/A	A	N/A	A	N/A

Approach	Existing Geometry				Proposed Franklin Street			
	2027 AM		2027 PM		2027 AM		2027 PM	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Proposed New Road / Fore (U)								
Fore EB	N/A	A	N/A	A	N/A	A	N/A	A
Fore WB	N/A	A	N/A	A	N/A	A	N/A	A
Proposed Road NB	N/A	A	N/A	A	N/A	A	N/A	A
Proposed New Road / Thames (U)								
Thames NE	N/A	A	N/A	A	N/A	A	N/A	A
Thames SW	N/A	A	N/A	A	N/A	A	N/A	A
Proposed Road SB	N/A	A	N/A	A	N/A	A	N/A	A
Waterville / Fore (U)								
Fore NE	A	A	A	A	A	A	A	A
Fore SW	A	A	A	A	A	A	A	A
Waterville SE	A	A	A	A	A	A	A	A
Site Driveway NW	N/A	A	N/A	A	N/A	A	N/A	A
Congress / India (S)								
Congress NE	B	B	C	C	B	B	C	C
Congress SW	A	A	B	B	A	A	B	B
India NW	B	B	D	C	B	B	D	C
Overall	**B**	**B**	**C**	**C**	**A**	**B**	**C**	**C**
Washington / Congress / Mountfort (S)								
Congress NE	A	A	C	B	A	A	B	B
Congress SW	B	B	C	B	B	B	C	B
Mountfort NB	B	B	C	B	C	B	C	C
Washington SB	A	A	B	B	A	A	B	B
Overall	**B**	**B**	**C**	**B**	**A**	**B**	**B**	**B**
Cumberland / Washington (S)								
Cumberland NE	B	B	B	B	B	B	B	B
Cumberland SW	B	B	B	B	B	B	B	B
Washington NB	B	B	B	B	B	B	B	B
Washington SB	A	B	D	B	B	B	D	C
Overall	**A**	**B**	**C**	**B**	**B**	**B**	**C**	**B**

*(S) = Signalized, (U) = Unsignalized, (R) = Roundabout

As shown in the table, the study area intersections are forecast to operate at or above an overall level of service 'D' after the development is completed, with the exception of the Franklin / Middle Street intersection in the 2027 PM Peak hour with the existing geometry. If the improvements that are scheduled for the Franklin Street corridor come to fruition, this level of service improves to a level of service D. It should be noted that the Franklin Street inbound is forecast to operate at a low level of service in the PM peak hour. This is not unexpected since the timing of the signals are focused on the Franklin Street outbound movements in the PM peak hour. The levels of service may be improved with adjustments to the intersection timing; however since

the intersection is part of the proposed Franklin Street corridor improvements, changes to the timing were not made for this analysis. Any adjustments to intersection timing would need to consider the platooning of Franklin Street traffic. It should also be noted that all other intersections within the study area are forecast to operate at high levels of service.

The existing timing and phasing of the two intersections of India Street with Congress Street and Congress Street with Mountfort Street / Washington Avenue include an exclusive pedestrian phase. This phase was not included in the analysis, but if actuated, will cause the intersections to operate at a lower level of service. This is common in a downtown area where signals include an exclusive pedestrian phase.

It should be noted that observations of the Franklin Street intersections identified that during the PM peak hour queueing on northbound Franklin Street was significant. This queuing resulted in inefficiencies in the upstream intersections such that they operated at very low levels of service. The Franklin Street project is intended to improve that situation and improve the level of services of the corridor.

IX. Sight Line Evaluation

Both the City of Portland and MaineDOT have guidelines for sight distances. The City's sight distance criteria is the same as MaineDOT. The basic sight line standards are as follows.

Standards for Sight Distance

Posted Speed (mph)	MaineDOT Required (ft)	City of Portland Required
25	200	200
30	250	250
35	305	305
40	360	360
45	425	425

MaineDOT and the City measure sight distance using the same methodology. GP has evaluated the available sight lines in accordance with MaineDOT / City standards.

The evaluation method is as follows:

Driveway observation point:	10 feet off edge of travel way
Height of eye at driveway:	3 ½ feet above ground
Height of approaching vehicle:	4 ¼ feet above ground

Speed limits on Fore Street are posted 25 mph, which requires a MaineDOT and City sight distance of 200 feet.

GP measured the sight distance at the proposed site accesses on Fore Street. The following table summarizes the measured sight distances:

Sight Distance Summary

	Posted Speed (mph)	Looking Left (ft)	Looking Right (ft)	MaineDOT Required (ft)	City Required (ft)
Driveway onto Fore	25 mph	300+	300+	200	200
Proposed Road onto Fore	25 mph	250	300+	200	200

As shown in the table, the sight distances exceed MaineDOT and City requirements. It should be noted that the sight distances exiting the proposed site driveway onto Fore Street assume the removal or relocation of on-street parking spaces on either side of the site driveway within the sight triangle. Additionally, the sight distance looking left from the proposed road onto Fore Street could be improved by relocating the Hamilton Marine sign further from the edge of the road.

X. Crash Data

GP obtained the crash data (attached in Appendix D) from MaineDOT for the period of 2013-2015, the most recent period available at the time this study was prepared. In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicates a rate of less than average) **and**:

2. A minimum of eight crashes over the same three-year period

Based on the crash data provided by MaineDOT there are two high crash locations within the study area; one at the intersection of Franklin Street with Middle Street, and one on Fore Street from its intersection with India Street to its intersection with Mountfort Street. It should be noted that there were two locations that did not meet the HCL criteria, but were close. The intersection of India Street with Fore Street

has a CRF of 1.60 and experienced seven collisions during the most recent three-year period and Cumberland Avenue from Boyd Street to Locust Street has a CRF of 4.13 and experienced seven collisions over the most recent three-year period. The intersection of India Street with Fore Street was previously identified as an HCL based on 2012-2014 crash data, but there were fewer crashes during the 2013-2015 period, so it no longer meets both HCL criteria.

To better evaluate the high crash locations and identify correctable crash patterns, the police reports for these locations were requested from MaineDOT and collision diagrams were created (attached in Appendix D). The two locations are described in more detail as follows:

Franklin Street / Middle Street

The intersection of Franklin Street with Middle Street has a CRF of 1.08 and experienced 20 crashes over the most recent three-year period. It is a four legged signalized intersection. Based on a review of the collision diagram all 20 collisions involved vehicles turning left from Franklin Street onto Middle Street colliding with vehicles traveling in the opposite direction of Franklin Street. This occurs in both the Franklin Street northbound and southbound directions, but 16 of the collisions involved southbound left-turning vehicles and northbound through vehicles. Of those 16 collisions, six occurred because the left-turning vehicle could not see the northbound through vehicle due to a snowbank in the median blocking the sight distance. Increased winter maintenance, specifically snow removal, could improve the sight distance at the intersection during winter months, providing left-turning vehicles with a clear view of oncoming traffic.

Fore Street from India Street to Mountfort Street

This section of Fore Street has a CRF of 2.12 and experienced nine crashes over the most recent three-year period, seven of which occurred at the intersection of Fore Street with Hancock Street. The intersection of Fore Street with Hancock Street is stop controlled with stop signs on Hancock Street and free flowing traffic on Fore Street. Based on a review of the collision diagram there does not appear to be a clear and correctable crash pattern. Most collisions at the intersection of Hancock Street with Fore Street were caused by a driver failing to yield the right of way.

XI. Existing Pedestrian, Bicycle, and Transit Infrastructure

One of the benefits of being located in a downtown area is that there is a complete network of sidewalks in the vicinity of the site. The Eastern Promenade Trail runs through the 58 Fore Street development. This pedestrian and bicycle trail connects

the site to a 70-mile trail network. Fore Street has sidewalks on both sides that extend west into Downtown Portland and east toward the Eastern Promenade. The sidewalks are in adequate condition, however there are utility poles and sign posts on the south side of Fore Street are located within the sidewalk, which decreases the sidewalk width. As part of the 58 Fore Street development, the sidewalk on Fore Street in front of the site will be rebuilt. It is recommended that any new sidewalks be constructed to meet ADA requirements.

The site is located within a 3-8 minute walk to several METRO bus stops. It is also approximately a five minute walk from the Ocean Gateway Pier and approximately a ten minute walk from the Maine State Pier, where the Casco Bay Lines Ferry Terminal is located. These bus stops and piers have a continuous network of sidewalks connecting them to the site.

Overall, the existing pedestrian, bicycle, and transit infrastructure is adequate.

XII. Conclusions and Recommendations

The following is a summary of the conclusions and recommendations based on the information and analyses presented in this study:

1. The proposed mixed use development is forecast to generate 424 trip ends during the weekday AM peak hour and 474 trip ends during the weekday PM peak hour. This level of trip generation requires a MaineDOT traffic movement permit. The Traffic Movement Permit Application can be reviewed and the permit issued by the City since they have delegated review authority.

2. The capacity analyses show that the study area intersections are forecast to operate at acceptable levels of service for almost all scenarios once the development is completed and occupied. The exception is the Franklin Street inbound movement in the PM peak hour in the year 2027. However, a change in timing at the intersections may improve the level of service.

3. The sight distances exceed MaineDOT and City requirements at the proposed new road connecting Fore Street to Thames Street Extension and at the proposed site driveway onto Fore Street, provided on-street parking within the sight triangle on either side of the proposed driveway is removed or relocated.

4. The crash data shows that there are two high crash locations in the study area. Based on a review of the collision diagrams there is no clear correctable crash pattern on Fore Street from India Street to Mountfort Street, but there is a crash pattern of left turning vehicle colliding with through vehicles at the intersection of

Middle Street with Franklin Street. The traffic from this development is not anticipated to significantly impact this crash pattern.

5. The existing pedestrian, bicycle, and transit infrastructure is adequate, except the utility poles and signs located within the sidewalks along the south side of Fore Street, which is proposed to be rebuilt as part of this project. The site is surrounded by a continuous sidewalk network, located within a 3-8 minute walk from METRO bus stops and a 5-10 minute walk from the two closest piers, and the Eastern Promenade bicycle and pedestrian trail runs through the site.

Appendix A

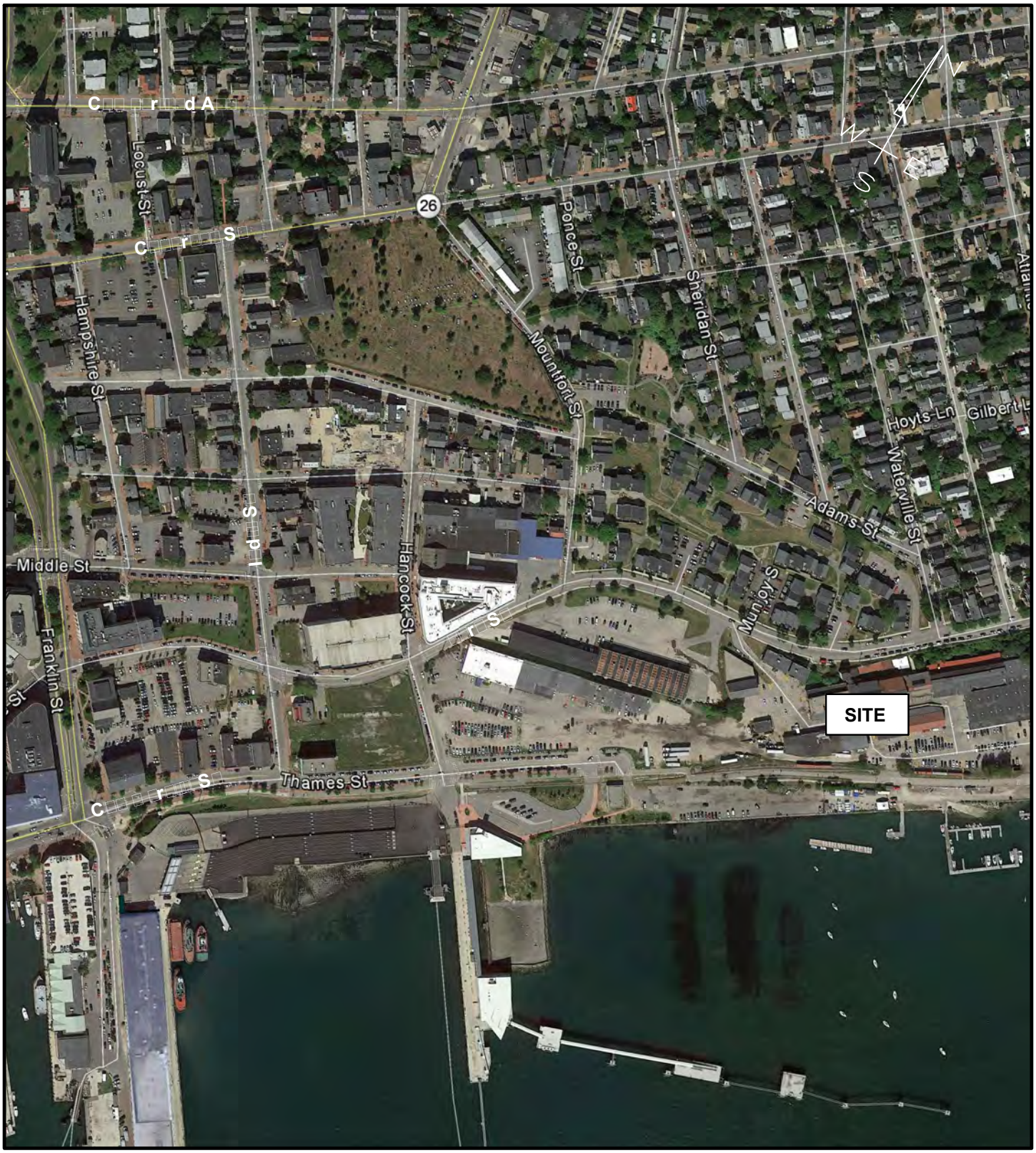
Location Map

Turning Movement Diagrams

Other Development Figure

Lo□at□on Map

Figure No. 1



□□□ORE □TREET REDEVELOPMENT
PORTLAND, MAINE

Design:	ET	Scale:	NONE
Draft:	LAN	Date:	OCT 201□
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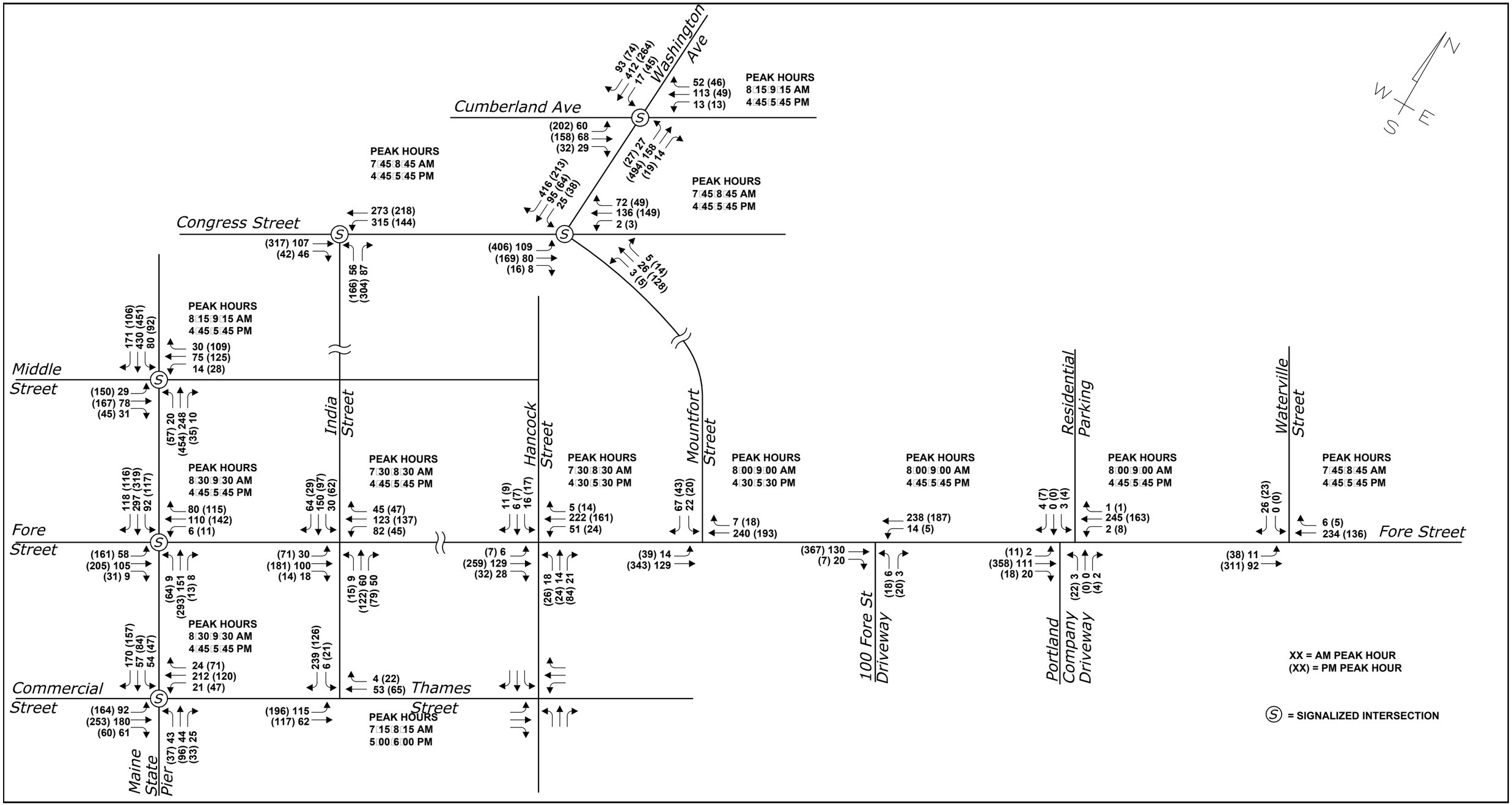
Raw Volumes

Figure No. 2



FORE STREET REDEVELOPMENT
PORTLAND, MAINE

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Date: AUGUST 2016
File Name: 3138-TRAFF.dwg

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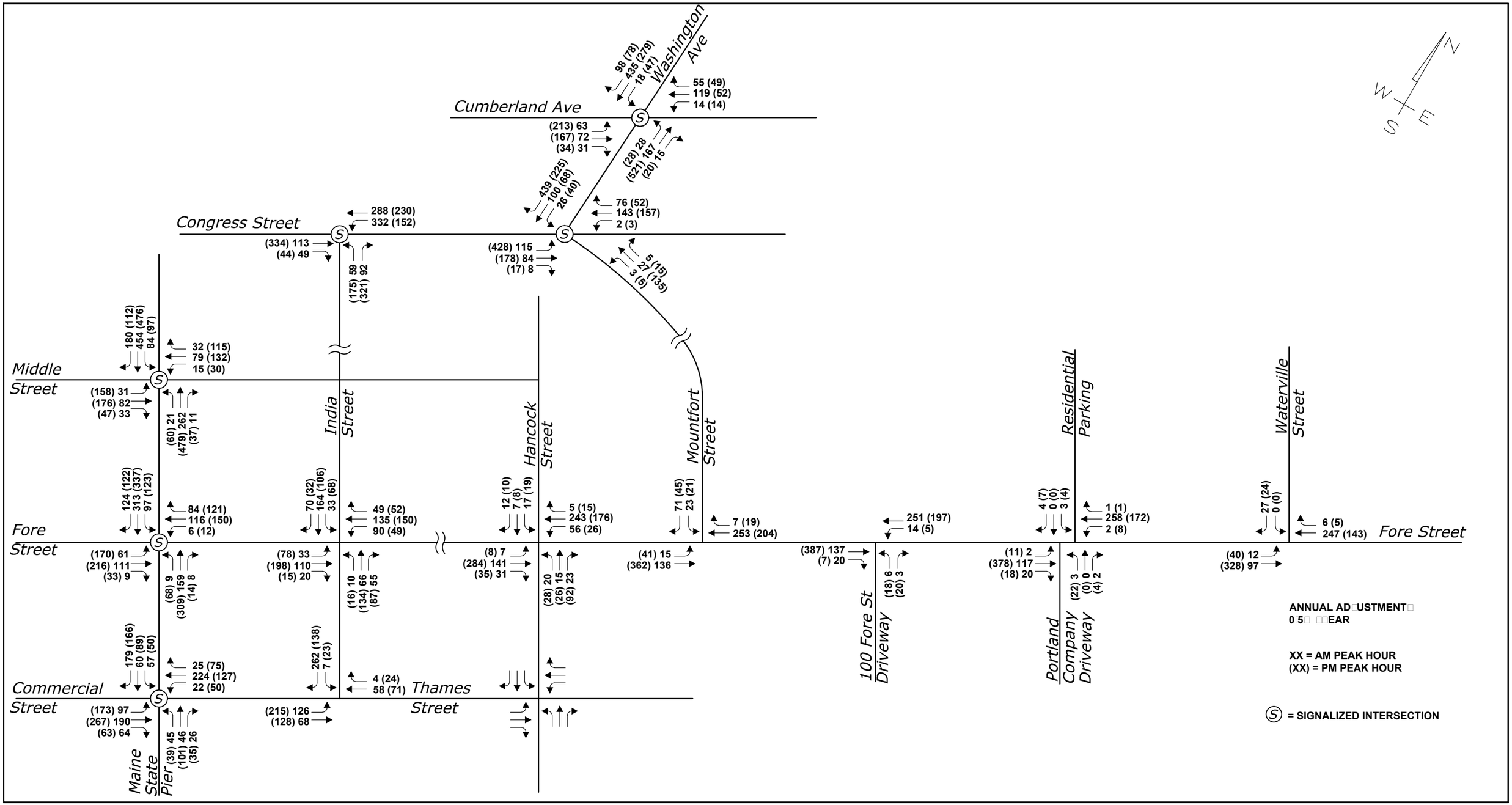
Adjusted Volumes

Figure No. 3



FORE STREET REDEVELOPMENT
PORTLAND, MAINE

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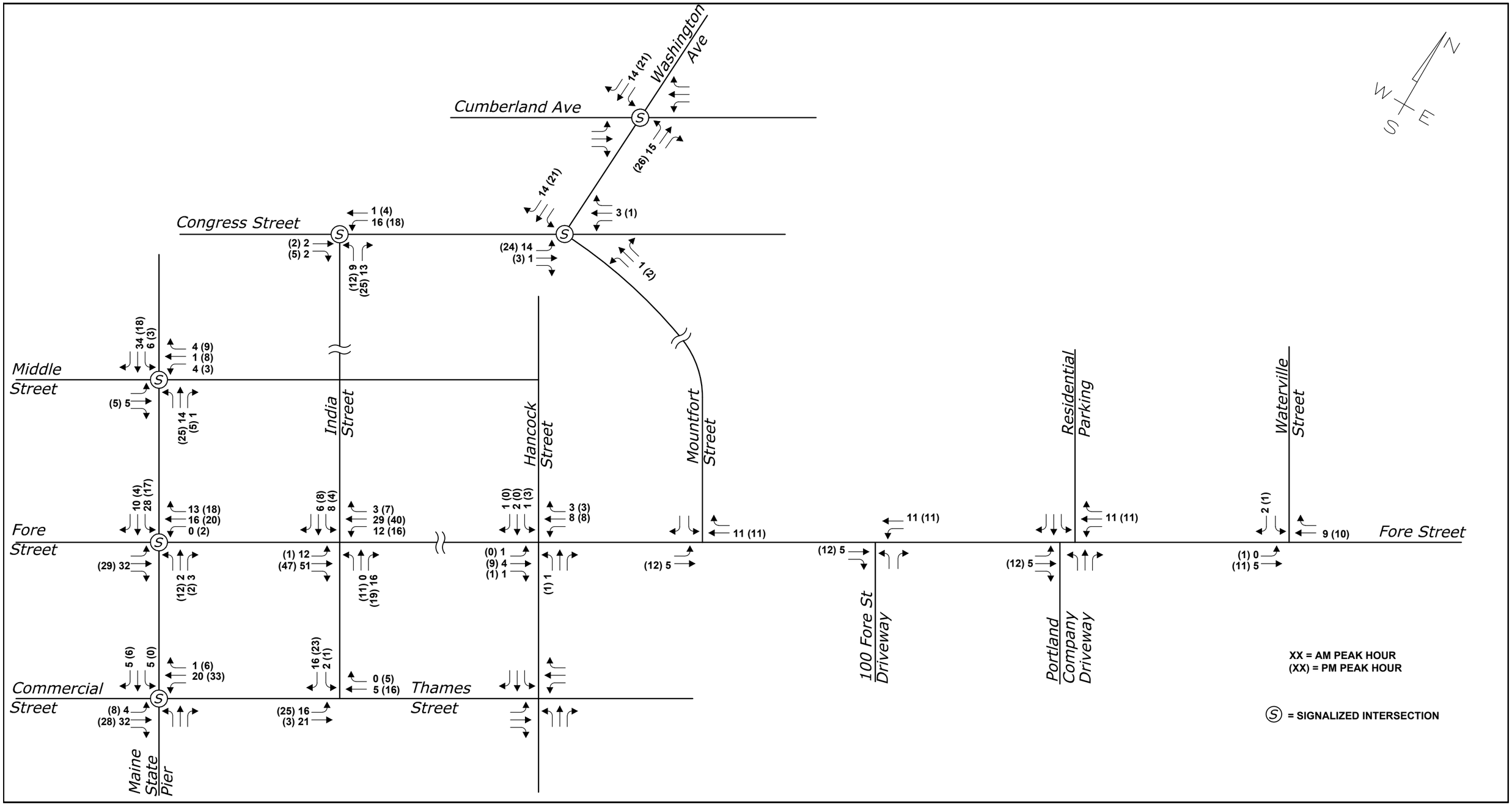
Other Development

Figure No. 4



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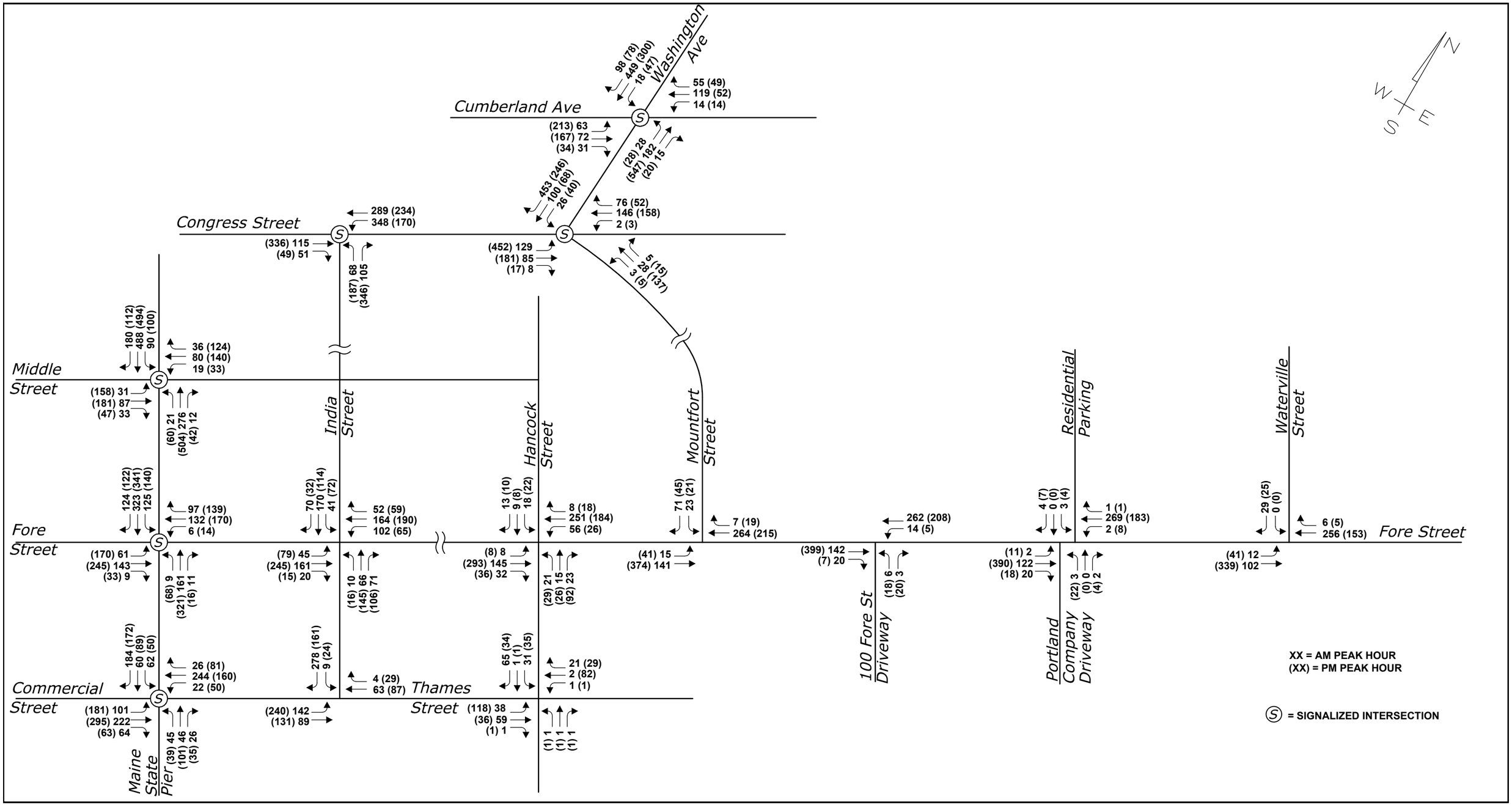
□□□□Predevelopment D□V

Figure No. 5



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PORTLAND, MAINE

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Draft: LAN
Checked: RED

Scale: NONE
Date: AU□UST 2016
File Name: 3138-TRAFF.dwg

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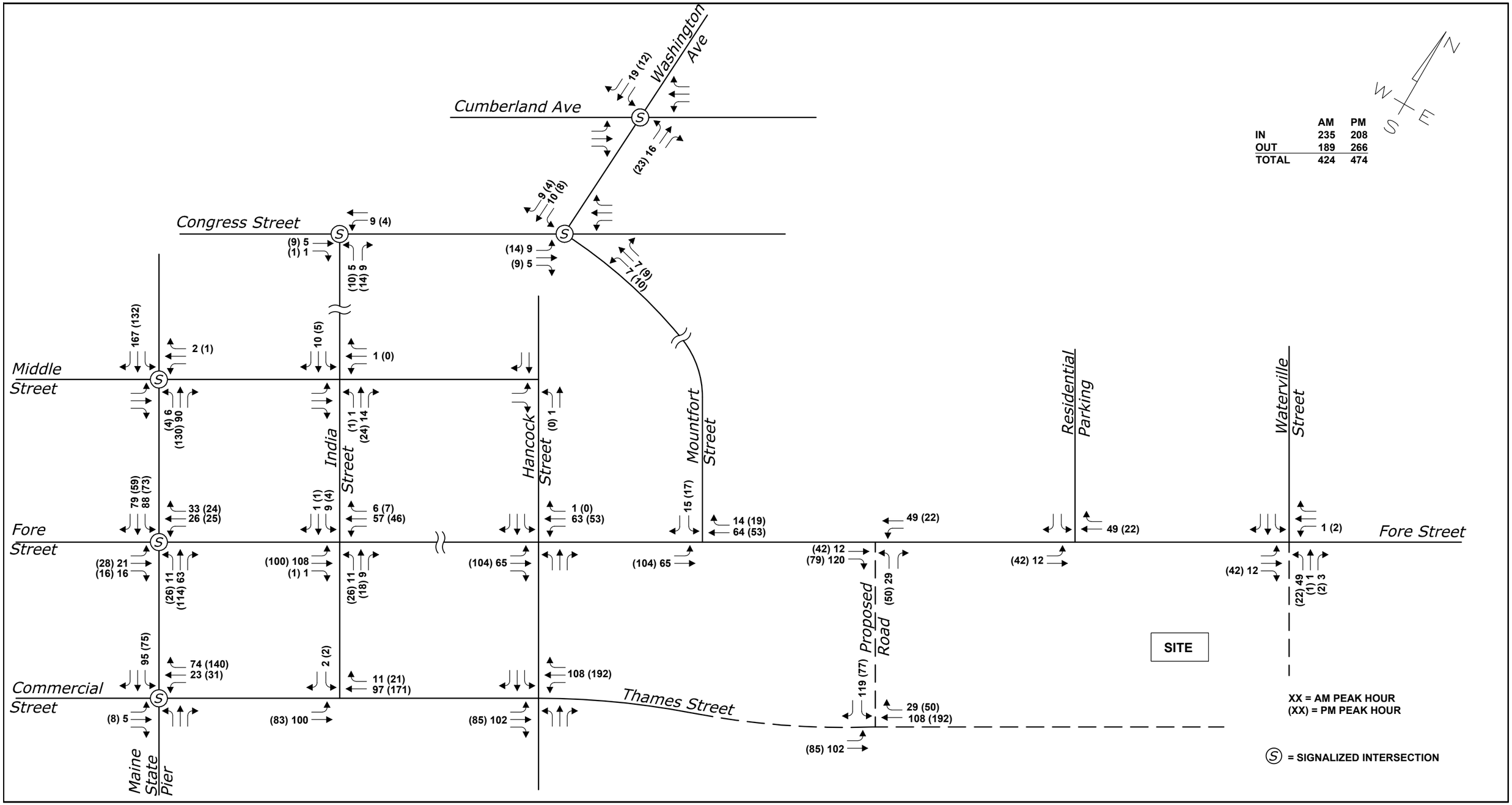
Total Trip Assignment

Figure No. 6



	AM	PM
IN	235	208
OUT	189	266
TOTAL	424	474

FORE STREET REDEVELOPMENT
PORTLAND, MAINE

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Draft: LAN
Checked: RED
Scale: NONE
Date: AUGUST 2016
File Name: 3138-TRAFF.dwg

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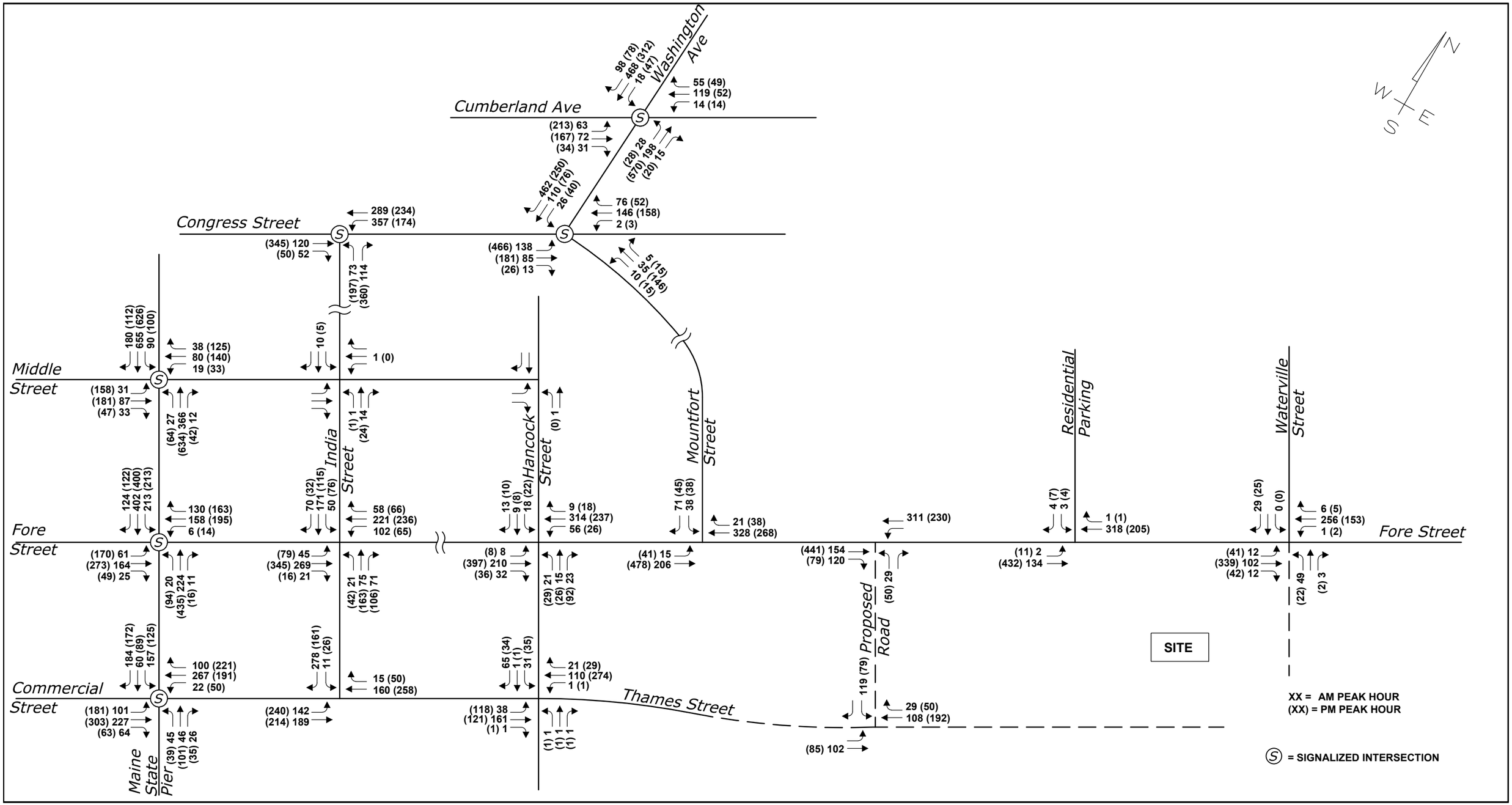
□□□□Postdevelopment D□V

Figure No. 7



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Other Development

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Appendix B

ITE Trip Generation Calculations

NCHRP Spreadsheets

Commute Data Maps

Site Parking Demand Memo

Marina Trip Generation Calculations

58 Fore Street Trip Generation Summary
Portland, Maine
September 2, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
	Retail	814 - Specialty Retail	4,000	SF		3	60%	40%	2	1	11	45%	55%	5	6
					B4 Total:	**143**	**21%**	**79%**	**30**	**113**	**182**	**64%**	**36%**	**116**	**66**
B5															
	Residential	230 - Residential Condominium/Townhouse	108	Dwelling Units		48	15%	85%	7	41	56	65%	35%	36	20
	Hotel	310 - Hotel	132	Rooms		74	60%	40%	44	30	78	55%	45%	43	35
	Restaurant	932 - High Turnover (Sit Down) Restaurant	3,800	SF		44	50%	50%	22	22	41	60%	40%	25	16
					B5 Total:	**166**	**44%**	**56%**	**73**	**93**	**175**	**59%**	**41%**	**104**	**71**
B6															
	Residential	230 - Residential Condominium/Townhouse	131	Dwelling Units		58	15%	85%	9	49	68	65%	35%	44	24
	Residential	220 - Apartment	14	Dwelling Units		7	20%	80%	1	6	9	65%	35%	6	3
					B6 Total:	**65**	**15%**	**85%**	**10**	**55**	**77**	**65%**	**35%**	**50**	**27**
B7															
	Marina Facilities	N/A	2,600	SF		36	72%	28%	26	10	36	28%	72%	10	26
					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
					Site Total:	**769**	**54%**	**46%**	**413**	**356**	**921**	**45%**	**55%**	**418**	**503**

		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
	B1-B6 Subtotal:	733	53%	47%	387	346	885	46%	54%	408	477
	NCHRP 684 Reduction:	102	12%	14%	51	51	150	18%	15%	75	75
35.8%	Other Modes Reduction:	236	35.8%	35.8%	123	113	289	35.8%	35.8%	131	158
10%	Hotel Other Modes Reduction:	7	57%	43%	4	3	8	50%	50%	4	4
	B1-B6 Total:	**388**	**54%**	**46%**	**209**	**179**	**438**	**45%**	**55%**	**198**	**240**
	Marina Total	36	72%	28%	26	10	36	28%	72%	10	26
	Site Total	**424**	**55%**	**45%**	**235**	**189**	**474**	**44%**	**56%**	**208**	**266**

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	268	242	26
Retail	814	50,273	SF	38	23	15
Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]	N/A	2,600	SF	36	26	10
Total				769	413	356

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	769	413	356
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips[3]	667	362	305
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

58 Fore Street Trip Generation Summary
Portland, Maine
September 2, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
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					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
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NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

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Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

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Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
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[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

58 Fore Street Trip Generation Summary
Portland, Maine
September 2, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
	Retail	814 - Specialty Retail	4,000	SF		3	60%	40%	2	1	11	45%	55%	5	6
					B4 Total:	**143**	**21%**	**79%**	**30**	**113**	**182**	**64%**	**36%**	**116**	**66**
B5															
	Residential	230 - Residential Condominium/Townhouse	108	Dwelling Units		48	15%	85%	7	41	56	65%	35%	36	20
	Hotel	310 - Hotel	132	Rooms		74	60%	40%	44	30	78	55%	45%	43	35
	Restaurant	932 - High Turnover (Sit Down) Restaurant	3,800	SF		44	50%	50%	22	22	41	60%	40%	25	16
					B5 Total:	**166**	**44%**	**56%**	**73**	**93**	**175**	**59%**	**41%**	**104**	**71**
B6															
	Residential	230 - Residential Condominium/Townhouse	131	Dwelling Units		58	15%	85%	9	49	68	65%	35%	44	24
	Residential	220 - Apartment	14	Dwelling Units		7	20%	80%	1	6	9	65%	35%	6	3
					B6 Total:	**65**	**15%**	**85%**	**10**	**55**	**77**	**65%**	**35%**	**50**	**27**
B7															
	Marina Facilities	N/A	2,600	SF		36	72%	28%	26	10	36	28%	72%	10	26
					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
					Site Total:	**769**	**54%**	**46%**	**413**	**356**	**921**	**45%**	**55%**	**418**	**503**

		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
	B1-B6 Subtotal:	733	53%	47%	387	346	885	46%	54%	408	477
	NCHRP 684 Reduction:	102	12%	14%	51	51	150	18%	15%	75	75
35.8%	Other Modes Reduction:	236	35.8%	35.8%	123	113	289	35.8%	35.8%	131	158
10%	Hotel Other Modes Reduction:	7	57%	43%	4	3	8	50%	50%	4	4
	B1-B6 Total:	**388**	**54%**	**46%**	**209**	**179**	**438**	**45%**	**55%**	**198**	**240**
	Marina Total	36	72%	28%	26	10	36	28%	72%	10	26
	Site Total	**424**	**55%**	**45%**	**235**	**189**	**474**	**44%**	**56%**	**208**	**266**

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	268	242	26
Retail	814	50,273	SF	38	23	15
Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]	N/A	2,600	SF	36	26	10
Total				769	413	356

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	769	413	356
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips[3]	667	362	305
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

58 Fore Street Trip Generation Summary
Portland, Maine
September 2, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
	Retail	814 - Specialty Retail	4,000	SF		3	60%	40%	2	1	11	45%	55%	5	6
					B4 Total:	**143**	**21%**	**79%**	**30**	**113**	**182**	**64%**	**36%**	**116**	**66**
B5															
	Residential	230 - Residential Condominium/Townhouse	108	Dwelling Units		48	15%	85%	7	41	56	65%	35%	36	20
	Hotel	310 - Hotel	132	Rooms		74	60%	40%	44	30	78	55%	45%	43	35
	Restaurant	932 - High Turnover (Sit Down) Restaurant	3,800	SF		44	50%	50%	22	22	41	60%	40%	25	16
					B5 Total:	**166**	**44%**	**56%**	**73**	**93**	**175**	**59%**	**41%**	**104**	**71**
B6															
	Residential	230 - Residential Condominium/Townhouse	131	Dwelling Units		58	15%	85%	9	49	68	65%	35%	44	24
	Residential	220 - Apartment	14	Dwelling Units		7	20%	80%	1	6	9	65%	35%	6	3
					B6 Total:	**65**	**15%**	**85%**	**10**	**55**	**77**	**65%**	**35%**	**50**	**27**
B7															
	Marina Facilities	N/A	2,600	SF		36	72%	28%	26	10	36	28%	72%	10	26
					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
					Site Total:	**769**	**54%**	**46%**	**413**	**356**	**921**	**45%**	**55%**	**418**	**503**

		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
	B1-B6 Subtotal:	733	53%	47%	387	346	885	46%	54%	408	477
	NCHRP 684 Reduction:	102	12%	14%	51	51	150	18%	15%	75	75
35.8%	Other Modes Reduction:	236	35.8%	35.8%	123	113	289	35.8%	35.8%	131	158
10%	Hotel Other Modes Reduction:	7	57%	43%	4	3	8	50%	50%	4	4
	B1-B6 Total:	**388**	**54%**	**46%**	**209**	**179**	**438**	**45%**	**55%**	**198**	**240**
	Marina Total	36	72%	28%	26	10	36	28%	72%	10	26
	Site Total	**424**	**55%**	**45%**	**235**	**189**	**474**	**44%**	**56%**	**208**	**266**

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
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Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]	N/A	2,600	SF	36	26	10
Total				769	413	356

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	769	413	356
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips[3]	667	362	305
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	268	242	26
Retail	814	50,273	SF	38	23	15
Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]	N/A	2,600	SF	36	26	10
Total				769	413	356

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	769	413	356
Internal Capture Percentage	13%	12%	14%
External Vehicle-Trips[3]	667	362	305
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	26	26	26	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	10	10	10	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	Max Build Out	**Date:**	2-Sep
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]	N/A	2,600	SF	36	10	26
Total				921	418	503

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	921	418	503
Internal Capture Percentage	16%	18%	15%
External Vehicle-Trips[3]	771	343	428
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Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	38	38		1.00	220	220
Retail	1.00	61	61		1.00	75	75
Restaurant	1.00	25	25		1.00	16	16
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	241	241		1.00	131	131
Hotel	1.00	43	43		1.00	35	35

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		44	9	0	4	0
Retail	2		22	3	20	4
Restaurant	0	7		1	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	55	28	0		4
Hotel	0	6	24	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	10	0
Retail	12		7	0	111	7
Restaurant	11	31		0	39	31
Cinema/Entertainment	2	2	1		10	0
Residential	22	6	4	0		5
Hotel	0	1	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	31	38		31	0	0
Retail	19	42	61		42	0	0
Restaurant	13	12	25		12	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	27	214	241		214	0	0
Hotel	9	34	43		34	0	0
All Other Land Uses[3]	0	10	10		10	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	210	220		210	0	0
Retail	33	42	75		42	0	0
Restaurant	11	5	16		5	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	19	112	131		112	0	0
Hotel	2	33	35		33	0	0
All Other Land Uses[3]	0	26	26		26	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	58 Fore Street
Analysis Period:	**Scenario 1 - PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	38	38		1.00	220	220
Retail	1.00	61	61		1.00	75	75
Restaurant	1.00	25	25		1.00	16	16
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	241	241		1.00	131	131
Hotel	1.00	43	43		1.00	35	35

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		44	9	0	4	0
Retail	2		22	3	20	4
Restaurant	0	7		1	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	55	28	0		4
Hotel	0	6	24	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	10	0
Retail	12		7	0	111	7
Restaurant	11	31		0	39	31
Cinema/Entertainment	2	2	1		10	0
Residential	22	6	4	0		5
Hotel	0	1	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	31	38		31	0	0
Retail	19	42	61		42	0	0
Restaurant	13	12	25		12	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	27	214	241		214	0	0
Hotel	9	34	43		34	0	0
All Other Land Uses[3]	0	10	10		10	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	210	220		210	0	0
Retail	33	42	75		42	0	0
Restaurant	11	5	16		5	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	19	112	131		112	0	0
Hotel	2	33	35		33	0	0
All Other Land Uses[3]	0	26	26		26	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

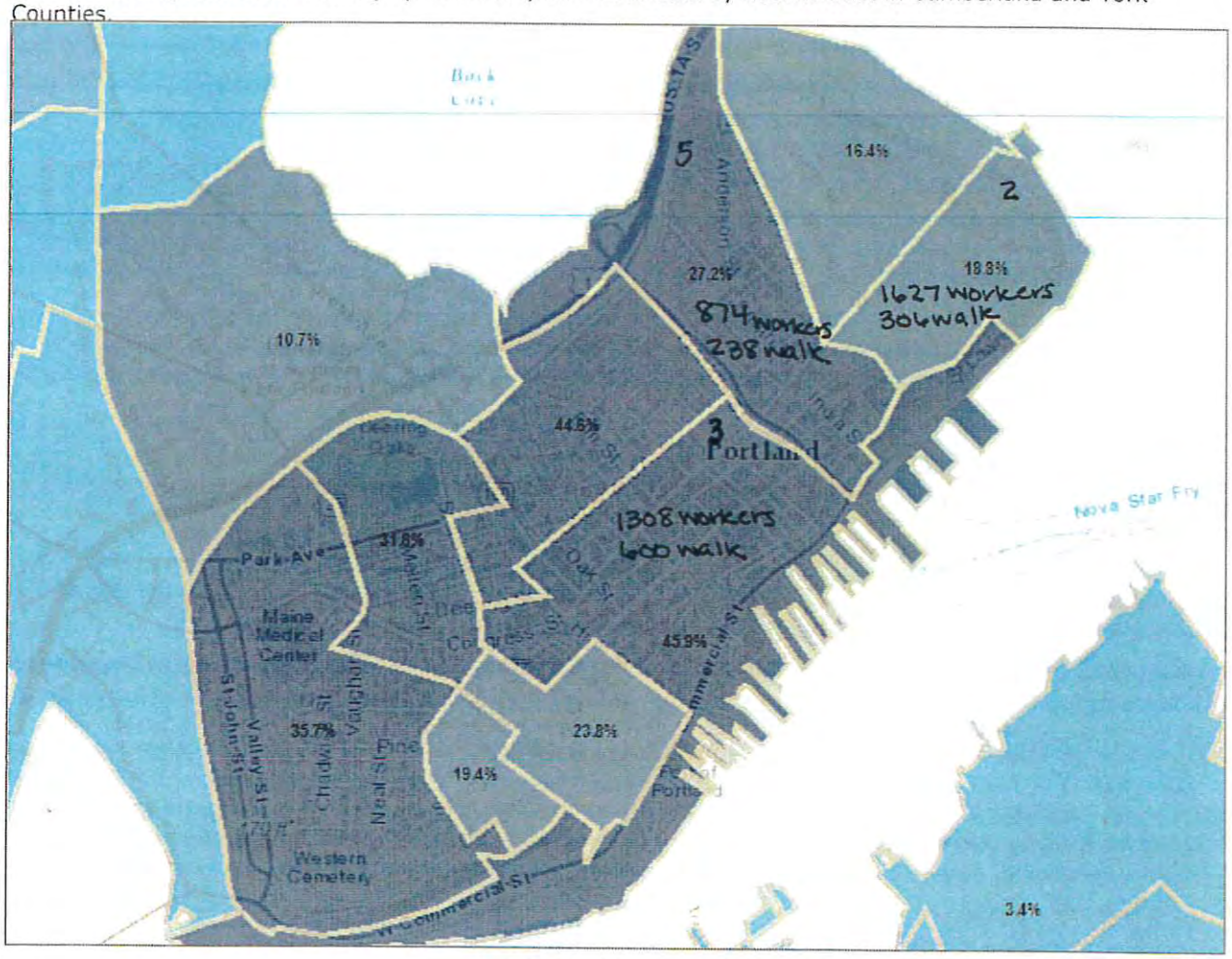
[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Walked

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

3809 Workers
1144 Walk

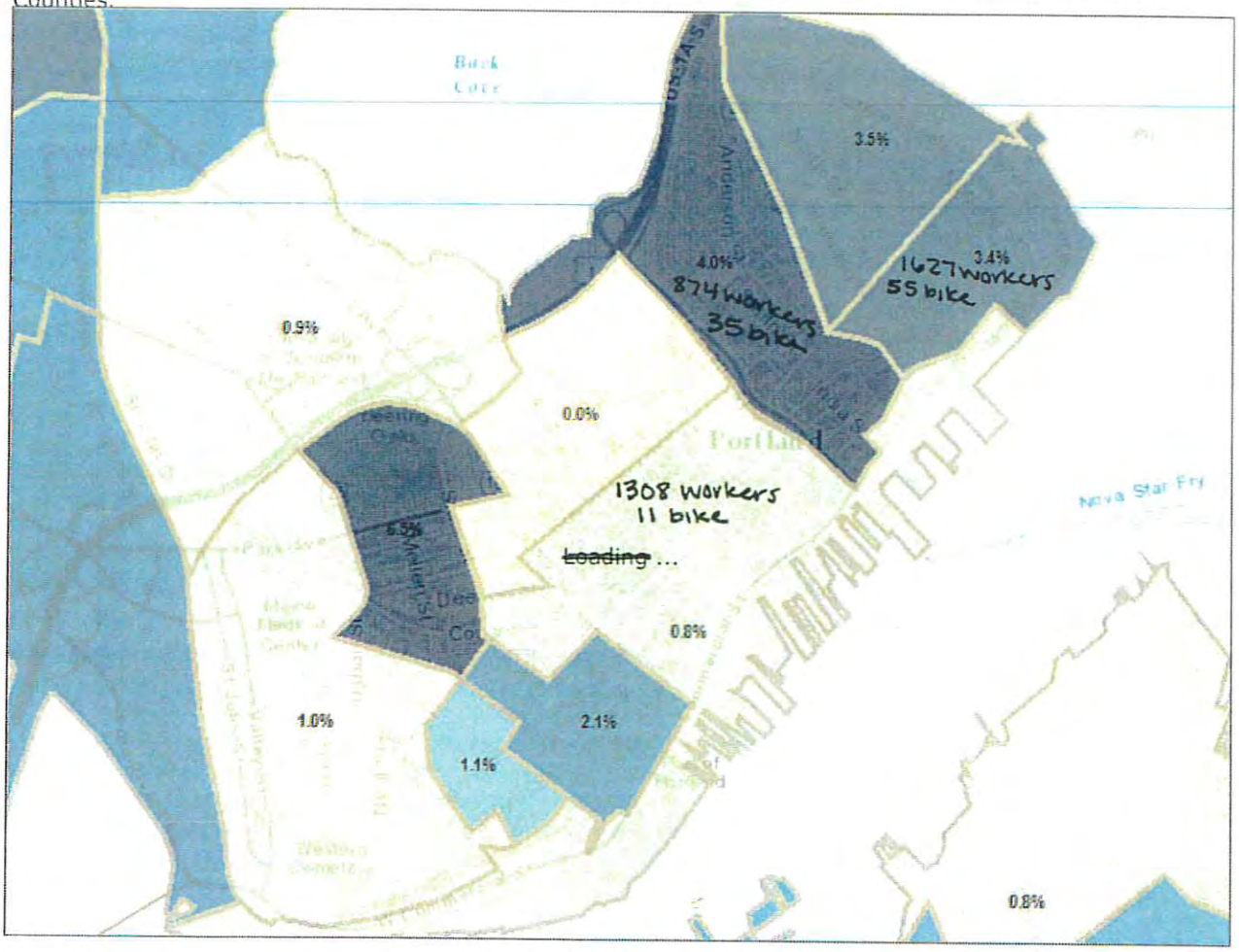
30.0% walk

Walk/Bike/Transit
30.0 + 2.7 + 3.1 = 35.8%

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Biked

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

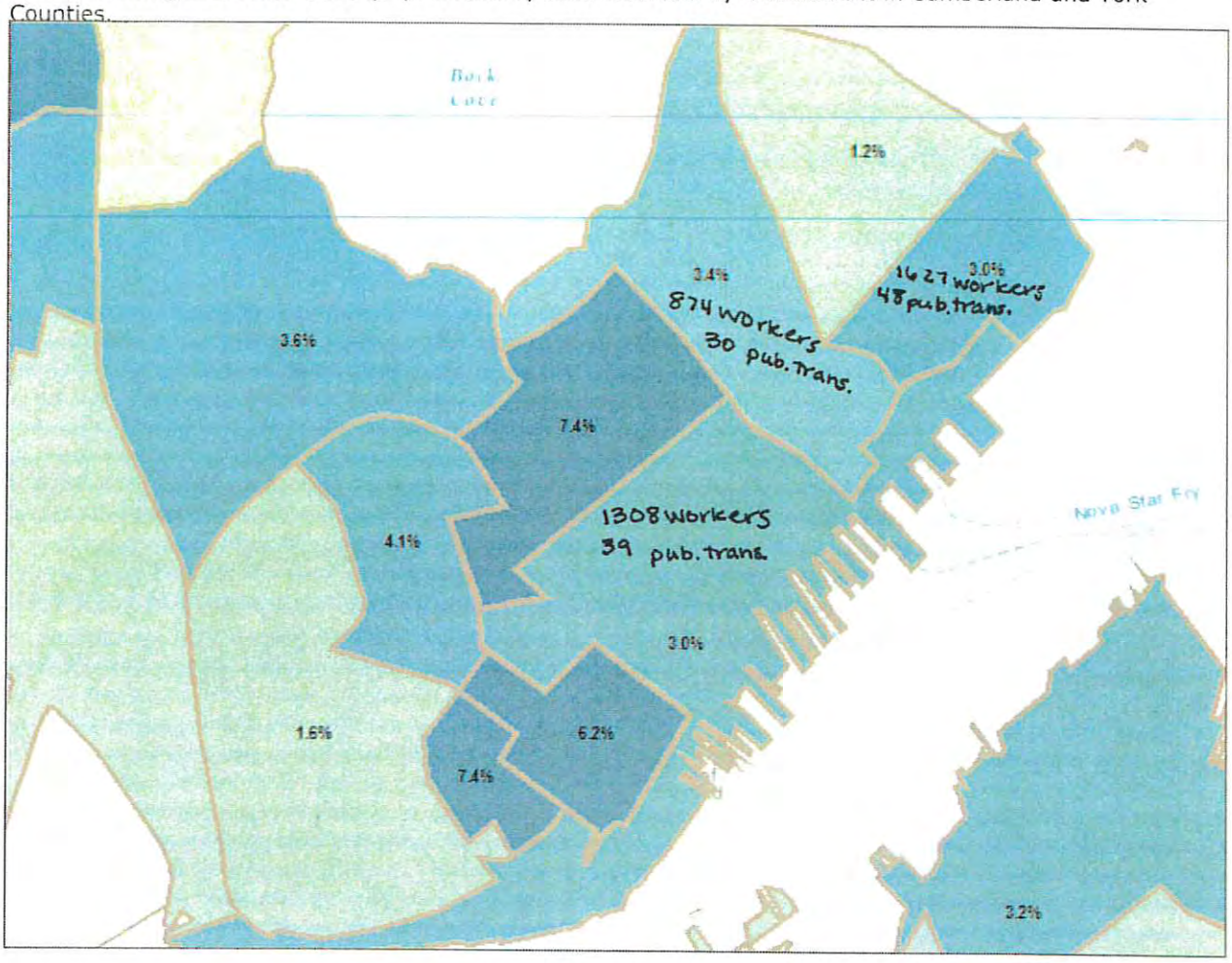
3809 workers
101 Bike

2.7% Bike

Southern Maine Commute Data (ACS 2009-2013, 5-Yr Est. by Census Tract)

Public Transportation

A map showing ACS 2009-2013 (5-yr estimate) commute data by census tract in Cumberland and York Counties.



Esri, HERE, DeLorme, INCREMENT P, USGS, METI/NASA, EPA, USDA

3809 Workers
117 Public Transportation

3.1% Public Transportation

GORRILL PALMER

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207.772.2515

Site Parking Demand
58 Fore Street Mixed Use Development
Portland, Maine
JN 3138

Date: September 16, 2016
Subject: Site Parking Demand
58 Fore Street Mixed Use Development
To: David Senus, Mary McCrann, Jim Brady, Kevin Costello, Casey Prentice
From: Randy Dunton and Emily Tynes, Gorrill Palmer (JN 3138)

The following is a summary of the estimated parking demand for the proposed mixed use development at 58 Fore Street. The following table summarizes the sizes and uses of the proposed development used to calculate the parking demand:

Proposed Site Summary

Development Block	Use	Size
B1		
	Retail	7,878 SF
	Residential	91 Dwelling Units
	Office	79,000 SF
B2		
	Retail	26,895 SF
	Residential	19 Dwelling Units
	Office	25,617 SF
B3		
	Retail	11,500 SF
	Office	19,300 SF
B4		
	Residential	275 Dwelling Units
	Retail	4,000 SF
B5		
	Residential	108 Dwelling Units
	Hotel	132 Rooms
	Restaurant	3,800 SF
	Function	5,800 SF
B6		
	Residential (Condos)	131 Dwelling Units
	Residential (Apartments)	14 Dwelling Units
B7		
	Marina Facilities	2,600 SF, 220 Slips

It should be noted that the retail portions of the proposed site will be multiple smaller shops, not large retail stores.

Parking Demand Calculation Methodologies

The parking demand has been determined using two methodologies: using the City Ordinance requirements and based on a shared parking demand. The following summarizes the methodologies in more detail:

City Ordinance Parking Demand

The Ordinance requirement methodology involves calculating the peak parking demand for each use using the City of Portland Code of Ordinances. This method assumes each use is isolated and then adds the individual demands to determine the parking demand for the site. The supporting calculations for this method are attached. This method results in an overestimate because the peak demands for each use are not expected to occur at the same time. For example, offices require more spaces during the day while employees are in the office, and residential buildings would require more spaces later at night when residents are home from work.

The City Ordinance Ch. 14, Art III, Div. 20, Sec. 14-332.2 (c) states, "where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer." Since this mixed use development is approximately 958,679 sf of building floor area, it meets the criteria. Therefore, the site parking demand was determined based on the following methodology.

Shared Parking Plan

The shared parking plan methodology is based on a combination of City Ordinance parking demand, the ITE Parking Generation Manual (4th Edition), and published data / engineering judgement and it reflects that the demand for different uses will peak during different times of day. Since different uses do not peak at the same times, parking spaces can be shared between uses. To determine the shared parking demand, the total parking demand was calculated for each use, then distributed throughout the day based on the type of use. This is the same methodology used for the recent Thompson's Point project. The supporting calculations are attached. With a shared parking plan it is recommended that shared parking language be included in the leases, to ensure tenants understand the shared parking.

Parking Demand Reductions

Given the mixed use of the site as well as its downtown location, the following two parking demand reductions were applied to the shared parking spaces:

Shared Use Reduction

When evaluating a mixed use development with complementary uses such as this, the overall parking demand can be reduced due to the expectation that there will be some cross use between the individual facilities. For instance, it can be assumed that some of the people living in the apartments would also be those that visit the retail. Gorrill Palmer (GP) used the NCHRP 684 Internal Trip Capture Estimation Tool to calculate the reduction that can be applied to the trip generation. This calculated an internal trip capture of 14% for the AM peak hour and 17% for the PM peak hour. It can be assumed that parking demand can be reduced proportionally to the reduction in trip generation. To be conservative, GP used a shared use reduction of 14% throughout the day to estimate the parking demand. The following table summarizes the shared use reduction:

Shared Use Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand	919	690
Shared Use Reduction (14%)	-129	-97

Other Modes Reduction

The overall parking demand for a development in a downtown area can also be reduced due to the expectation that some people going to or from the site would use other modes of transportation such as transit, bicycle, or walking. The site is adjacent to an existing bus route as well as located on a bicycle and pedestrian path. The other modes reduction is based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract. Based on this information Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, created maps using GIS data that illustrate the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to commute to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the individual tracts. This reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number

of working people in the same three Census Tracts. This calculation yields a 35.8% use of non-vehicular modes of transportation.

The GPCOG data is based on residents of the Census Tracts commuting to work, so it is applicable to the residential units, office space, and retail uses on the site. It was not clear if the 35.8% reduction would also be applicable to the restaurants and hotel, even though there are hotels and restaurants located within the boundaries of the three Census Tracts. GP searched for studies that included information on other modes of transportation for restaurants and hotels and found two sources that had information that could be compared to the other modes of transportation calculated using the Portland Census data. The following is a more detailed description of the relevant information found in the two studies:

The first study is *Contextual Influences on Trip Generation* (found in the United States Department of Transportation National Transportation Library online database or at the following link: http://ntl.bts.gov/lib/46000/46600/46699/CITG_FinalReport_Draft_10022012.pdf), a study for the Oregon Transportation Research and Education Consortium (OTREC) that compared the ITE predicted trip generation to the actual trip generation of 79 locations in Portland, Oregon, 39 of which were high turnover sit-down restaurants. The study also included surveying the visitors of those sites to determine what mode of transportation the visitors used. The results of the study are divided into different types of areas, ranging from central business district, which is considered the most urban area, to suburban areas, which is considered the least urban type of area surveyed. This study surveyed 12 restaurants in the central business district area and found that 35% of the patrons arrived to the sites using a car, while the remaining 65% walked, biked, or used transit (table attached). This result is higher than the 35.8% use of other modes calculated using the GPCOG information. Because the data is for Portland, Oregon it may not be appropriate to use as a reduction, but it does indicate that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

The second source that included restaurant information is the National Cooperative Highway Research Program (NCHRP) Report 758, *Trip Generation Rates for Transportation Impact Analyses of Infill Developments*. This study used information from the Household Travel Survey (HTS) for the San Francisco Bay area and Metropolitan Washington D.C. and counted data and surveys at specific sites in those areas. The Washington D.C. HTS data for restaurants shows that approximately 40.3% of residents use transit, walk, or bicycle to and from high-turnover sit-down restaurants (table attached). The study only included one site that was counted and surveyed, so the HTS data could not be verified, however like the Portland, Oregon study, it is higher than the other modes reduction calculated using the GPCOG Census information. Like the Portland, Oregon study, this data indicates that in an urban area a large portion of site traffic can be expected to use transit, bike, or walk.

Based on these two additional sources that contain information specific to restaurant uses, GP determined that the other modes reduction of 35.8% calculated from the GPCOG Census

information that is based on the existing transit system can be applied to the restaurant parking demand. Although the other two studies showed higher percentages of people using alternative modes of transportation to go to or from restaurants, since they are not specific to Portland, Maine, the local data is expected to be closer to the actual conditions that would be seen at the 58 Fore Street development.

The two studies discussed above included information about restaurants, but did not have any data for hotels. Based on our research there is limited information available about modes of transportation used at hotels. It can be assumed for the 58 Fore Street site that hotel employees may take the bus, bike, or walk to get to and from work and some hotel guests may arrive by boat using the marina. To be conservative, GP only used an "other modes of transportation" reduction of 10% for the hotel.

The following table summarizes the other modes of transportation reduction for the site:

Other Modes of Transportation Reduction Summary

Proposed	Ordinance	Shared Parking
B1-B6 Peak Parking Demand w/o Hotel	886	677
Hotel Peak Parking Demand	33	13
Other Modes Reduction (35.8% of B1-B6 Demand w/o Hotel)	-317	-242
Hotel Other Modes Reduction (10% of Hotel Demand)	-3	-1
Total Other Modes Reduction	**-320**	**-243**

Marina Parking Demand

The City Ordinance does not include a parking requirement for marina facilities. The parking demand for the proposed marina is based on information from Applied Technology & Management (ATM). The new marina is proposed to have 220 slips that will service off-site Portland residents, on-site Portland residents, and transient boaters. ATM provided a range of parking rates from one space for every two slips to one space for every four slips. ITE has limited marina parking information available, however the ATM parking rates appear to be consistent with the ITE data. To be conservative, GP used a requirement of one parking space for every two slips. ATM expects peak usage of the marina to be 10% of the slips, but possibly higher since Maine has a shorter boating season. To be conservative, GP assumed that the peak demand would be 15% of the slips. ATM also stated that there would be approximately 9 employees at this marina, therefore GP included an additional 5% to include spaces for employees, giving a total peak demand estimation of 20% of the slips. Because of the nature of a marina use, the two parking demand reductions that were applied to the rest of the site were not applied to the

marina parking demand. Although it is possible that marina users visit other uses on site or use alternative modes of transportation to get to the site, to be conservative the reductions were not applied.

Dedicated Parking Spaces

Often in large developments, a portion of parking spaces are dedicated to a specific use. For example, residential units may have spaces assigned to each unit or a group of spaces may be reserved for use by only an office. These dedicated spaces would not be shared by any other site uses. The number of dedicated parking spaces is added to the number of shared parking spaces to determine the total site demand. On this site, there are 298 dedicated parking spaces proposed. These spaces include; half of the residential units in B1, all the residential units in B5, and all the residential units in B6. The two parking demand reductions that were applied to the rest of the site were not applied to the dedicated parking spaces, since the spaces will not be shared and will be provided for the peak demand regardless of the expected use of transit, bicycles, or walking.

Parking Demand Summary

The following table summarizes the overall parking demand for the site, including the reductions, based on both the Ordinance and the Shared Parking demand methodologies:

Parking Demand Summary

Proposed	Ordinance	Shared Parking
B1-B6 Shared Parking Demand	919	690
Shared Use Reduction	-129	-97
Other Mode Reduction	-320	-243
B1-B6 Total Shared Parking Demand	**470**	**350**
B7 (Marina) Parking Demand	110	22
B1-B7 Total Parking Demand	**580**	**372**
B1-B7 Dedicated Parking	298	298
Net Parking Demand	**878**	**670**

As shown in the table, the proposed parking demand, including reductions, based on the Ordinance and isolated uses is forecast to be 878 spaces and the parking demand based on shared parking is 670 spaces. The parking demand based on the City Ordinance is higher than the shared parking demand because it assumes all uses will require their peak parking demand concurrently whereas the shared parking demand considers the different uses peaking at different times of day.

It should be noted that a parking facility can be considered full when it is approximately 85% occupied. This is because a driver may not see empty parking spaces when the lot is almost completely occupied, especially in a larger parking area. **To ensure the peak parking demand is satisfied, the recommended number of spaces is 736 (372 spaces / 0.85 + 298 spaces).** This assumes that shared spaces are generally available to all users. The increase is not applied to the dedicated parking spaces because it is assumed that they will be visible and easy for the designated users to find.

The marina may also have additional parking needs, such as temporary parking spaces for visitors to drop off passengers or supplies near their boat before parking their vehicle and for fueling trucks and provisional vehicles that service the mega-yachts. These other parking spaces should be considered in addition to the estimated peak parking demand for the visitors and employees.

Bicycle Parking

Per City Ordinance, new uses are required to provide bicycle accommodations based on the type of use. Residential structures are required to provide 2 bicycle spaces for every 5 dwelling units. Non-residential structures are required to provide 2 bicycle parking spaces for every 10 vehicle parking spaces for the first 100 required spaces, plus one bicycle parking space for every 20 required vehicle parking spaces over the 100 vehicle parking spaces. The following table shows the required bicycle parking for the Ordinance vehicle parking demand and the Shared Parking demand:

Bicycle Parking Summary

	Ordinance	Shared Parking
Parking Variable	409 Spaces, 638 Units	322 Spaces, 638 Units
Residential Bicycle Spaces	256	256
Non-Residential Bicycle Spaces	36	31
Total	**292**	**287**

As shown in the table, the site will require 287-292 bicycle parking spaces to meet the City Ordinance Requirements for bicycle accommodations. The Transportation Demand Management (TDM) plan will outline a more detailed approach to incorporating bicycle parking on site.

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JOB 3138-58 Fore Street Redevelopment
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 8/26/16
CHECKED BY _____ DATE _____
SCALE _____

Marina Trip Generation

Info from ATM:

- 220 slips → 140 seasonal users, 80 transient boaters
- Daily usage peaks around 10%, maybe more
- 10% of daily non-transient users are on-site residents
- 90% of daily non-transient users are offsite residents
- 30% of off site residents are Islanders commuting to the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Assumptions:

- 15% of slips is peak daily usage to be conservative (33 slips)
- 36% are transient boaters (80/220 = 36% → 12 slips)
- 21 non-transient slips used during peak (33 slips − 12 slips)
- 2 on-site residents used slips during peak (21 × 0.10 = 2.1)
- 19 off-site residents use slips during peak (21 × 0.90 = 18.9)
- 6 Islanders commuting to Peninsula (19 × 0.30 = 5.7)
- 1 provisioning vehicle per mega-yacht slip (conservative)
- Transient boaters = 0 trip ends
- On-site residents = 0 trip ends
- Off-site residents = 1 AM trip end, 1 PM trip end
  - Islanders leave during AM and return during PM
  - Other off-site enter during AM and exit during PM
- Employees enter during AM and exit during PM
- Provisioning vehicles enter and exit during the peak hour (conservative)

AM Peak Hour	PM Peak Hour
- 9 employees in	- 9 employees out
- 6 Islanders out	- 6 Islanders in
- 13 seasonal in	- 13 seasonal out
- 4 provisional veh. in	- 4 provisional veh in
- 4 provisional veh. out	- 4 provisional veh out
36 trip ends (26 in / 10 out)	36 trip ends (10 in / 26 out)

Appendix C

Capacity Analysis Results

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4372	4255	4290	4256	4352	4303
Vehs Exited	4367	4259	4271	4246	4370	4301
Starting Vehs	80	85	67	76	91	75
Ending Vehs	85	81	86	86	73	78
Denied Entry Before	1	1	1	2	0	0
Denied Entry After	1	2	0	0	1	0
Travel Distance (mi)	1199	1181	1177	1180	1198	1187
Travel Time (hr)	78.5	76.6	77.1	76.8	79.0	77.6
Total Delay (hr)	33.5	32.1	32.9	32.1	33.8	32.9
Total Stops	5922	5903	5875	5873	6020	5918
Fuel Used (gal)	62.4	61.7	61.0	61.6	62.4	61.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4372	4255	4290	4256	4352	4303
Vehs Exited	4367	4259	4271	4246	4370	4301
Starting Vehs	80	85	67	76	91	75
Ending Vehs	85	81	86	86	73	78
Denied Entry Before	1	1	1	2	0	0
Denied Entry After	1	2	0	0	1	0
Travel Distance (mi)	1199	1181	1177	1180	1198	1187
Travel Time (hr)	78.5	76.6	77.1	76.8	79.0	77.6
Total Delay (hr)	33.5	32.1	32.9	32.1	33.8	32.9
Total Stops	5922	5903	5875	5873	6020	5918
Fuel Used (gal)	62.4	61.7	61.0	61.6	62.4	61.8

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	6.4	7.2	5.3	5.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	6.8	8.0	8.4	6.1	7.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.3	1.1	5.8	6.2	2.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	0.5	0.5	1.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	1.8	0.0
Total Del/Veh (s)	0.6	0.5	5.7	3.8	0.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.0	0.4	0.2	0.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	26.3
Denied Entry Before	0
Denied Entry After	0

7: Congress St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	13.5	15.8	8.1	10.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.1
Total Del/Veh (s)	15.7	9.1	5.8	16.5	10.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.5	1.7	0.2	0.5
Total Del/Veh (s)	10.2	9.0	11.8	10.9	9.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.6	1.3	0.0	0.7
Total Del/Veh (s)	16.5	32.1	16.5	20.2	19.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.8	0.1	0.0	0.0	0.5
Total Del/Veh (s)	11.8	16.0	19.2	17.3	16.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St./Middle St & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.3	0.0	0.2	1.3	0.3
Total Del/Veh (s)	14.9	16.9	15.3	14.1	15.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	61	65	54	137
Average Queue (ft)	40	35	30	68
95th Queue (ft)	59	56	49	116
Link Distance (ft)		495	636	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	9	6		
Queuing Penalty (veh)	8	9		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	119	113	73
Average Queue (ft)	35	53	54	35
95th Queue (ft)	62	94	89	59
Link Distance (ft)	527	351	328	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	22	54	45	61
Average Queue (ft)	2	9	19	24
95th Queue (ft)	14	37	37	49
Link Distance (ft)	351	421	224	227
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	76	34
Average Queue (ft)	29	2
95th Queue (ft)	56	16
Link Distance (ft)	1097	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 100 Fore St & Existing Driveways & Fore

Movement	EB	WB	NB	NW	NW
Directions Served	TR>	<LT	LR	L	R
Maximum Queue (ft)	4	38	59	30	30
Average Queue (ft)	0	4	11	4	3
95th Queue (ft)	3	22	42	20	20
Link Distance (ft)	386	549	182	230	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					25
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	44	30
Average Queue (ft)	20	2
95th Queue (ft)	43	13
Link Distance (ft)	739	549
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	151	151	94	237
Average Queue (ft)	74	73	76	86
95th Queue (ft)	121	129	108	178
Link Distance (ft)	629	351		542
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			9	3
Queuing Penalty (veh)			27	11

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	52	180	139	103	77	195
Average Queue (ft)	17	57	71	38	15	89
95th Queue (ft)	45	130	139	79	49	161
Link Distance (ft)	1097	196		542		386
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		1				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	2	1	0	
Queuing Penalty (veh)		1	2	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	154	251	74	92	120
Average Queue (ft)	64	112	24	37	58
95th Queue (ft)	129	198	52	75	98
Link Distance (ft)	196	557		310	297
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	1				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	0	

Intersection: 11: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	113	96	177	58	145	62	140	175	93	220	126
Average Queue (ft)	38	32	66	29	54	24	59	70	29	119	20
95th Queue (ft)	87	75	140	60	122	60	111	135	72	190	72
Link Distance (ft)		306	306		265			299	299	495	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				28	27	17		0		3	
Queuing Penalty (veh)				20	19	15		0		1	

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	80	95	195	246	82	79	166
Average Queue (ft)	21	50	96	113	31	24	88
95th Queue (ft)	58	89	175	204	65	63	146
Link Distance (ft)	195		247	247	306	306	527
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	4					
Queuing Penalty (veh)	0	2					

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	212	242	128	165	109	106	68
Average Queue (ft)	100	128	60	69	56	37	19
95th Queue (ft)	179	219	108	131	103	80	53
Link Distance (ft)	450	450	247	247	546	292	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							50
Storage Blk Time (%)						6	1
Queuing Penalty (veh)						2	1

Network Summary

Network wide Queuing Penalty: 122

Intersection: 7: Congress St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.8	12.4	11.0	23.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	22	28	30	13
Cycles @ Minimum (%)	4	20	29	18
Cycles Maxed Out (%)	49	0	1	3
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.0	11.5	10.8	35.1	10.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	17	15	33	23	33
Cycles @ Minimum (%)	9	1	23	1	23
Cycles Maxed Out (%)	41	7	10	16	10
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.3	19.2	12.3	19.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	3	11	3
Cycles @ Minimum (%)	1	1	1	1
Cycles Maxed Out (%)	1	36	1	36
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	34.4	12.3	11.1	19.0	8.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	16	13	6	20
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	7	13	17	37	56
Cycles with Peds (%)	26	2	0	24	9

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	21.9	22.1	21.7	22.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	34	10	12	18
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	7	3	9	3
Cycles with Peds (%)	3	58	23	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	24.9	19.0	25.5
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	4	10	22
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	29	0	25
Cycles with Peds (%)	0	31	4

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5799	5806	5781	5983	5683	5815
Vehs Exited	5724	5781	5802	5961	5709	5793
Starting Vehs	119	93	154	124	147	118
Ending Vehs	194	118	133	146	121	135
Denied Entry Before	1	2	0	1	2	0
Denied Entry After	2	2	1	0	1	1
Travel Distance (mi)	1832	1815	1830	1867	1801	1829
Travel Time (hr)	144.5	133.1	129.5	138.7	125.4	134.2
Total Delay (hr)	76.9	66.0	61.9	69.8	58.8	66.7
Total Stops	8918	8862	8600	9035	8563	8790
Fuel Used (gal)	96.2	93.5	92.7	97.3	91.3	94.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5799	5806	5781	5983	5683	5815
Vehs Exited	5724	5781	5802	5961	5709	5793
Starting Vehs	119	93	154	124	147	118
Ending Vehs	194	118	133	146	121	135
Denied Entry Before	1	2	0	1	2	0
Denied Entry After	2	2	1	0	1	1
Travel Distance (mi)	1832	1815	1830	1867	1801	1829
Travel Time (hr)	144.5	133.1	129.5	138.7	125.4	134.2
Total Delay (hr)	76.9	66.0	61.9	69.8	58.8	66.7
Total Stops	8918	8862	8600	9035	8563	8790
Fuel Used (gal)	96.2	93.5	92.7	97.3	91.3	94.2

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.2	8.8	6.6	7.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.1
Total Del/Veh (s)	9.2	8.8	8.9	8.7	8.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.6	0.9	6.5	6.0	2.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	1.1	0.6	1.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	0.6	0.7	7.6	8.8	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.8	0.8	0.2	0.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.6	0.4	0.0	0.4
Total Del/Veh (s)	36.8	22.0	13.9	25.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	32.1	11.5	23.6	28.4	22.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.3	2.2	0.2	0.7
Total Del/Veh (s)	18.0	35.7	14.3	11.1	21.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial/Commercial St & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	4.9	1.5	0.2	1.2
Total Del/Veh (s)	17.1	45.1	18.8	22.5	22.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	1	0	1

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.7	0.1	0.0	0.1	0.7
Total Del/Veh (s)	16.0	20.2	19.5	20.6	19.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.0	0.0	0.4	1.9	0.7
Total Del/Veh (s)	25.5	18.6	22.2	12.2	20.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	39.4
Denied Entry Before	0
Denied Entry After	1

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	70	62	119	68
Average Queue (ft)	34	51	53	36
95th Queue (ft)	53	66	93	56
Link Distance (ft)	230		495	666
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		18	9	
Queuing Penalty (veh)		24	21	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	110	116	105
Average Queue (ft)	53	49	47	54
95th Queue (ft)	92	85	84	90
Link Distance (ft)	516	340	273	230
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	22	47	36	92
Average Queue (ft)	1	6	16	41
95th Queue (ft)	10	26	35	73
Link Distance (ft)	340	418	194	210
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	52	58
Average Queue (ft)	19	10
95th Queue (ft)	41	39
Link Distance (ft)	1093	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 100 Fore St & Existing Driveways & Fore

Movement	EB	WB	NB	NW	NW
Directions Served	TR>	<LT	LR	L	R
Maximum Queue (ft)	4	52	57	40	32
Average Queue (ft)	0	7	23	16	5
95th Queue (ft)	3	30	49	42	25
Link Distance (ft)	394	536	232	256	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					25
Storage Blk Time (%)				4	1
Queuing Penalty (veh)				0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	44	49
Average Queue (ft)	19	5
95th Queue (ft)	42	27
Link Distance (ft)	792	536
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	630	291	94	208
Average Queue (ft)	263	156	68	86
95th Queue (ft)	517	256	106	162
Link Distance (ft)	1066	318		534
Upstream Blk Time (%)	1	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			7	9
Queuing Penalty (veh)			16	15

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	210	164	134	518	100	221
Average Queue (ft)	84	47	43	205	70	98
95th Queue (ft)	167	114	107	470	132	174
Link Distance (ft)	1093	199		534		330
Upstream Blk Time (%)		0		2		0
Queuing Penalty (veh)		0		12		0
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	1	28	1	
Queuing Penalty (veh)		2	1	55	4	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	219	524	104	168	87
Average Queue (ft)	176	197	66	78	40
95th Queue (ft)	255	409	111	143	73
Link Distance (ft)	199	1555		234	264
Upstream Blk Time (%)	12				
Queuing Penalty (veh)	76				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			4	4	
Queuing Penalty (veh)			9	8	

Intersection: 11: Commercial/Commercial St & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	77	102	168	58	155	57	183	267	44	225	175
Average Queue (ft)	30	49	62	28	91	34	100	93	14	95	37
95th Queue (ft)	68	96	128	63	154	66	168	191	33	175	92
Link Distance (ft)		308	308		133			300	300	495	
Upstream Blk Time (%)					9			0			
Queuing Penalty (veh)					0			0			
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				19	56	24	2	1		3	0
Queuing Penalty (veh)				25	41	33	5	2		2	0

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	206	100	254	219	152	135	245
Average Queue (ft)	86	80	127	113	65	43	122
95th Queue (ft)	186	115	216	204	129	107	211
Link Distance (ft)	193		240	240	308	308	516
Upstream Blk Time (%)	1		0	0			
Queuing Penalty (veh)	0		1	1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	3	13					
Queuing Penalty (veh)	9	22					

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	297	280	179	205	256	159	75
Average Queue (ft)	167	127	102	115	145	61	40
95th Queue (ft)	292	239	165	185	226	122	81
Link Distance (ft)	309	309	240	240	546	468	
Upstream Blk Time (%)	3	1		0			
Queuing Penalty (veh)	0	0		0			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						16	1
Queuing Penalty (veh)						19	3

Network Summary

Network wide Queuing Penalty: 408

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	7.7	19.2	23.0	28.7
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	22	0	0	0
Cycles @ Minimum (%)	0	2	0	9
Cycles Maxed Out (%)	21	11	71	3
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	18.9	13.4	13.1	35.8	13.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	3	11	7	5	7
Cycles @ Minimum (%)	3	0	9	0	9
Cycles Maxed Out (%)	79	20	45	21	45
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	17.6	24.4	17.6	24.4
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	18	86	18	86
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial/Commercial St & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	40.4	13.6	13.1	22.4	9.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	2	4	2	2	4
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	30	22	39	73	84
Cycles with Peds (%)	77	9	0	69	13

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	28.4	28.9	28.0	29.4
g/C Ratio	-0.01	NA	NA	-0.01
Cycles Skipped (%)	6	0	0	10
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	35	35	35	33
Cycles with Peds (%)	12	88	47	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	31.3	30.7	31.0
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	65	40	65
Cycles with Peds (%)	2	58	8

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4306	4311	4350	4310	4320	4314
Vehs Exited	4326	4293	4361	4319	4335	4325
Starting Vehs	98	59	93	83	77	75
Ending Vehs	78	77	82	74	62	68
Denied Entry Before	0	1	0	0	2	0
Denied Entry After	2	0	0	0	1	0
Travel Distance (mi)	1221	1211	1209	1207	1223	1214
Travel Time (hr)	74.9	74.9	75.4	74.2	74.4	74.8
Total Delay (hr)	25.5	26.0	26.4	25.4	24.9	25.7
Total Stops	5307	5221	5247	5132	5159	5209
Fuel Used (gal)	56.0	56.3	56.5	56.0	56.2	56.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4306	4311	4350	4310	4320	4314
Vehs Exited	4326	4293	4361	4319	4335	4325
Starting Vehs	98	59	93	83	77	75
Ending Vehs	78	77	82	74	62	68
Denied Entry Before	0	1	0	0	2	0
Denied Entry After	2	0	0	0	1	0
Travel Distance (mi)	1221	1211	1209	1207	1223	1214
Travel Time (hr)	74.9	74.9	75.4	74.2	74.4	74.8
Total Delay (hr)	25.5	26.0	26.4	25.4	24.9	25.7
Total Stops	5307	5221	5247	5132	5159	5209
Fuel Used (gal)	56.0	56.3	56.5	56.0	56.2	56.2

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.9	7.1	4.9	5.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	7.7	8.2	8.1	6.1	7.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.4	1.2	6.2	5.6	2.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.4	0.6	0.5	1.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	2.7	0.0
Total Del/Veh (s)	0.6	0.5	7.0	5.6	0.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.9	0.5	0.3	0.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St & India Street Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	13.5	13.8	7.0	9.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	22.7	8.4	5.5	15.4	9.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.5	1.7	0.2	0.6
Total Del/Veh (s)	12.1	10.2	12.7	10.8	11.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.4	0.0	0.1
Total Del/Veh (s)	4.9	2.9	3.7	3.0	3.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.3	0.2
Total Del/Veh (s)	18.4	17.8	19.5	13.5	16.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.2	0.1	1.0	0.7	0.8
Total Del/Veh (s)	9.2	5.8	22.8	22.0	11.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	20.4
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	61	58	46	125
Average Queue (ft)	37	32	27	59
95th Queue (ft)	54	48	47	98
Link Distance (ft)		456	600	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	9	6		
Queuing Penalty (veh)	8	9		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	105	112	76
Average Queue (ft)	33	50	55	36
95th Queue (ft)	67	87	90	59
Link Distance (ft)	522	343	214	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	23	55	38	70
Average Queue (ft)	1	9	19	25
95th Queue (ft)	10	34	38	54
Link Distance (ft)	343	416	197	162
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	70	57	13
Average Queue (ft)	28	4	0
95th Queue (ft)	56	28	6
Link Distance (ft)	1091	416	383
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Existing Driveways & Fore

Movement	WB	NB	NW	NW
Directions Served	<LT	LR	L	R
Maximum Queue (ft)	39	56	21	34
Average Queue (ft)	3	9	2	4
95th Queue (ft)	21	36	13	20
Link Distance (ft)	552	180	299	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	38	34
Average Queue (ft)	16	4
95th Queue (ft)	40	20
Link Distance (ft)	545	552
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St & India Street

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	139	173	119	193
Average Queue (ft)	72	70	77	69
95th Queue (ft)	119	127	124	145
Link Distance (ft)	383	255		540
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			7	3
Queuing Penalty (veh)			20	11

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	66	179	140	121	70	151
Average Queue (ft)	19	51	70	35	16	84
95th Queue (ft)	53	114	135	77	51	138
Link Distance (ft)	1091	208		540		279
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	2	1	0	
Queuing Penalty (veh)		0	2	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	213	274	76	112	120
Average Queue (ft)	69	120	27	44	60
95th Queue (ft)	152	215	58	84	104
Link Distance (ft)	208	707		313	242
Upstream Blk Time (%)	1				
Queuing Penalty (veh)	2				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	0	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	124	73	128	58
Average Queue (ft)	48	27	33	24
95th Queue (ft)	103	66	84	53
Link Distance (ft)	312	108	714	456
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	95	123	39	159	51	206	124	254
Average Queue (ft)	36	58	4	85	9	75	58	130
95th Queue (ft)	73	104	23	148	35	152	126	234
Link Distance (ft)	230	230		522		312		239
Upstream Blk Time (%)								1
Queuing Penalty (veh)								4
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				7		7	3	18
Queuing Penalty (veh)				0		1	12	23

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	149	346	62	166	57	115	76	136
Average Queue (ft)	40	152	17	59	18	53	19	55
95th Queue (ft)	111	268	49	128	47	98	56	103
Link Distance (ft)		442		239		551		477
Upstream Blk Time (%)				0				
Queuing Penalty (veh)				0				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	0	11	2	8		0	6	15
Queuing Penalty (veh)	0	10	5	2		0	7	3

Network Summary

Network wide Queuing Penalty: 119

Intersection: 7: Congress St & India Street

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.3	12.5	10.4	23.1
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	26	26	33	15
Cycles @ Minimum (%)	4	19	32	19
Cycles Maxed Out (%)	47	0	0	2
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.1	11.3	10.6	33.8	10.6
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	20	17	30	22	30
Cycles @ Minimum (%)	8	0	23	0	23
Cycles Maxed Out (%)	42	8	10	15	10
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.8	19.7	12.8	19.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	9	1	9	1
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	2	41	2	41
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	3	4	6	7	8
Movement(s) Served	SBTL	EBL	WBT	NBTL	WBL	EBT
Maximum Green (s)	24.0	6.0	25.0	24.0	5.0	26.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None	None	None
Avg. Green (s)	28.2	7.8	17.0	24.5	7.6	22.5
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	5	35	5	18	94	2
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	95	12	13	49	0	33
Cycles with Peds (%)	46	0	64	23	0	88

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	43.0	17.0	42.5	17.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	Min	None	C-Max	None
Avg. Green (s)	47.1	12.9	46.6	12.9
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	20	100	20
Cycles with Peds (%)	6	41	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5963	5923	5791	5819	5881	5882
Vehs Exited	5930	5908	5822	5820	5894	5875
Starting Vehs	120	107	128	124	146	117
Ending Vehs	153	122	97	123	133	121
Denied Entry Before	0	0	0	0	2	0
Denied Entry After	2	1	0	2	1	0
Travel Distance (mi)	1877	1890	1857	1855	1884	1873
Travel Time (hr)	138.8	129.3	126.8	131.2	130.4	131.3
Total Delay (hr)	63.1	53.3	51.8	56.3	54.2	55.7
Total Stops	8193	8117	8171	7843	8375	8143
Fuel Used (gal)	88.9	87.1	85.5	86.5	87.5	87.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5963	5923	5791	5819	5881	5882
Vehs Exited	5930	5908	5822	5820	5894	5875
Starting Vehs	120	107	128	124	146	117
Ending Vehs	153	122	97	123	133	121
Denied Entry Before	0	0	0	0	2	0
Denied Entry After	2	1	0	2	1	0
Travel Distance (mi)	1877	1890	1857	1855	1884	1873
Travel Time (hr)	138.8	129.3	126.8	131.2	130.4	131.3
Total Delay (hr)	63.1	53.3	51.8	56.3	54.2	55.7
Total Stops	8193	8117	8171	7843	8375	8143
Fuel Used (gal)	88.9	87.1	85.5	86.5	87.5	87.1

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.1	6.7	6.7	6.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	11.3	9.2	8.4	8.0	9.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.6	1.0	6.5	6.2	2.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	0.9	0.6	1.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	0.6	0.5	6.8	8.9	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.3	0.9	0.2	0.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5963	5923	5791	5819	5881	5882
Vehs Exited	5930	5908	5822	5820	5894	5875
Starting Vehs	120	107	128	124	146	117
Ending Vehs	153	122	97	123	133	121
Denied Entry Before	0	0	0	0	2	0
Denied Entry After	2	1	0	2	1	0
Travel Distance (mi)	1877	1890	1857	1855	1884	1873
Travel Time (hr)	138.8	129.3	126.8	131.2	130.4	131.3
Total Delay (hr)	63.1	53.3	51.8	56.3	54.2	55.7
Total Stops	8193	8117	8171	7843	8375	8143
Fuel Used (gal)	88.9	87.1	85.5	86.5	87.5	87.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5963	5923	5791	5819	5881	5882
Vehs Exited	5930	5908	5822	5820	5894	5875
Starting Vehs	120	107	128	124	146	117
Ending Vehs	153	122	97	123	133	121
Denied Entry Before	0	0	0	0	2	0
Denied Entry After	2	1	0	2	1	0
Travel Distance (mi)	1877	1890	1857	1855	1884	1873
Travel Time (hr)	138.8	129.3	126.8	131.2	130.4	131.3
Total Delay (hr)	63.1	53.3	51.8	56.3	54.2	55.7
Total Stops	8193	8117	8171	7843	8375	8143
Fuel Used (gal)	88.9	87.1	85.5	86.5	87.5	87.1

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	5.1	6.7	6.7	6.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	11.3	9.2	8.4	8.0	9.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.6	1.0	6.5	6.2	2.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	0.9	0.6	1.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	0.6	0.5	6.8	8.9	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.3	0.9	0.2	0.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.8	0.4	0.0	0.5
Total Del/Veh (s)	40.7	24.4	13.6	27.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	24.3	10.8	18.7	23.4	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	1.8	2.2	0.2	1.1
Total Del/Veh (s)	16.2	41.0	13.9	11.2	21.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.5	0.1	0.2
Total Del/Veh (s)	3.7	3.9	4.7	4.1	4.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.5	0.1	0.1	0.2	0.5
Total Del/Veh (s)	30.0	17.2	12.9	13.2	18.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.2	0.1	1.8	0.7	0.9
Total Del/Veh (s)	17.2	12.6	19.0	12.0	15.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.8	0.4	0.0	0.5
Total Del/Veh (s)	40.7	24.4	13.6	27.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	24.3	10.8	18.7	23.4	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	1.8	2.2	0.2	1.1
Total Del/Veh (s)	16.2	41.0	13.9	11.2	21.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.5	0.1	0.2
Total Del/Veh (s)	3.7	3.9	4.7	4.1	4.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.5	0.1	0.1	0.2	0.5
Total Del/Veh (s)	30.0	17.2	12.9	13.2	18.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.2	0.1	1.8	0.7	0.9
Total Del/Veh (s)	17.2	12.6	19.0	12.0	15.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	32.5
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	58	66	88	55
Average Queue (ft)	33	43	40	35
95th Queue (ft)	48	63	68	53
Link Distance (ft)	225		455	750
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		17	8	
Queuing Penalty (veh)		22	20	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	154	106	116	103
Average Queue (ft)	55	47	54	50
95th Queue (ft)	112	85	96	82
Link Distance (ft)	527	335	167	225
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	51	44	90
Average Queue (ft)	2	8	20	41
95th Queue (ft)	16	34	39	72
Link Distance (ft)	335	421	286	217
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	60	56
Average Queue (ft)	22	10
95th Queue (ft)	42	37
Link Distance (ft)	1093	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 100 Fore St & Existing Driveways & Fore

Movement	WB	NB	NW	NW
Directions Served	<LT	LR	L	R
Maximum Queue (ft)	35	55	36	38
Average Queue (ft)	4	22	15	6
95th Queue (ft)	22	46	38	27
Link Distance (ft)	539	299	247	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			5	1
Queuing Penalty (veh)			0	0

Intersection: 6: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	35	48
Average Queue (ft)	17	5
95th Queue (ft)	39	28
Link Distance (ft)	662	539
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	586	320	119	239
Average Queue (ft)	280	170	70	82
95th Queue (ft)	543	281	116	173
Link Distance (ft)	836	467		533
Upstream Blk Time (%)	2	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			10	7
Queuing Penalty (veh)			23	12

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	145	130	125	510	100	196
Average Queue (ft)	71	41	39	183	71	97
95th Queue (ft)	124	93	102	412	132	162
Link Distance (ft)	1093	194		533		396
Upstream Blk Time (%)		0		1		
Queuing Penalty (veh)		0		6		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	0	24	1	
Queuing Penalty (veh)		1	0	48	6	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	216	522	104	169	90
Average Queue (ft)	172	206	64	68	40
95th Queue (ft)	246	517	107	131	74
Link Distance (ft)	194	915		255	233
Upstream Blk Time (%)	9	2		0	
Queuing Penalty (veh)	61	0		0	
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			5	3	
Queuing Penalty (veh)			9	6	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	100	93	151	84
Average Queue (ft)	37	36	52	34
95th Queue (ft)	79	74	110	65
Link Distance (ft)	309	108	714	455
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	244	225	65	169	118	155	124	248
Average Queue (ft)	104	97	12	96	41	81	60	103
95th Queue (ft)	206	182	43	155	85	135	121	195
Link Distance (ft)	231	231		527		309		248
Upstream Blk Time (%)	5	3						0
Queuing Penalty (veh)	0	0						2
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				10	1	5	3	11
Queuing Penalty (veh)				1	4	3	16	16

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	149	324	89	253	151	202	80	142
Average Queue (ft)	64	164	46	128	68	70	22	72
95th Queue (ft)	133	265	89	218	122	139	57	118
Link Distance (ft)		689		248		543		409
Upstream Blk Time (%)				0				
Queuing Penalty (veh)				1				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	3	19	13	31	2	0	2	18
Queuing Penalty (veh)	21	19	70	19	6	1	5	6

Network Summary

Network wide Queuing Penalty: 404

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	8.0	19.7	23.5	30.4
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	16	0	0	0
Cycles @ Minimum (%)	0	4	2	5
Cycles Maxed Out (%)	27	14	79	4
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	19.1	13.3	12.8	36.0	12.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	4	10	9	6	9
Cycles @ Minimum (%)	1	0	12	0	12
Cycles Maxed Out (%)	75	16	41	19	41
Cycles with Peds (%)	0	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	17.4	24.0	17.4	24.0
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	18	78	18	78
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	4	6	8
Movement(s) Served	SBTL	WBTL	NBTL	EBTL
Maximum Green (s)	20.0	15.0	20.0	15.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	C-Min	None
Avg. Green (s)	20.3	14.9	20.3	15.0
g/C Ratio	-0.01	-0.01	NA	NA
Cycles Skipped (%)	4	5	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	80	94	100	97
Cycles with Peds (%)	37	53	24	80

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	21.0	14.0	20.5	14.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None
Avg. Green (s)	21.5	13.5	21.0	13.5
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	75	88	75
Cycles with Peds (%)	4	28	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4815	4838	4837	4724	4790	4799
Vehs Exited	4793	4819	4796	4697	4775	4778
Starting Vehs	97	86	87	88	94	86
Ending Vehs	119	105	128	115	109	107
Denied Entry Before	0	1	2	0	2	0
Denied Entry After	4	4	2	1	3	2
Travel Distance (mi)	1476	1477	1486	1413	1477	1466
Travel Time (hr)	97.7	97.4	98.0	94.5	96.3	96.8
Total Delay (hr)	43.0	42.6	42.8	41.9	41.8	42.4
Total Stops	7280	7197	7252	7040	7185	7193
Fuel Used (gal)	75.2	75.1	75.5	72.6	74.7	74.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4815	4838	4837	4724	4790	4799
Vehs Exited	4793	4819	4796	4697	4775	4778
Starting Vehs	97	86	87	88	94	86
Ending Vehs	119	105	128	115	109	107
Denied Entry Before	0	1	2	0	2	0
Denied Entry After	4	4	2	1	3	2
Travel Distance (mi)	1476	1477	1486	1413	1477	1466
Travel Time (hr)	97.7	97.4	98.0	94.5	96.3	96.8
Total Delay (hr)	43.0	42.6	42.8	41.9	41.8	42.4
Total Stops	7280	7197	7252	7040	7185	7193
Fuel Used (gal)	75.2	75.1	75.5	72.6	74.7	74.6

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	7.5	8.0	5.6	6.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	9.1	9.5	9.7	7.0	9.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.7	1.3	6.1	6.2	2.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.6	0.6	0.7	1.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.8	0.7	6.4	1.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.9	5.4	0.5	0.3	1.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.5	0.4
Total Del/Veh (s)	14.6	15.8	9.2	11.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	22.6	9.0	5.9	15.8	10.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.5	1.6	0.2	0.5
Total Del/Veh (s)	10.2	11.3	11.4	11.3	11.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.6	1.2	0.0	0.6
Total Del/Veh (s)	19.6	36.2	18.5	23.6	22.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	1	0	1

23: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	4.5	2.8	0.3	2.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	3.0	0.2	0.0	0.0	0.6
Total Del/Veh (s)	15.0	19.3	17.7	18.4	18.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St./Middle St & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.4	0.0	0.2	1.4	0.4
Total Del/Veh (s)	16.3	16.5	17.7	14.9	16.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	1	0	0	0	1

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	30.5
Denied Entry Before	0
Denied Entry After	2

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	67	105	80	147
Average Queue (ft)	46	48	41	66
95th Queue (ft)	65	80	64	109
Link Distance (ft)		495	1144	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	11	13		
Queuing Penalty (veh)	20	18		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	134	163	139	103
Average Queue (ft)	52	61	62	44
95th Queue (ft)	93	114	102	76
Link Distance (ft)	527	351	328	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	37	54	27	63
Average Queue (ft)	4	11	16	26
95th Queue (ft)	22	40	32	50
Link Distance (ft)	351	421	224	227
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	79	59
Average Queue (ft)	35	5
95th Queue (ft)	66	30
Link Distance (ft)	1097	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	48	36
Average Queue (ft)	0	5	17
95th Queue (ft)	3	27	39
Link Distance (ft)	398	555	328
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	48	24
Average Queue (ft)	19	25	2
95th Queue (ft)	41	48	13
Link Distance (ft)	739	228	555
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	157	158	94	253
Average Queue (ft)	76	80	81	112
95th Queue (ft)	138	137	112	217
Link Distance (ft)	629	351		542
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			12	6
Queuing Penalty (veh)			42	24

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	83	188	140	108	94	165
Average Queue (ft)	29	61	76	39	22	81
95th Queue (ft)	67	140	146	82	65	141
Link Distance (ft)	1097	196		542		386
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		1				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	3	1	0	
Queuing Penalty (veh)		2	4	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	164	303	63	88	121
Average Queue (ft)	62	134	24	40	62
95th Queue (ft)	131	245	53	77	108
Link Distance (ft)	196	815		310	297
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	1				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	0	

Intersection: 11: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	186	104	151	57	149	65	166	243	103	310	175
Average Queue (ft)	83	38	62	30	55	28	68	80	27	136	65
95th Queue (ft)	151	86	120	60	129	62	136	171	71	244	149
Link Distance (ft)		306	306		265			299	299	495	
Upstream Blk Time (%)								0			
Queuing Penalty (veh)								0			
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)	0			27	28	17	0	1		6	0
Queuing Penalty (veh)	0			19	20	16	1	1		6	0

Intersection: 23: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	32
95th Queue (ft)	47
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	174	99	262	220	118	99	207
Average Queue (ft)	27	65	166	115	38	34	103
95th Queue (ft)	96	102	257	202	84	81	171
Link Distance (ft)	195		247	247	306	306	527
Upstream Blk Time (%)	0		1	0			
Queuing Penalty (veh)	0		5	0			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	7					
Queuing Penalty (veh)	0	4					

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	308	274	154	156	168	119	71
Average Queue (ft)	151	127	68	77	63	38	19
95th Queue (ft)	259	224	127	138	125	87	55
Link Distance (ft)	450	450	247	247	546	292	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							50
Storage Blk Time (%)						6	1
Queuing Penalty (veh)						2	1

Network Summary

Network wide Queuing Penalty: 189

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.8	12.9	11.0	25.4
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	20	27	26	16
Cycles @ Minimum (%)	3	17	32	13
Cycles Maxed Out (%)	48	0	1	4
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.1	11.2	11.5	31.2	11.5
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	20	15	25	15	25
Cycles @ Minimum (%)	9	1	21	0	21
Cycles Maxed Out (%)	42	5	19	11	19
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.8	19.9	12.8	19.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	10	2	10	2
Cycles @ Minimum (%)	0	1	0	1
Cycles Maxed Out (%)	2	40	2	40
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 11: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	37.0	14.6	10.9	20.5	8.8
g/C Ratio	-0.01	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	10	6	6	0	17
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	8	27	19	52	60
Cycles with Peds (%)	23	6	0	33	10

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	27.5	23.8	27.0	23.4
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	17	3	3	7
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	33	5	34	5
Cycles with Peds (%)	2	64	29	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	27.8	19.1	28.8
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	3	8	17
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	48	2	45
Cycles with Peds (%)	0	33	3

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4789	4835	4867	4894	4853	4848
Vehs Exited	4784	4839	4878	4890	4846	4848
Starting Vehs	88	102	94	96	87	85
Ending Vehs	93	98	83	100	94	80
Denied Entry Before	3	0	0	2	7	2
Denied Entry After	1	1	1	0	0	0
Travel Distance (mi)	1495	1503	1514	1502	1497	1502
Travel Time (hr)	96.8	95.6	98.2	97.4	95.6	96.7
Total Delay (hr)	36.9	35.3	37.4	37.1	35.7	36.5
Total Stops	6756	6641	6825	6867	6708	6765
Fuel Used (gal)	70.3	69.9	70.3	70.5	69.9	70.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4789	4835	4867	4894	4853	4848
Vehs Exited	4784	4839	4878	4890	4846	4848
Starting Vehs	88	102	94	96	87	85
Ending Vehs	93	98	83	100	94	80
Denied Entry Before	3	0	0	2	7	2
Denied Entry After	1	1	1	0	0	0
Travel Distance (mi)	1495	1503	1514	1502	1497	1502
Travel Time (hr)	96.8	95.6	98.2	97.4	95.6	96.7
Total Delay (hr)	36.9	35.3	37.4	37.1	35.7	36.5
Total Stops	6756	6641	6825	6867	6708	6765
Fuel Used (gal)	70.3	69.9	70.3	70.5	69.9	70.2

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	6.0	8.0	5.5	6.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	10.8	10.4	10.2	7.2	10.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.8	1.3	6.8	6.9	2.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.5	0.6	0.7	1.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	0.7	5.9	1.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.3	5.3	0.7	0.3	1.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.3	0.2	0.2	0.2
Total Del/Veh (s)	13.5	15.3	9.8	11.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.1
Total Del/Veh (s)	18.5	9.3	6.2	16.4	10.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.5	1.6	0.2	0.5
Total Del/Veh (s)	14.5	11.3	12.2	11.7	12.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.4	0.0	0.1
Total Del/Veh (s)	5.6	3.1	3.8	3.7	4.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

23: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	4.6	2.9	0.2	2.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.1	0.5	0.3
Total Del/Veh (s)	18.5	21.2	17.1	17.1	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	2.5	0.1	1.0	0.8	1.6
Total Del/Veh (s)	17.1	6.3	23.0	19.7	15.0
Denied Entry Before	2	0	0	0	2
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	25.7
Denied Entry Before	2
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	59	61	89	127
Average Queue (ft)	38	36	43	62
95th Queue (ft)	54	54	68	104
Link Distance (ft)		456	1088	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	10	12		
Queuing Penalty (veh)	19	17		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	133	137	155	85
Average Queue (ft)	56	63	65	42
95th Queue (ft)	104	110	116	70
Link Distance (ft)	522	343	214	222
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	55	52	67
Average Queue (ft)	3	12	19	28
95th Queue (ft)	19	41	41	54
Link Distance (ft)	343	416	197	162
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	96	48
Average Queue (ft)	36	5
95th Queue (ft)	70	26
Link Distance (ft)	1091	416
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	4	53	57	37
Average Queue (ft)	0	5	18	4
95th Queue (ft)	4	28	42	23
Link Distance (ft)	405	545	347	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			4	0
Queuing Penalty (veh)			0	0

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	47	64	38
Average Queue (ft)	18	28	4
95th Queue (ft)	42	56	22
Link Distance (ft)	545	135	545
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	165	144	119	255
Average Queue (ft)	82	72	95	88
95th Queue (ft)	138	129	136	185
Link Distance (ft)	383	632		540
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			15	3
Queuing Penalty (veh)			44	13

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	90	195	140	104	89	165
Average Queue (ft)	30	65	74	42	16	88
95th Queue (ft)	69	150	147	85	53	144
Link Distance (ft)	1091	208		540		279
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		2				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	3	1	0	
Queuing Penalty (veh)		2	4	1	0	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	215	324	66	108	132
Average Queue (ft)	77	132	25	40	61
95th Queue (ft)	171	249	54	80	103
Link Distance (ft)	208	719		313	242
Upstream Blk Time (%)	2				
Queuing Penalty (veh)	5				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	1	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	156	113	120	93
Average Queue (ft)	66	32	41	31
95th Queue (ft)	127	78	89	65
Link Distance (ft)	312	108	714	456
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	76
Average Queue (ft)	32
95th Queue (ft)	55
Link Distance (ft)	347
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	100	153	64	247	64	215	125	264
Average Queue (ft)	40	70	9	115	15	85	94	182
95th Queue (ft)	81	129	48	205	47	161	151	288
Link Distance (ft)	230	230		522		312		239
Upstream Blk Time (%)						0		4
Queuing Penalty (veh)						1		25
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				14		9	13	24
Queuing Penalty (veh)				1		2	70	52

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	150	459	59	195	57	139	91	133
Average Queue (ft)	59	264	17	80	22	62	20	50
95th Queue (ft)	149	457	47	159	53	113	61	101
Link Distance (ft)		428		239		553		477
Upstream Blk Time (%)		5						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	0	26	3	11		1	5	11
Queuing Penalty (veh)	1	23	10	3		0	6	2

Network Summary

Network wide Queuing Penalty: 303

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	Min	Min	None
Avg. Green (s)	9.2	10.8	11.5	23.8
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	9	0	0	0
Cycles @ Minimum (%)	0	42	37	6
Cycles Maxed Out (%)	61	0	1	0
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	20.0	15.0	44.0	15.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.4	11.4	10.8	32.0	10.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	16	14	22	13	22
Cycles @ Minimum (%)	7	1	22	0	22
Cycles Maxed Out (%)	49	6	11	12	11
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	25.0	25.0	25.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	12.6	20.9	12.6	20.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	8	1	8	1
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	2	51	2	51
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	3	4	6	7	8
Movement(s) Served	SBTL	EBL	WBT	NBTL	WBL	EBT
Maximum Green (s)	24.0	6.0	25.0	24.0	5.0	26.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None	None	None
Avg. Green (s)	31.3	6.8	18.6	29.7	5.9	24.5
g/C Ratio	NA	-0.01	-0.01	-0.01	-0.01	NA
Cycles Skipped (%)	0	31	4	7	90	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	100	31	23	80	6	42
Cycles with Peds (%)	49	0	64	30	0	91

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	43.0	17.0	42.5	17.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	Min	None	C-Max	None
Avg. Green (s)	47.9	13.2	47.4	13.2
g/C Ratio	NA	-0.01	NA	-0.01
Cycles Skipped (%)	0	2	0	2
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	27	100	27
Cycles with Peds (%)	4	37	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6346	6351	6303	6415	6154	6311
Vehs Exited	6297	6280	6240	6357	6163	6267
Starting Vehs	138	168	162	162	151	152
Ending Vehs	187	239	225	220	142	194
Denied Entry Before	1	6	0	2	2	2
Denied Entry After	3	2	1	0	1	1
Travel Distance (mi)	2552	2569	2537	2613	2514	2557
Travel Time (hr)	179.2	220.9	183.5	185.8	160.1	185.9
Total Delay (hr)	89.2	130.4	93.9	93.7	71.2	95.7
Total Stops	10599	11303	10808	10698	10109	10697
Fuel Used (gal)	123.3	132.7	122.6	126.6	116.6	124.4

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6346	6351	6303	6415	6154	6311
Vehs Exited	6297	6280	6240	6357	6163	6267
Starting Vehs	138	168	162	162	151	152
Ending Vehs	187	239	225	220	142	194
Denied Entry Before	1	6	0	2	2	2
Denied Entry After	3	2	1	0	1	1
Travel Distance (mi)	2552	2569	2537	2613	2514	2557
Travel Time (hr)	179.2	220.9	183.5	185.8	160.1	185.9
Total Delay (hr)	89.2	130.4	93.9	93.7	71.2	95.7
Total Stops	10599	11303	10808	10698	10109	10697
Fuel Used (gal)	123.3	132.7	122.6	126.6	116.6	124.4

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1
Total Del/Veh (s)	5.7	9.4	8.9	8.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.1
Total Del/Veh (s)	14.6	11.5	10.0	10.3	12.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.9	1.1	7.9	7.6	3.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.0	1.1	0.7	1.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.1	0.3	7.5	1.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.7	6.7	1.3	0.3	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.4	0.0	0.3
Total Del/Veh (s)	24.4	24.1	14.8	21.4
Denied Entry Before	1	0	0	1
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.3	0.1
Total Del/Veh (s)	19.0	10.2	10.9	15.7	12.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.4	2.2	0.2	0.7
Total Del/Veh (s)	10.0	18.4	15.8	11.4	13.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial/Commercial St & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.0	1.4	0.3	0.8
Total Del/Veh (s)	19.3	51.3	19.7	20.8	23.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

18: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	5.3	2.9	0.5	2.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	3.2	1.1	0.0	0.1	1.1
Total Del/Veh (s)	19.8	35.4	23.3	25.5	27.0
Denied Entry Before	1	0	0	0	1
Denied Entry After	1	0	0	0	1

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.0	0.4	1.8	0.5
Total Del/Veh (s)	117.3	20.9	26.6	15.2	57.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	52.3
Denied Entry Before	2
Denied Entry After	1

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	63	67	138	132
Average Queue (ft)	37	52	60	56
95th Queue (ft)	56	68	105	90
Link Distance (ft)	230		495	1115
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		20	16	
Queuing Penalty (veh)		42	38	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	206	136	94	140
Average Queue (ft)	86	65	50	68
95th Queue (ft)	162	112	82	114
Link Distance (ft)	515	340	312	230
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	62	40	126
Average Queue (ft)	2	10	17	45
95th Queue (ft)	16	38	35	86
Link Distance (ft)	340	418	194	210
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	70	92
Average Queue (ft)	25	15
95th Queue (ft)	51	52
Link Distance (ft)	1093	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	4	12	47	34
Average Queue (ft)	0	0	19	3
95th Queue (ft)	3	6	37	18
Link Distance (ft)	414	532	339	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			8	0
Queuing Penalty (veh)			0	0

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	48	44	11
Average Queue (ft)	16	18	7	1
95th Queue (ft)	40	44	30	7
Link Distance (ft)	792	375	532	383
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	407	275	94	222
Average Queue (ft)	219	155	73	99
95th Queue (ft)	367	252	106	184
Link Distance (ft)	1063	578		534
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			10	8
Queuing Penalty (veh)			24	16

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	160	97	125	330	100	174
Average Queue (ft)	66	43	48	118	62	78
95th Queue (ft)	122	83	103	259	120	139
Link Distance (ft)	1093	199		534		330
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				1		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	0	13	0	
Queuing Penalty (veh)		0	0	26	2	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	218	365	104	168	96
Average Queue (ft)	127	130	67	74	41
95th Queue (ft)	210	276	108	137	75
Link Distance (ft)	199	1237		234	264
Upstream Blk Time (%)	2				
Queuing Penalty (veh)	14				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			6	3	
Queuing Penalty (veh)			12	7	

Intersection: 11: Commercial/Commercial St & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	158	128	164	58	213	61	180	239	39	267	175
Average Queue (ft)	67	47	66	30	98	35	96	88	14	126	69
95th Queue (ft)	131	97	131	64	189	65	157	173	32	228	147
Link Distance (ft)		308	308		368			855	855	495	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)	0			26	54	32	1	0		5	0
Queuing Penalty (veh)	0			35	40	45	4	1		11	0

Intersection: 18: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	61
Average Queue (ft)	30
95th Queue (ft)	47
Link Distance (ft)	339
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	208	100	272	266	194	191	272
Average Queue (ft)	114	88	210	136	93	76	150
95th Queue (ft)	225	116	302	256	162	152	242
Link Distance (ft)	193		240	240	308	308	515
Upstream Blk Time (%)	4		13	2			
Queuing Penalty (veh)	0		46	6			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	5	23					
Queuing Penalty (veh)	15	39					

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	950	919	225	240	364	190	75
Average Queue (ft)	571	523	127	136	147	74	42
95th Queue (ft)	1179	1151	209	214	272	155	83
Link Distance (ft)	1409	1409	240	240	543	468	
Upstream Blk Time (%)	2	1	0	0			
Queuing Penalty (veh)	0	0	1	2			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						20	2
Queuing Penalty (veh)						25	3

Network Summary

Network wide Queuing Penalty: 454

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	4.0	17.0	24.0	26.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	4.4	15.9	21.9	22.7
g/C Ratio	-0.01	-0.01	-0.01	NA
Cycles Skipped (%)	21	3	2	0
Cycles @ Minimum (%)	76	2	2	8
Cycles Maxed Out (%)	79	56	68	45
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	10.0	19.0	9.0	33.0	9.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	10.2	11.4	8.9	23.8	8.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	20	15	10	15
Cycles @ Minimum (%)	83	0	10	0	10
Cycles Maxed Out (%)	89	9	73	15	73
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	11.0	21.0	11.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	10.7	19.9	10.7	19.9
g/C Ratio	-0.01	NA	-0.01	NA
Cycles Skipped (%)	1	0	1	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	83	75	83	75
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 11: Commercial/Commercial St & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	42.3	14.4	13.5	23.4	8.4
g/C Ratio	NA	NA	-0.01	NA	-0.01
Cycles Skipped (%)	0	0	2	0	2
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	33	23	41	79	84
Cycles with Peds (%)	83	7	0	69	9

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	33.1	31.9	33.4	32.1
g/C Ratio	NA	NA	NA	-0.01
Cycles Skipped (%)	0	0	0	7
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	85	63	87	61
Cycles with Peds (%)	7	93	50	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	33.6	31.8	33.6
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	93	50	93
Cycles with Peds (%)	0	61	7

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6322	6217	6234	6246	6281	6257
Vehs Exited	6313	6163	6200	6209	6234	6223
Starting Vehs	171	172	186	163	142	160
Ending Vehs	180	226	220	200	189	203
Denied Entry Before	1	2	1	0	1	1
Denied Entry After	2	0	0	2	1	0
Travel Distance (mi)	2932	2853	2894	2891	2903	2895
Travel Time (hr)	215.1	211.2	230.7	200.6	190.2	209.6
Total Delay (hr)	98.4	97.8	115.5	85.4	74.6	94.4
Total Stops	10604	10246	10287	10235	10037	10283
Fuel Used (gal)	129.7	126.3	131.6	125.2	123.4	127.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6322	6217	6234	6246	6281	6257
Vehs Exited	6313	6163	6200	6209	6234	6223
Starting Vehs	171	172	186	163	142	160
Ending Vehs	180	226	220	200	189	203
Denied Entry Before	1	2	1	0	1	1
Denied Entry After	2	0	0	2	1	0
Travel Distance (mi)	2932	2853	2894	2891	2903	2895
Travel Time (hr)	215.1	211.2	230.7	200.6	190.2	209.6
Total Delay (hr)	98.4	97.8	115.5	85.4	74.6	94.4
Total Stops	10604	10246	10287	10235	10037	10283
Fuel Used (gal)	129.7	126.3	131.6	125.2	123.4	127.2

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1
Total Del/Veh (s)	5.4	7.7	8.8	7.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.1
Total Del/Veh (s)	18.5	11.9	10.1	10.8	13.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.9	0.9	7.0	7.4	3.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.0	1.1	0.7	1.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

5: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	0.3	8.6	1.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.4	6.1	1.2	0.2	1.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.4	0.0	0.3
Total Del/Veh (s)	23.0	23.4	14.1	20.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.3	0.1
Total Del/Veh (s)	20.7	10.6	9.7	15.1	12.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.4	2.3	0.2	0.7
Total Del/Veh (s)	10.8	23.1	17.3	13.5	16.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin/Maine State Pier Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.5	0.1	0.2
Total Del/Veh (s)	4.4	4.2	5.3	7.8	5.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

18: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	5.0	2.8	0.6	2.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Franklin/Franklin St. & Fore Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	6.8	0.1	0.9	0.7	2.1
Total Del/Veh (s)	95.6	21.9	22.3	26.6	41.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.8	0.0	1.8	0.8	0.7
Total Del/Veh (s)	111.2	18.3	20.5	13.0	52.2
Denied Entry Before	0	0	1	0	1
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	51.6
Denied Entry Before	1
Denied Entry After	0

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	59	69	97	107
Average Queue (ft)	36	47	48	58
95th Queue (ft)	53	65	81	88
Link Distance (ft)	225		455	1072
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		18	14	
Queuing Penalty (veh)		38	34	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	224	159	119	146
Average Queue (ft)	97	63	52	68
95th Queue (ft)	183	122	90	117
Link Distance (ft)	523	335	263	225
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	49	30	97
Average Queue (ft)	3	10	18	44
95th Queue (ft)	18	35	35	76
Link Distance (ft)	335	421	286	217
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	62	70
Average Queue (ft)	25	13
95th Queue (ft)	48	48
Link Distance (ft)	1093	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Proposed New Road & Fore

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	50	28
Average Queue (ft)	22	2
95th Queue (ft)	43	14
Link Distance (ft)	347	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		25
Storage Blk Time (%)	9	0
Queuing Penalty (veh)	0	0

Intersection: 6: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	35	39	16
Average Queue (ft)	16	16	5	1
95th Queue (ft)	39	41	24	9
Link Distance (ft)	662	308	534	324
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	498	322	119	187
Average Queue (ft)	209	153	72	81
95th Queue (ft)	378	257	115	151
Link Distance (ft)	1092	574		532
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			9	9
Queuing Penalty (veh)			21	17

Intersection: 8: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	171	129	127	315	100	150
Average Queue (ft)	72	42	46	114	60	79
95th Queue (ft)	138	93	105	225	118	130
Link Distance (ft)	1093	194		532		396
Upstream Blk Time (%)		1				
Queuing Penalty (veh)		2				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	0	12	1	
Queuing Penalty (veh)		3	1	26	4	

Intersection: 9: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	212	421	104	200	98
Average Queue (ft)	133	149	70	76	43
95th Queue (ft)	215	342	109	147	79
Link Distance (ft)	194	1247		255	233
Upstream Blk Time (%)	3			0	
Queuing Penalty (veh)	19			0	
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			9	3	
Queuing Penalty (veh)			18	6	

Intersection: 11: Commercial & Franklin/Maine State Pier

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	125	85	157	207
Average Queue (ft)	44	38	58	58
95th Queue (ft)	97	73	119	148
Link Distance (ft)	310	108	714	455
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 18: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	24
95th Queue (ft)	40
Link Distance (ft)	347
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Franklin/Franklin St. & Fore

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	512	333	128	268	140	299	124	268
Average Queue (ft)	309	163	12	124	73	140	104	176
95th Queue (ft)	705	507	60	222	142	270	150	304
Link Distance (ft)	805	805		523		310		248
Upstream Blk Time (%)	7	5				3		6
Queuing Penalty (veh)	0	0				15		42
Storage Bay Dist (ft)			100		90		75	
Storage Blk Time (%)				16	7	17	38	20
Queuing Penalty (veh)				2	30	16	196	42

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	150	1517	89	267	143	216	87	139
Average Queue (ft)	124	824	52	185	72	80	26	76
95th Queue (ft)	193	1561	103	286	130	158	64	127
Link Distance (ft)		2373		248		545		409
Upstream Blk Time (%)				3				
Queuing Penalty (veh)				24				
Storage Bay Dist (ft)	100		40		125		50	
Storage Blk Time (%)	15	53	22	39	3	1	4	20
Queuing Penalty (veh)	113	53	148	25	7	1	10	6

Network Summary

Network wide Queuing Penalty: 919

Intersection: 7: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	4.0	17.0	24.0	26.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	4.3	15.2	21.0	22.6
g/C Ratio	-0.01	-0.01	NA	NA
Cycles Skipped (%)	18	1	0	0
Cycles @ Minimum (%)	80	3	1	9
Cycles Maxed Out (%)	82	49	60	44
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 8: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	10.0	19.0	9.0	33.0	9.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	10.2	11.4	9.0	23.0	9.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	25	19	11	19
Cycles @ Minimum (%)	82	0	11	0	11
Cycles Maxed Out (%)	89	7	69	14	69
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	11.0	21.0	11.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	10.8	20.0	10.8	20.0
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	87	79	87	79
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Franklin/Franklin St. & Fore

Phase	2	4	6	8
Movement(s) Served	SBTL	WBTL	NBTL	EBTL
Maximum Green (s)	20.0	15.0	20.0	15.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	C-Min	None
Avg. Green (s)	20.2	15.0	20.0	15.0
g/C Ratio	NA	-0.01	NA	NA
Cycles Skipped (%)	0	5	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	97	95	100	99
Cycles with Peds (%)	35	48	25	78

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NETL	SETL	SWTL
Maximum Green (s)	21.0	14.0	20.5	14.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	C-Min	None	None	None
Avg. Green (s)	21.6	13.6	21.1	13.6
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	84	100	84
Cycles with Peds (%)	4	27	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Appendix D

Node Map

Crash Report

Collision Diagrams

NODE MAP

The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.15 Miles

1 inch = 0.13 miles

Date: 8/23/2016
Time: 9:58:43 AM

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0561238	Start Node: 18520	Start Offset: 0	☐ Exclude First Node
	End Node: 19042	End Offset: 0	☐ Exclude Last Node
Route: 0560160	Start Node: 18819	Start Offset: 0	☑ Exclude First Node
	End Node: 18519	End Offset: 0	☑ Exclude Last Node
Route: 0561110	Start Node: 18794	Start Offset: 0	☐ Exclude First Node
	End Node: 18798	End Offset: 0	☑ Exclude Last Node
Route: 0560531	Start Node: 18805	Start Offset: 0	☐ Exclude First Node
	End Node: 18802	End Offset: 0	☑ Exclude Last Node
Route: 0560505	Start Node: 18518	Start Offset: 0	☑ Exclude First Node
	End Node: 18818	End Offset: 0	☐ Exclude Last Node
Route: 0560286	Start Node: 18836	Start Offset: 0	☐ Exclude First Node
	End Node: 18517	End Offset: 0	☑ Exclude Last Node
Route: 0561001	Start Node: 15397	Start Offset: 0	☐ Exclude First Node
	End Node: 18821	End Offset: 0	☐ Exclude Last Node
Route: 0001A	Start Node: 15397	Start Offset: 0	☑ Exclude First Node
	End Node: 63225	End Offset: 0	☑ Exclude Last Node
Route: 0001A	Start Node: 63225	Start Offset: 0	☑ Exclude First Node
	End Node: 63224	End Offset: 0	☑ Exclude Last Node
Route: 001AS	Start Node: 18520	Start Offset: 0	☑ Exclude First Node
	End Node: 18518	End Offset: 0	☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 001AS	Start Node: 18518 End Node: 18517	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 001AS	Start Node: 18517 End Node: 15397	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0561002	Start Node: 18819 End Node: 19042	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☑ Exclude Last Node
Route: 0560524	Start Node: 18819 End Node: 18820	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560510	Start Node: 18912 End Node: 18913	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560666	Start Node: 18914 End Node: 18915	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560451	Start Node: 18910 End Node: 18911	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18795 End Node: 18799	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18800 End Node: 18795	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node
Route: 0560342	Start Node: 18801 End Node: 18800	Start Offset: 0 End Offset: 0	☑ Exclude First Node ☑ Exclude Last Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☑ 1320 Summary

REPORT DESCRIPTION

Franklin St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0561000	Start Node: 18822	Start Offset: 0	☑ Exclude First Node
	End Node: 18821	End Offset: 0	☑ Exclude Last Node
Route: 0561000	Start Node: 18817	Start Offset: 0	☑ Exclude First Node
	End Node: 18822	End Offset: 0	☑ Exclude Last Node
Route: 0561000	Start Node: 18804	Start Offset: 0	☑ Exclude First Node
	End Node: 18817	End Offset: 0	☑ Exclude Last Node
Route: 0561000	Start Node: 18796	Start Offset: 0	☑ Exclude First Node
	End Node: 18804	End Offset: 0	☑ Exclude Last Node
Route: 0561000	Start Node: 18823	Start Offset: 0	☑ Exclude First Node
	End Node: 18796	End Offset: 0	☑ Exclude Last Node
Route: 0560344	Start Node: 18803	Start Offset: 0	☑ Exclude First Node
	End Node: 18818	End Offset: 0	☑ Exclude Last Node
Route: 0560344	Start Node: 18797	Start Offset: 0	☑ Exclude First Node
	End Node: 18803	End Offset: 0	☑ Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18520	0561238 - 0.77	Int of CUMBERLAND AV FRANKLIN ST	9	18	0	0	1	2	15	16.7	7.178	0.84	1.10	0.00
												Statewide Crash Rate:	0.67	
63224	0561238 - 0.80	Int of CUMBERLAND AV FRANKLIN ST	9	13	0	0	1	4	8	38.5	6.653	0.65	1.12	0.00
												Statewide Crash Rate:	0.67	
18919	0561238 - 0.84	Int of BOYD ST CUMBERLAND AV	2	2	0	0	0	0	2	0.0	2.692	0.25	0.44	0.00
												Statewide Crash Rate:	0.15	
18910	0561238 - 0.87	Int of CUMBERLAND AV, LOCUST ST	2	2	0	0	0	0	2	0.0	2.636	0.25	0.44	0.00
												Statewide Crash Rate:	0.15	
18922	0561238 - 0.89	Int of CUMBERLAND AV MAYO ST	2	1	0	0	0	0	1	0.0	2.475	0.13	0.45	0.00
												Statewide Crash Rate:	0.15	
18915	0561238 - 0.94	Int of CUMBERLAND AV, SMITH ST	2	2	0	0	0	0	2	0.0	2.450	0.27	0.45	0.00
												Statewide Crash Rate:	0.15	
19463	0561238 - 0.98	Int of ANDERSON ST CUMBERLAND AV	2	2	0	0	0	0	2	0.0	2.195	0.30	0.46	0.00
												Statewide Crash Rate:	0.15	
18912	0561238 - 0.99	Int of CUMBERLAND AV, MONTGOMERY ST	2	0	0	0	0	0	0	0.0	2.043	0.00	0.47	0.00
												Statewide Crash Rate:	0.15	
18937	0561238 - 1.01	Int of CLEEVE ST CUMBERLAND AV	2	0	0	0	0	0	0	0.0	2.011	0.00	0.47	0.00
												Statewide Crash Rate:	0.15	
19042	0561238 - 1.04	Int of CUMBERLAND AV WASHINGTON AV	9	10	0	0	1	1	8	20.0	4.911	0.68	1.19	0.00
												Statewide Crash Rate:	0.67	
18913	0560160 - 0.55	Int of CONGRESS ST MONTGOMERY ST	2	0	0	0	0	0	0	0.0	3.833	0.00	0.40	0.00
												Statewide Crash Rate:	0.15	
18914	0560160 - 0.60	Int of CONGRESS ST SMITH ST	2	4	0	0	1	0	3	25.0	3.932	0.34	0.40	0.00
												Statewide Crash Rate:	0.15	
18823	0560160 - 0.63	Int of CONGRESS ST INDIA ST	9	7	0	0	1	3	3	57.1	4.581	0.51	1.20	0.00
												Statewide Crash Rate:	0.67	
18911	0560160 - 0.67	Int of CONGRESS ST LOCUST ST	2	0	0	0	0	0	0	0.0	2.943	0.00	0.43	0.00
												Statewide Crash Rate:	0.15	
18799	0560160 - 0.71	Int of CONGRESS ST HAMPSHIRE ST	2	0	0	0	0	0	0	0.0	3.235	0.00	0.42	0.00
												Statewide Crash Rate:	0.15	
63225	0560160 - 0.76	Int of CONGRESS ST FRANKLIN ST	9	12	0	1	0	4	7	41.7	5.974	0.67	1.14	0.00
												Statewide Crash Rate:	0.67	
18794	0561110 - 0	End of FEDERAL ST E	2	0	0	0	0	0	0	0.0	0.007	0.00	-17.21	0.00
												Statewide Crash Rate:	0.14	
18795	0561110 - 0.02	Int of FEDERAL ST E HAMPSHIRE ST	2	0	0	0	0	0	0	0.0	0.274	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
18796	0561110 - 0.10	Int of FEDERAL ST E INDIA ST	2	1	0	0	0	0	1	0.0	2.510	0.13	0.45	0.00
												Statewide Crash Rate:	0.15	
18797	0561110 - 0.20	Int of FEDERAL ST E HANCOCK ST	2	0	0	0	0	0	0	0.0	0.154	0.00	0.48	0.00
												Statewide Crash Rate:	0.14	
18805	0560531 - 0	End of NEWBURY ST	2	0	0	0	0	0	0	0.0	0.006	0.00	-20.36	0.00
												Statewide Crash Rate:	0.14	
18800	0560531 - 0.03	Int of HAMPSHIRE ST NEWBURY ST	2	0	0	0	0	0	0	0.0	0.296	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18804	0560531 - 0.11	Int of INDIA ST NEWBURY ST	2	2	0	0	0	0	2	0.0	2.235	0.30	0.46	0.00
												Statewide Crash Rate:	0.15	
18803	0560531 - 0.19	Int of HANCOCK ST NEWBURY ST	2	1	0	0	0	0	1	0.0	0.249	1.34	0.59	2.28
												Statewide Crash Rate:	0.14	
18801	0560505 - 0.33	0509221 POR,MIDDLE,HAMPSHIRE ST	2	1	0	0	0	0	1	0.0	0.968	0.34	0.53	0.00
												Statewide Crash Rate:	0.14	
18817	0560505 - 0.39	Int of INDIA ST MIDDLE ST	2	4	0	0	1	2	1	75.0	2.212	0.60	0.46	1.30
												Statewide Crash Rate:	0.15	
18818	0560505 - 0.47	0509238 POR,HANCOCK,MIDDLE ST.	2	0	0	0	0	0	0	0.0	0.272	0.00	0.59	0.00
												Statewide Crash Rate:	0.14	
18836	0560286 - 0.08	Int of FORE ST WATERVILLE ST	2	0	0	0	0	0	0	0.0	1.748	0.00	0.44	0.00
												Statewide Crash Rate:	0.13	
18820	0560286 - 0.28	Int of FORE ST, MOUNTFORT ST	2	1	0	0	1	0	0	100.0	1.976	0.17	0.43	0.00
												Statewide Crash Rate:	0.13	
18822	0560286 - 0.45	Int of FORE ST INDIA ST	2	7	0	0	0	3	4	42.9	3.565	0.65	0.41	1.60
												Statewide Crash Rate:	0.15	
15397	0561001 - 0	Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER	9	8	0	0	0	3	5	37.5	4.896	0.54	1.19	0.00
												Statewide Crash Rate:	0.67	
18821	0561001 - 0.11	Int of COMMERCIAL ST INDIA ST	2	0	0	0	0	0	0	0.0	2.210	0.00	0.46	0.00
												Statewide Crash Rate:	0.15	
18517	0001A - 11.88	Int of FORE ST FRANKLIN ST	9	8	0	0	1	3	4	50.0	3.590	0.74	1.27	0.00
												Statewide Crash Rate:	0.67	
18518	0001A - 11.94	Int of FRANKLIN ST MIDDLE ST	9	20	0	0	1	5	14	30.0	5.287	1.26	1.17	1.08
												Statewide Crash Rate:	0.67	
18519	001AS - 1.91	Int of CONGRESS ST, FRANKLIN ST	9	11	0	1	1	2	7	36.4	7.631	0.48	1.09	0.00
												Statewide Crash Rate:	0.67	
18819	0561002 - 0	Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV	9	11	0	0	1	0	10	9.1	4.593	0.80	1.20	0.00
												Statewide Crash Rate:	0.67	
18798	0560524 - 0.14	Int of FEDERAL ST E MOUNTFORT ST	2	2	0	0	0	0	2	0.0	0.513	1.30	0.59	2.19
												Statewide Crash Rate:	0.14	
18802	0560524 - 0.17	Int of MOUNTFORT ST NEWBURY ST	2	0	0	0	0	0	0	0.0	0.449	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
Study Years:	3.00	NODE TOTALS:		150	0	2	11	32	105	30.0	105.383	0.47	0.51	0.92

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18520	63224	3118814	0 - 0.03	0561238 - 0.77	0.03	2	1	0	0	0	0	1	0.0	0.00107	312.57	683.74	0.00
Int of CUMBERLAND AV FRANKLIN ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
63224	18919	3115972	0 - 0.04	0561238 - 0.80	0.04	2	3	0	0	0	0	3	0.0	0.00106	940.32	684.19	1.37
Int of CUMBERLAND AV FRANKLIN ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18910	18919	3129300	0 - 0.03	0561238 - 0.84	0.03	2	7	0	0	0	2	5	28.6	0.00077	3047.62	737.95	4.13
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18910	18922	3118713	0 - 0.02	0561238 - 0.87	0.02	2	1	0	0	0	0	1	0.0	0.00049	678.28	804.41	0.00
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18915	18922	3117967	0 - 0.05	0561238 - 0.89	0.05	2	5	0	0	0	0	5	0.0	0.00120	1394.48	665.03	2.10
Int of CUMBERLAND AV, SMITH ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18915	19463	3131702	0 - 0.04	0561238 - 0.94	0.04	2	0	0	0	0	0	0	0.0	0.00088	0.00	715.17	0.00
Int of CUMBERLAND AV, SMITH ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18912	19463	194577	0 - 0.01	0561238 - 0.98	0.01	2	0	0	0	0	0	0	0.0	0.00021	0.00	850.21	0.00
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18912	18937	3130202	0 - 0.02	0561238 - 0.99	0.02	2	1	0	0	0	0	1	0.0	0.00040	835.08	829.57	1.01
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 61238											Statewide Crash Rate: 198.45		
18937	19042	3131703	0 - 0.03	0561238 - 1.01	0.03	2	3	0	0	0	0	3	0.0	0.00059	1686.50	777.77	2.17
Int of CLEEVE ST CUMBERLAND AV				RD INV 05 61238											Statewide Crash Rate: 198.45		
18819	18913	3131697	0 - 0.03	0560160 - 0.52	0.03	2	1	0	0	0	0	1	0.0	0.00111	300.18	677.09	0.00
Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV				RD INV 05 60160											Statewide Crash Rate: 198.45		
18913	18914	194578	0 - 0.05	0560160 - 0.55	0.05	2	4	0	0	0	1	2	33.3	0.00189	706.78	592.48	1.19
Int of CONGRESS ST MONTGOMERY ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18823	18914	3118711	0 - 0.03	0560160 - 0.60	0.03	2	1	0	0	0	0	1	0.0	0.00117	284.21	668.12	0.00
Int of CONGRESS ST INDIA ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18823	18911	3120757	0 - 0.04	0560160 - 0.63	0.04	2	4	0	0	1	2	1	75.0	0.00116	1150.76	670.11	1.72
Int of CONGRESS ST INDIA ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18799	18911	3123999	0 - 0.04	0560160 - 0.67	0.04	2	2	0	0	0	0	2	0.0	0.00120	557.40	664.91	0.00
Int of CONGRESS ST HAMPSHIRE ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
63225	18799	3115974	0 - 0.05	0560160 - 0.71	0.05	2	1	0	0	0	1	0	100.0	0.00174	191.54	604.90	0.00
Int of CONGRESS ST FRANKLIN ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18519	63225	3115973	0 - 0.03	0560160 - 0.76	0.03	2	0	0	0	0	0	0	0.0	0.00128	0.00	654.44	0.00
Int of CONGRESS ST, FRANKLIN ST				RD INV 05 60160											Statewide Crash Rate: 198.45		
18794	18795	194384	0 - 0.02	0561110 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00000	0.00	-	0.00
End of FEDERAL ST E				RD INV 05 61110											Statewide Crash Rate: 384.19	42194.82	
18795	18796	194385	0 - 0.08	0561110 - 0.02	0.08	2	1	0	0	0	0	1	0.0	0.00024	1372.06	1568.43	0.00
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 61110											Statewide Crash Rate: 384.19		
18796	18797	194388	0 - 0.10	0561110 - 0.10	0.10	2	1	0	0	0	0	1	0.0	0.00011	2936.47	1652.05	1.78
Int of FEDERAL ST E INDIA ST				RD INV 05 61110											Statewide Crash Rate: 384.19		
18797	18798	194391	0 - 0.10	0561110 - 0.20	0.10	2	1	0	0	0	0	0	0.0	0.00006	5930.14	1307.34	4.54
Int of FEDERAL ST E HANCOCK ST				RD INV 05 61110											Statewide Crash Rate: 384.19		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18800	18805	194398	0 - 0.03	0560531 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00000	0.00	-	0.00
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19	30403.77	
18800	18804	194397	0 - 0.08	0560531 - 0.03	0.08	2	4	0	0	0	0	4	0.0	0.00008	15800.03	1582.54	9.98
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18803	18804	194402	0 - 0.08	0560531 - 0.11	0.08	2	1	0	0	0	0	1	0.0	0.00011	3119.00	1644.54	1.90
Int of HANCOCK ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18802	18803	194400	0 - 0.08	0560531 - 0.19	0.08	2	1	0	0	0	0	1	0.0	0.00006	5212.57	1423.30	3.66
Int of MOUNTFORT ST NEWBURY ST				RD INV 05 60531											Statewide Crash Rate: 384.19		
18518	18801	194025	0 - 0.06	0560505 - 0.27	0.06	2	2	0	0	0	1	1	50.0	0.00075	885.18	1225.13	0.00
Int of FRANKLIN ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18801	18817	194399	0 - 0.06	0560505 - 0.33	0.06	2	3	0	0	1	0	2	33.3	0.00017	5854.12	1638.94	3.57
0509221 POR,MIDDLE,HAMPSHIRE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18817	18818	194423	0 - 0.08	0560505 - 0.39	0.08	2	0	0	0	0	0	0	0.0	0.00032	0.00	1495.09	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 60505											Statewide Crash Rate: 384.19		
18820	18836	3131698	0 - 0.20	0560286 - 0.08	0.20	2	5	0	0	2	0	3	40.0	0.00336	495.47	433.67	1.14
Int of FORE ST, MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
18820	18822	3106815	0 - 0.17	0560286 - 0.28	0.17	2	9	0	0	1	1	7	22.2	0.00323	929.24	438.31	2.12
Int of FORE ST, MOUNTFORT ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
18517	18822	3106667	0 - 0.11	0560286 - 0.45	0.11	2	2	0	0	0	0	2	0.0	0.00155	429.61	528.74	0.00
Int of FORE ST FRANKLIN ST				RD INV 05 60286											Statewide Crash Rate: 159.43		
15397	18821	3106035	0 - 0.11	0561001 - 0	0.11	2	3	0	0	0	0	2	0.0	0.00260	385.13	545.43	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				RD INV 05 61001											Statewide Crash Rate: 198.45		
15397	18517	3123025	0 - 0.08	0001A - 11.80	0.08	2	1	0	0	0	1	0	100.0	0.00076	439.06	739.30	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1A											Statewide Crash Rate: 198.45		
18517	18518	3118954	0 - 0.06	0001A - 11.88	0.06	2	0	0	0	0	0	0	0.0	0.00078	0.00	734.26	0.00
Int of FORE ST FRANKLIN ST				US 1A											Statewide Crash Rate: 198.45		
18518	63225	3121455	0 - 0.16	0001A - 11.94	0.16	2	0	0	0	0	0	0	0.0	0.00337	0.00	509.80	0.00
Int of FRANKLIN ST MIDDLE ST				US 1A											Statewide Crash Rate: 198.45		
63225	63224	2566764	0 - 0.09	0001A - 12.10	0.09	2	2	0	0	0	1	1	50.0	0.00319	208.87	517.08	0.00
Int of CONGRESS ST FRANKLIN ST				US 1A											Statewide Crash Rate: 198.45		
18519	18520	3106670	0 - 0.09	001AS - 1.82	0.09	2	3	0	0	0	0	3	0.0	0.00326	306.28	514.07	0.00
Int of CONGRESS ST, FRANKLIN ST				US 1AS											Statewide Crash Rate: 198.45		
18518	18519	3106668	0 - 0.16	001AS - 1.91	0.16	2	1	0	0	1	0	0	100.0	0.00358	93.20	502.19	0.00
Int of FRANKLIN ST MIDDLE ST				US 1AS											Statewide Crash Rate: 198.45		
18517	18518	3118912	0 - 0.06	001AS - 2.07	0.06	2	2	0	0	1	0	1	50.0	0.00078	853.42	734.71	1.16
Int of FORE ST FRANKLIN ST				US 1AS											Statewide Crash Rate: 198.45		
15397	18517	3100256	0 - 0.08	001AS - 2.13	0.08	2	1	0	0	0	0	1	0.0	0.00107	312.58	683.74	0.00
Int of COMMERCIAL ST FRANKLIN ST MAINE STATE PIER				US 1AS											Statewide Crash Rate: 198.45		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18819	19042	3106814	0 - 0.06	0561002 - 0	0.06	2	4	0	0	0	0	4	0.0	0.00174	764.28	604.53	1.26
Int of CONGRESS ST, MOUNTFORT ST, WASHINGTON AV				RD INV 05 61002											Statewide Crash Rate: 198.45		
18798	18819	194394	0 - 0.14	0560524 - 0	0.14	2	1	0	0	0	0	1	0.0	0.00073	455.85	1234.29	0.00
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18798	18802	194393	0 - 0.03	0560524 - 0.14	0.03	2	0	0	0	0	0	0	0.0	0.00013	0.00	1658.64	0.00
Int of FEDERAL ST E MOUNTFORT ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18802	18820	194401	0 - 0.05	0560524 - 0.17	0.05	2	6	0	0	0	0	5	0.0	0.00019	10807.60	1626.49	6.64
Int of MOUNTFORT ST NEWBURY ST				RD INV 05 60524											Statewide Crash Rate: 384.19		
18912	18913	194575	0 - 0.05	0560510 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00005	0.00	1109.01	0.00
Int of CUMBERLAND AV, MONTGOMERY ST				RD INV 05 60510											Statewide Crash Rate: 384.19		
18914	18915	194579	0 - 0.06	0560666 - 0	0.06	2	1	0	0	0	1	0	100.0	0.00011	3074.89	1646.59	1.87
Int of CONGRESS ST SMITH ST				RD INV 05 60666											Statewide Crash Rate: 384.19		
18910	18911	194572	0 - 0.07	0560451 - 0	0.07	2	3	0	0	0	0	3	0.0	0.00009	10902.21	1610.95	6.77
Int of CUMBERLAND AV, LOCUST ST				RD INV 05 60451											Statewide Crash Rate: 384.19		
18795	18799	194386	0 - 0.06	0560342 - 0.10	0.06	2	0	0	0	0	0	0	0.0	0.00007	0.00	1482.15	0.00
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18795	18800	194387	0 - 0.05	0560342 - 0.05	0.05	2	1	0	0	0	0	1	0.0	0.00012	2805.66	1655.82	1.69
Int of FEDERAL ST E HAMPSHIRE ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18800	18801	194396	0 - 0.05	0560342 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00010	0.00	1630.72	0.00
Int of HAMPSHIRE ST NEWBURY ST				RD INV 05 60342											Statewide Crash Rate: 384.19		
18821	18822	3106816	0 - 0.06	0561000 - 0.23	0.06	2	0	0	0	0	0	0	0.0	0.00124	0.00	659.57	0.00
Int of COMMERCIAL ST INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18817	18822	3106813	0 - 0.05	0561000 - 0.18	0.05	2	1	0	0	0	0	1	0.0	0.00088	378.86	715.36	0.00
Int of INDIA ST MIDDLE ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18804	18817	3122291	0 - 0.05	0561000 - 0.13	0.05	2	3	0	0	1	0	1	50.0	0.00099	1008.74	695.75	1.45
Int of INDIA ST NEWBURY ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18796	18804	3130049	0 - 0.05	0561000 - 0.08	0.05	2	3	0	0	0	0	3	0.0	0.00112	889.95	675.15	1.32
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18796	18823	3106811	0 - 0.08	0561000 - 0	0.08	2	2	0	0	0	0	2	0.0	0.00189	353.64	592.58	0.00
Int of FEDERAL ST E INDIA ST				RD INV 05 61000											Statewide Crash Rate: 198.45		
18803	18818	194403	0 - 0.05	0560344 - 0.04	0.05	2	0	0	0	0	0	0	0.0	0.00007	0.00	1518.66	0.00
Int of HANCOCK ST NEWBURY ST				RD INV 05 60344											Statewide Crash Rate: 384.19		
18797	18803	194392	0 - 0.04	0560344 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00006	0.00	1288.27	0.00
Int of FEDERAL ST E HANCOCK ST				RD INV 05 60344											Statewide Crash Rate: 384.19		
Study Years: 3.00				Section Totals:	3.68		102	0	0	8	11	78	18.6	0.05523	615.59	292.48	2.10
				Grand Totals:	3.68		252	0	2	19	43	183	25.4	0.05523	1520.87	412.47	3.69

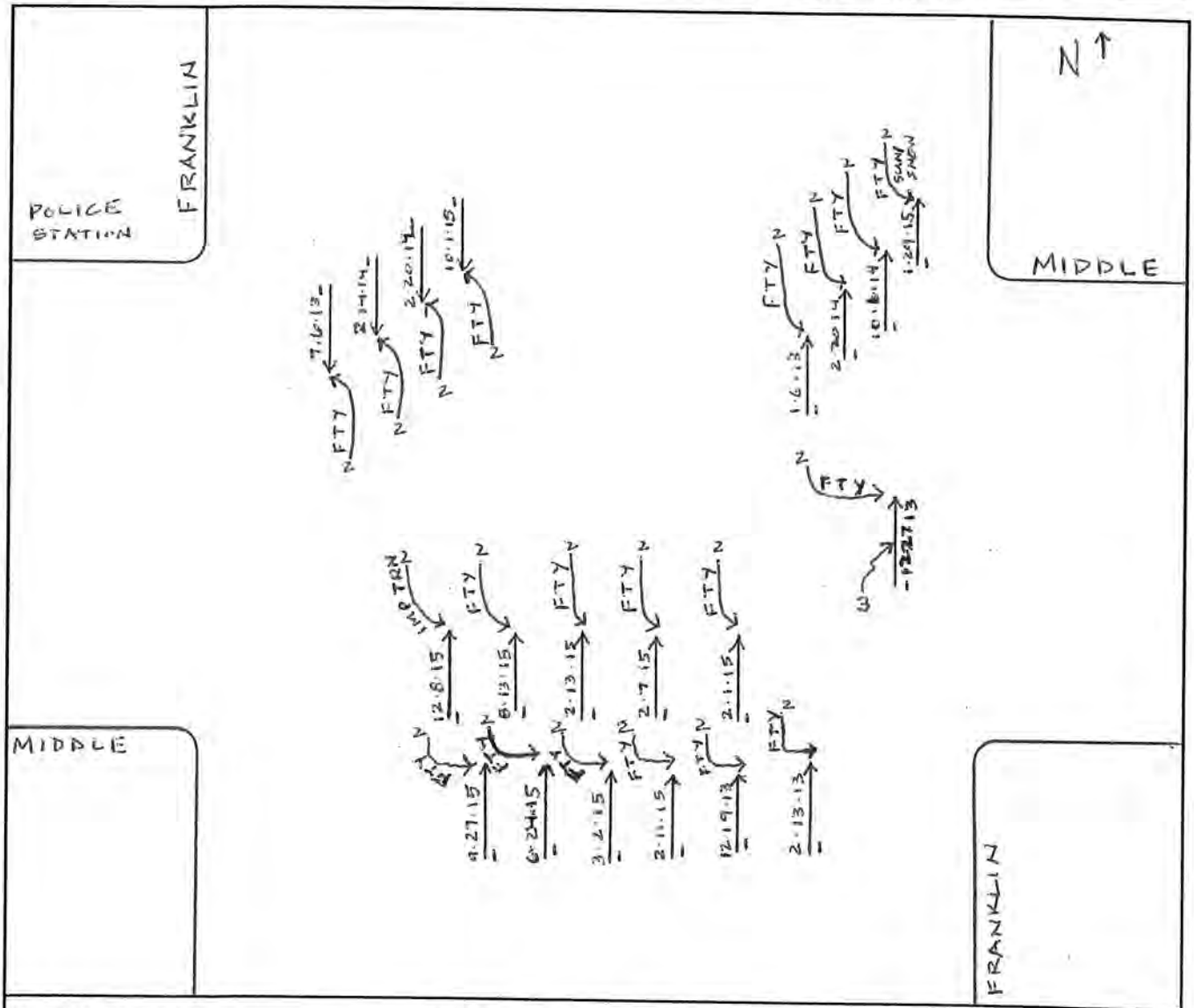
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Franklin & Middle Streets

TOWN Portland, Maine NODE NO(S) 18518

YEARS REVIEWED 2013 - 2015 DATE PREPARED 08-29-2016



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER
C - CLEAR
SL - SLEET
F - FOG
S - SNOW
R - RAIN
CL - CLOUDY
XW - CROSS WINDS

INJURIES
K - FATAL
A - INCAPACITATING
B - NON-INCAPACITATING
C - POSSIBLE INJURY

S:/PROJECTS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Franklin & Middle Streets

TOWN Portland, ME NODE NO(S) 18518

YEARS REVIEWED 2013 - 2015 DATE PREPARED 08 29 2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
00076	01·06·13	08:55	-	-	-	1	2	2	2	
000535	02·13·13	06:41	-	-	-	-	2	2	2	
001912	07·06·13	13:08	-	-	-	-	2	1	2	
003722	12·19·13	19:47	-	-	-	-	4	2	2	
003801	12·27·13	08:55	-	-	-	-	2	3	2	
000570	02·14·14	07:56	-	-	-	1	2	3	2	
000702	02·20·14	12:46	-	-	-	-	2	2	2	
000703	02·20·14	12:50	-	-	-	-	2	2	2	
002950	10·06·14	18:10	-	-	-	-	2	1	2	
000362	01·29·15	07:48	-	-	-	1	2	3	2/19	
000442	02·01·15	16:15	-	-	-	1	2	3	2	
000617	02·07·15	14:49	-	-	-	-	2	2	2	
000724	02·11·15	13:04	-	-	-	-	2	2	2	
000769	02·13·15	08:22	-	-	-	-	2	2	2	
001020	03·02·15	14:59	-	-	-	-	2	1	2	
002165	06·24·15	09:30	-	-	-	1	2	1	2	
002716	08·13·15	08:15	-	-	-	-	2	1	2	
003242	09·27·15	10:32	-	-	1	-	2	1	2	
003298	10·01·15	08:45	-	-	-	-	2	1	2	
004095	12·08·15	10:31	-	-	-	-	2	1	10	

S:/SHEETS/COLLISION DIAGRAM.DWG

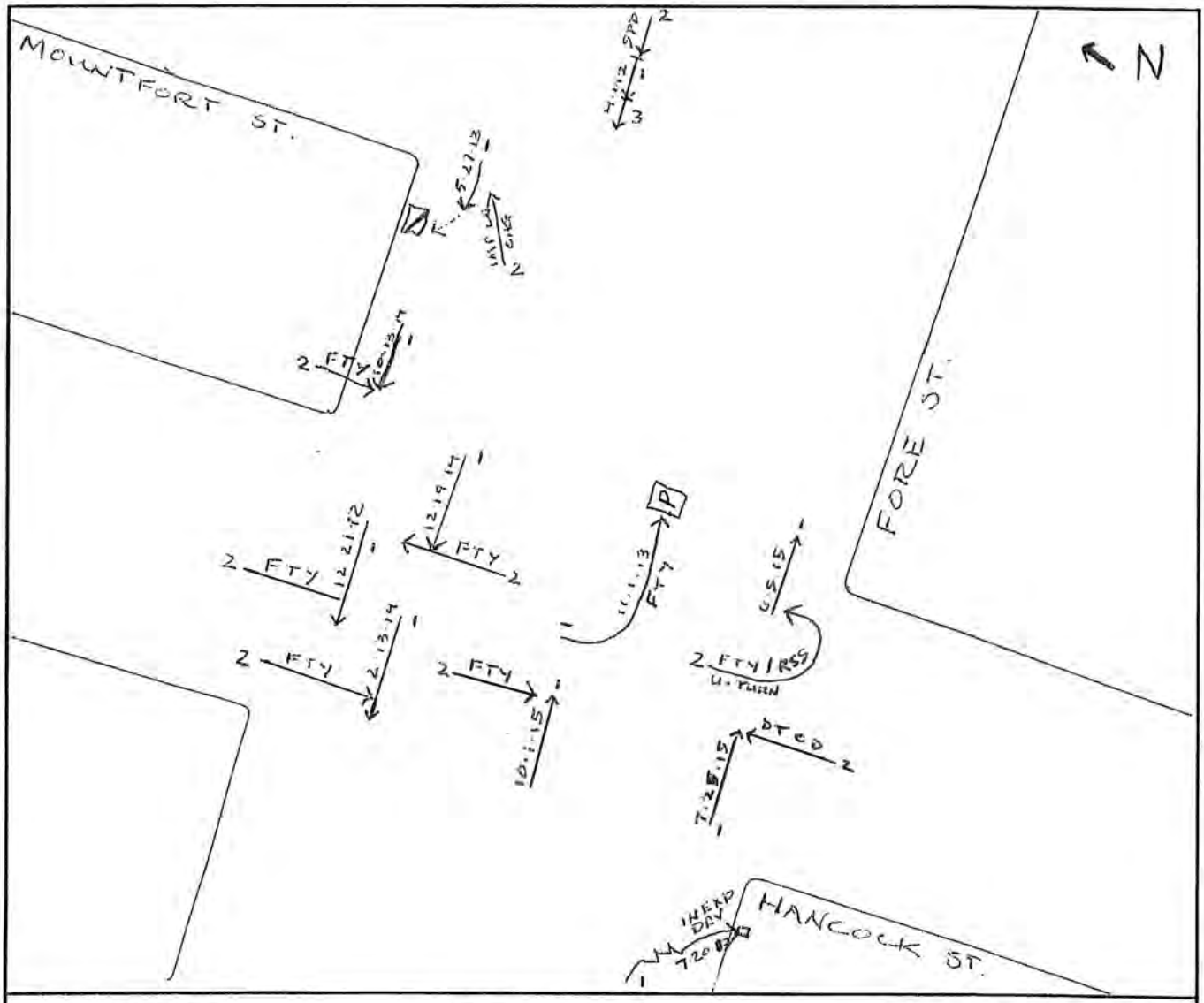
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Intersection of Fore Street & Hancock Street

TOWN Portland, Maine NODE NO(S) 18820 to 18822

YEARS REVIEWED 2012 - 2015 DATE PREPARED 08.29.2016



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS
ANGLE; PEDESTRIAN; FATAL ACCIDENT
BACKING; REAR END
FIXED OBJECT; SIDE SWIPE; VEHICLE (MOVING)
HEAD ON; TURNING MOVE; BICYCLE
OVERTURN; CHANGE LANE; ANIMAL
PARKED VEHICLE; OUT OF CONTROL; SLED

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/PROJ/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Intersection of Fore Street & Hancock Street

TOWN Portland NODE NO(S) 18820 to 18822

YEARS REVIEWED 2012 - 2015 DATE PREPARED 08.29.2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
00781	04.01.12	02:55	-	-	-	1	4	1	3	
003253	12.21.12	16:53	-	-	-	2	4	2	2	
001534	05.27.13	12:40	-	-	-	1	2	1	8	
002062	07.20.13	10:29	-	-	-	-	2	1	15	Student Driver
003090	11.01.13	15:30	-	1	-	-	2	1	2	
000550	02.13.14	10:03	-	-	-	-	2	2	2	
003007	10.13.14	10:09	-	-	-	-	2	1	2	
003756	12.19.14	15:09	-	-	-	-	2	1	2	
001962	06.05.15	10:35	-	-	-	-	2	1	2/5	U-Turn
002518	07.25.15	17:59	-	-	-	-	2	1	5	
003289	10.01.15	13:11	-	-	-	-	2	2	2	

S:/SHEETS/COLLISION DIAGRAM.DWG

GORRILL PALMER

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South Portland, Maine 04106
207.772.2515

Traffic Analysis and Recommendations
58 Fore Street Mixed Use Development
Portland, Maine

Date: December 6, 2016
Subject: Traffic Analysis and Recommendations
58 Fore Street Mixed Use Development
To: City of Portland, CPB2, Woodard & Curran
From: Randy Dunton, P.E., PTOE - Gorrill Palmer (JN 3138)

Per the request of the City of Portland, in pursuit of approval for a Master Development Plan (MDP) of the 58 Fore Street project, we offer the following response to Land Use Code Sec. 14-527. e. 2. xii. That portion of the code reads as follows:

"A traffic analysis and recommendations prepared by a registered professional engineer qualified to conduct such studies, including current traffic counts for streets surrounding the project, analysis of the existing capacity of those streets, projections of the amount of traffic that will be generated by the proposed development, and the ability of the street system to absorb the increased traffic without decreasing the level of service below an acceptable level – said level to be determined by the Planning Authority in concert with the Department of Public Works. In cases where the Master Development Plan is subject to a Traffic Movement Permit (TMP) for all phases, the TMP submissions and review shall supersede these requirements"

Each of the requirements is listed as follows shown in italics followed by our response:

1. *Requirement: "A traffic analysis and recommendations prepared by a registered professional engineer qualified to conduct such studies,*

   Response: This analysis is being prepared by Randy Dunton, licensed professional engineer (P.E.) and certified Professional Traffic Operations Engineer (PTOE), with over twenty years of experience in traffic and transportation.

2. *Requirement: …,including current traffic counts for streets surrounding the project,…*

   Response:

   Existing Traffic Volumes

   Morning and afternoon turning movement counts were completed from 7:30 AM to 9:30 AM and from 4:00 PM to 6:00 PM at the following locations and dates:

- Franklin Street / Middle Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Franklin Street / Fore Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Franklin Street / Commercial Street – August 10, 2016 (PM) and August 17, 2016 (AM)
- Cumberland Avenue / Washington Street – August 16, 2016 (AM and PM)
- Congress Street / Mountfort Street / Washington Street – August 16, 2016 (AM and PM)
- Congress Street / India Street – August 16, 2016 (AM and PM)
- Fore Street / Mountfort Street – August 11, 2016 (AM and PM)
- Fore Street / Existing Site Driveways – August 11, 2016 (AM and PM)
- Fore Street / Waterville Street – August 11, 2016 (AM and PM)

The dates, times, and locations of the counts were approved by the City prior to the counts.

Additionally, as part of a different study, GP had completed morning and afternoon turning movement counts at the following locations:

- India Street / Fore Street
- India Street / Commercial Street
- Fore Street / Hancock Street

These counts were collected on October 7, 2015 from 7:00 AM to 8:30 AM and from 4:00 PM to 6:00 PM. The date, times, and locations of the counts were approved by the City prior to the counts.

The AM and PM peak hour volumes of the counts at all 12 locations are shown on the attached Figure 2.

The "Existing Traffic Volumes" have previously been approved by the City.

Other Development in the Vicinity of the Site:

Approved projects that are not yet opened as well as projects for which applications have been filed are required to be included in the predevelopment volumes for this project. Based on conversations with City Staff the following projects have been included in the background traffic for this project:

- A – 158 Fore Street: 180 room hotel
- B – 1 India Street: office and bank
- C – 185 Fore Street: 4,085 sf of office or retail and 8 residential units
- D – 16 Middle Street: 5,305 sf of retail and 39,526 sf of office
- E – 113 Newbury Street: 39 condominium units (Seaport Lofts)
- F – 48 Hancock Street: 2 residential units
- G – 49 Hancock Street: 2 residential units
- H – 62 India Street: 5,409 sf of retail and 29 condominium units
- I – 169 Newbury Street: 24 condominium units
- J – 273 Congress Street: 2,290 sf of retail and 10 residential units
- K – 31 Fore Street: 4 condominium units

The locations, sizes, and uses of these developments are shown on the attached Other Development Figure. The forecast traffic from these projects within the study area is shown on the attached Figure 4.

The "Other Development in the Vicinity of the Site" has previously been approved by the City.

Predevelopment Traffic Volumes:

Traffic volumes are typically seasonally adjusted to approximate the 30th highest hour of the year using the weekly group mean factors published by MaineDOT. This seasonal adjustment increases the volumes to those that may be experienced during peak summer months. Since August is a peak summer month, no seasonal adjustment needs to be applied to the counts collected in August 2016. However, October is not a peak summer month, so the three locations counted for another study in October 2015 needed to be adjusted. This seasonal adjustment resulted in an increase of 3.4%.

In addition to seasonally adjusting the traffic volumes, they are also increased by a yearly growth to approximate the build out year of the project. The proposed project is anticipated to be completed and occupied in 2027. MaineDOT traffic counts in the area show a decrease in traffic volumes in the past six years. To be conservative, an annual growth of 0.5% per year was utilized. This is the same growth used for the recently completed Franklin Street Study. The seasonally and annually adjusted volumes are shown on the attached Figure 3.

The "Predevelopment Traffic Volumes" have previously been approved by the City.

3. *Requirement: …,analysis of the existing capacity of those streets,…*

   Response: See Response # 5 for detailed summary of capacity analysis.

4. *Requirement: …,projections of the amount of traffic that will be generated by the proposed development,…*

   Response: The following is a summary of the trip generation for this project.

   The trip generation for the site was calculated separately for Development Blocks 1-6 (B1-B6) and for Development Block 7 (B7), then combined to yield the total site trip generation. This is due to the unique nature of the marina on B7. The following is a summary of the methods, assumptions, and results of the trip generation calculations for the site.

   Development Blocks 1-6

   The Institute of Transportation Engineers' publication, *Trip Generation*, Seventh Edition, was used to forecast the traffic to be generated by B1-B6. The Ninth Edition is available, but has not yet been accepted by the MaineDOT. Since this project will generate greater than 200 trip ends in a peak hour, a MaineDOT Traffic Movement Permit (TMP) will be required. The permit process can be administered by the City since they have delegated review authority. The following table summarizes the trip generation for B1-B6.

Development Blocks 1-6 ITE Trip Generation Summary

Development Block	Land Use Code	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
B1								
	814 – Specialty Retail	7,878 sf	4	2	6	9	12	21
	220 – Apartment	91 Units	9	37	46	36	20	56
	710 – General Office	79,000 sf	140	15	155	22	127	149
B2								
	814 – Specialty Retail	26,895 sf	12	8	20	33	40	73
	220 – Apartment	19 Units	2	8	10	8	4	12
	710 – General Office	25,617 sf	57	6	63	9	52	61
B3								
	814 – Specialty Retail	11,500 sf	5	4	9	14	17	31
	710 – General Office	19,300 sf	45	5	50	7	41	48
B4								
	220 – Apartment	275 Units	28	112	140	111	60	171
	814 – Specialty Retail	4,000 sf	2	1	3	5	6	11
B5								
	220 – Apartment	108 Units	7	41	48	36	20	56
	310 – Hotel	132 Rooms	44	30	74	43	35	78
	932 – High Turnover Sit-Down Restaurant	3,800 sf	22	22	44	25	16	41
	Function Space*	5,800 sf	0	0	0	0	0	0
B6								

Development Block	Land Use Code	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
	230 – Residential Condominium / Townhouse	131 Units	9	49	58	44	24	68
	220 – Apartment	14 Units	1	6	7	6	3	9
Development Blocks 1-6			**387**	**346**	**733**	**408**	**477**	**885**

*It was assumed that the function space would be ancillary to the other uses in the Development Block and would not generate additional traffic.

<u>The ITE Trip Generation portion has previously been approved by the City.</u>

Due to the variety of uses and the site's location within a downtown area, two reductions can be applied to refine the trip generation for B1-B6. These reductions are summarized as follows:

Shared Use Adjustment

Due to the close proximity of the mixed uses and the sharing of people between uses, simply adding the trip generation of each use as if they were isolated would result in an overestimate of trip generation. To estimate the traffic that will visit more than one destination without leaving the site, GP utilized the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool. The NCHRP 684 spreadsheet uses the ITE forecast trip generation for each type of land use (office, retail, restaurant, residential, hotel, and other) and estimates the trips that will travel between two uses without leaving the site. This yields an internal trip capture percentage, which is the percentage of trip ends that will travel between two uses. The following tables summarize the AM and PM peak hour internal trip capture percentages respectively:

AM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends*		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total
Office	242	26	10%	46%	23	12	35
Retail	23	15	57%	47%	13	7	20
Restaurant	22	22	55%	50%	12	11	23
Residential	56	253	4%	5%	2	12	14
Hotel	44	30	2%	30%	1	9	10
Total	**387**	**346**	**12%**	**14%**	**51**	**51**	**102**

*These values are taken directly from the NCHRP spreadsheets (Appendix B), which may not match exact calculations due to rounding in the spreadsheet.

PM Peak Hour NCHRP 684 Internal Trip Capture

Land Use	ITE Trip Generation		Internal Capture %		Internal Capture Trip Ends*		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total
Office	38	220	18%	5%	7	10	17
Retail	61	75	31%	44%	19	33	52
Restaurant	25	16	52%	69%	13	11	24
Residential	241	131	11%	15%	27	19	46
Hotel	43	35	21%	6%	9	2	11
Total	**408**	**477**	**18%**	**15%**	**75**	**75**	**150**

*These values are taken directly from the NCHRP spreadsheets (Appendix B), which may not match exact calculations due to rounding in the spreadsheet.

The above "Shared Use Adjustments" have previously been approved by the City.

Other Modes of Transportation Reduction

It can be expected for a site in a downtown area that other modes of transportation will be used to go to and from the site. These other modes could include things such as transit, bicycle, or walking. This site is adjacent to an existing bus route, as well as located on a pedestrian and bicycle path, so full use of other modes of transportation are readily available. The other modes reduction for B1-B6 is divided into three parts; Residential, Non-Residential, Hotel and are described in more detail as follows:

Residential: Based on information from the 2009-2013 American Community Survey (ACS) Five-Year Estimate by Census Tract for the City of Portland. Rick Harbison, Planner and GIS Specialist for the Greater Portland Council of Governments, used this data to create maps that show the estimated percentage of workers living in each Portland Census Tract that use each mode of transportation to travel to work. The site is located on the east side of Census Tract 3, which is a predominantly commercial area. Census Tracts 2 and 5 border the site and consist of primarily residential areas. Since the site is proposed to have a significant number of residential units as well as commercial space, the data from the combination of the three tracts is expected to be more representative of the actual conditions on the site than the data from the individual tracts. The reduction was calculated by dividing the estimated number of people walking, bicycling, and taking the bus to work in the three Census Tracts by the estimated total number of working people in the same three Census Tracts. This calculation yields a reduction of 35.8%, which appears reasonable for this area.

Non-Residential: Based on communications with the City, they have requested that the project use 18% for the non-residential (retail, office, restaurants). This is based on their review of "2010 CTPP data for Tract 3, which includes the eastern waterfront and downtown,…" according to an email from Christine Grimando, Senior Planner.

Hotel: There was limited data available for hotels, so a conservative reduction of 10% was used for the hotel.

The above "Other Modes of Transportation Reduction" percentages have been approved by the City.

The following table summarizes the other modes of transportation reduction for the site trip generation:

Other Modes of Transportation Reduction Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 Total Trip Generation*	336	295	631	333	402	735
Residential (35.8%)	19	87	106	77	40	117
Non-Residential (18%)	43	6	49	15	47	62
Hotel Trip Generation (10%)	4	2	6	3	4	7
Total Other Modes Reduction	66	95	161	95	91	186
Total B1-B6 Trip Generation	270	200	470	238	311	549

*After shared use adjustment

Development Block 7 (Marina)

Although the ITE does have a Marina category, the number of studies (2) is limited. Therefore, the trip generation for B7 was not determined using the ITE trip generation rates. Since a marina is such a unique facility, the trip generation was forecast based on the characteristics of this specific 220 slip marina. Applied Technology & Management (ATM), experts in marine and coastal engineering, provided the following information and assumptions:

- Peak weekday usage of the marina is forecast to be approximately 10% of the slips, but possibly greater since Maine's peak boating season is shorter than other less seasonal areas
- Approximately 36% of daily users are forecast to be transient boaters (80 transient boater slips out of 220 total slips)
- 10% of daily users who are not transient boaters are on-site residents
- 90% of daily users who are not transient boaters are off-site Portland residents
- 30% of off-site Portland residents are Islanders commuting to and from the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Based on the information from ATM, the following assumptions were made:

- Peak weekday usage will be 15% of the slips (33 slips). This is higher than the 10% identified by ATM and increased to 15% to account for the short season
- Transient boaters will not have a car on site since they arrive and depart using their boat, so they will not generate trip ends
- On-site residents will not enter or exit the site to visit the marina, so they will not generate any trip ends
- Each slip used by an off-site Portland resident who is not an islander will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each slip used by an Islander commuting to work will generate one trip end out during the AM peak hour and one trip end in during the PM peak hour
- Each employee will generate one trip end in during the AM peak hour and one trip end out during the PM peak hour
- Each mega-yacht slip would be visited by a provisioning vehicle during both peak hours and the provisioning vehicles would enter and exit the site during the peak hour

Based on these assumptions, the forecast weekday peak hour trip generation for the marina is as follows:

- AM Peak Hour: 36 trip ends (26 in / 10 out)
- PM Peak Hour: 36 trip ends (10 in / 26 out)

Two reductions (shared use and other modes) were applied to the trip generation for B1-B6; however, those reductions were not applied to the marina trip generation, as described in more detail as follows:

Shared Use

Although it is possible for marina visitors to eat at the restaurants or visit the shops on site, to be conservative it was assumed that the marina would be a primary destination and would have very few shared trips with the other uses.

Other Modes

Additionally, there is a possibility that marina users would use alternative modes of transportation to get to or from the site, but to be conservative we assumed that visitors would use cars and not another mode of transportation.

<u>The above Trip Generation for the Marina has previously been approved by the City.</u>

Total Site Trip Generation

The following table summarizes the adjusted site trip generation starting with the ITE trip generation and subtracting the shared use reduction as well as the other modes of transportation reduction and lastly adding the marina trip generation:

Adjusted Trip Generation Summary

Trip Generation	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
B1-B6 ITE Subtotal	387	346	733	408	477	885
Shared Use Adjustment	-51	-51	-102	-75	-75	-150
Other Modes Adjustment	-66	-95	-161	-95	-91	-186
B1-B6 Total	**270**	**200**	**470**	**238**	**311**	**549**
B7 Trip Generation	26	10	36	10	26	36
Site Total	**296**	**210**	**506**	**248**	**337**	**585**

As shown in the table, the proposed development is forecast to generate 506 trip ends during the AM weekday peak hour and 585 trip ends during the PM weekday peak hour. To be conservative, this trip generation does not include any credit for existing on-site uses. This level of trip generation does require a MaineDOT Traffic Movement Permit because it is over 99 trip ends during the peak hour. The Traffic Movement Permit Application can be reviewed and issued by the City since they have delegated review authority. See also the discussion in Response # 6.

Trip Distribution and Assignment: CPB2 and GP have been working closely with the City to establish the distribution of traffic to/from the site to the adjacent roadway network. The attached Trip Distribution figures show the result of the collaboration between the City and CPB2 / GP.

The Trip Distribution has been approved by the City.

5. *Requirement: …,the ability of the street system to absorb the increased traffic without decreasing the level of service below an acceptable level – said level to be determined by the Planning Authority in concert with the Department of Public Works.*

Response:

GP completed capacity analyses for the study area intersections using the Synchro/SimTraffic computer analysis software. Level of service rankings are similar to

the academic ranking system where an 'A' is very good with little control delay and an 'F' represents significant congestion.

The following tables summarize the relationship between the control delay and level of service:

Level of Service for Unsignalized Intersections and Roundabouts

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The capacity analyses were completed for the study area intersections with existing geometry. Although the entire Franklin Street corridor is not included in the 58 Fore Street study area, all Franklin Street intersections were included as part of the capacity analysis, to accurately reflect existing traffic conditions and queuing interaction between intersections. The following table is a summary of the capacity analysis results for the study area intersections. The detailed analyses (including results for the additional Franklin Street intersections) are attached.

Level of Service Summary

Approach	Level of Service			
	2027 AM		2027 PM	
	Pre	Post	Pre	Post
Franklin / Middle (S)				
Franklin SE	A	A	B	C
Franklin NW	B	B	C	E
Middle NE	B	B	D	F
Middle SW	B	B	B	D
Overall	**B**	**B**	**C**	**F**

Approach	Level of Service			
	2027 AM		2027 PM	
	Pre	Post	Pre	Post
Franklin / Fore (S)				
Franklin SE	B	B	B	C
Franklin NW	B	B	C	F
Fore NE	B	B	C	F
Fore SW	B	B	C	F
Overall	**B**	**B**	**C**	**F**
Franklin / Commercial (S)				
Franklin EB	B	C	B	C
Maine State Pier WB	C	C	D	F
Commercial NB	B	B	B	F
Commercial SB	C	C	B	F
Overall	**B**	**C**	**C**	**F**
Commercial / Thames / India (U)				
Commercial EB	A	A	A	B
Thames WB	A	A	A	B
India SE	A	A	A	A
India / Fore (U)				
Fore EB	A	A	A	B
Fore WB	A	A	A	B
India SE	A	A	A	B
India NW	A	A	A	B
Hancock / Fore (U)				
Fore NB	A	A	A	A
Fore SB	A	A	A	A
Hancock SE	A	A	A	A
Hancock NW	A	A	A	A
Mountfort / Fore (U)				
Fore NE	A	A	A	A
Fore SW	A	A	A	A
Mountfort SE	A	A	A	A
Hancock / Thames (U)				
Thames EB	A	A	A	A
Thames WB	A	A	A	A
Ocean Gateway NB	A	A	A	A
Hancock SB	A	A	A	A

Approach	Level of Service			
	2027 AM		2027 PM	
	Pre	Post	Pre	Post
Existing Driveways / Fore (U)				
Fore EB	A	N/A	A	N/A
Fore WB	A	N/A	A	N/A
100 Fore St NB	A	N/A	A	N/A
58 Fore St NW	A	N/A	A	N/A
Proposed New Road / Fore (U)				
Fore EB	N/A	A	N/A	A
Fore WB	N/A	A	N/A	A
Proposed Road NB	N/A	A	N/A	A
Proposed New Road / Thames (U)				
Thames NE	N/A	A	N/A	A
Thames SW	N/A	A	N/A	A
Proposed Road SB	N/A	A	N/A	A
Waterville / Fore (U)				
Fore NE	A	A	A	A
Fore SW	A	A	A	A
Waterville SE	A	A	A	A
Site Driveway NW	N/A	A	N/A	A
Congress / India (S)				
Congress NE	B	B	C	D
Congress SW	B	B	B	B
India NW	B	B	D	D
Overall	**B**	**B**	**C**	**C**
Washington / Congress / Mountfort (S)				
Congress NE	B	B	C	C
Congress SW	C	C	C	C
Mountfort NB	C	C	C	C
Washington SB	B	B	B	B
Overall	**B**	**B**	**C**	**C**
Cumberland / Washington (S)				
Cumberland NE	B	B	B	C
Cumberland SW	B	B	B	B
Washington NB	C	C	B	B
Washington SB	B	C	C	C
Overall	**B**	**C**	**B**	**B**

*(S) = Signalized, (U) = Unsignalized

As shown in the table, the study area intersections are forecast to operate at or above an overall level of service 'D' after the development is completed, with the exception of the Franklin Street intersections during the PM peak hour. This can be attributed in part to the existing overcapacity of Franklin Street that is yet to be resolved by the City. The reason the three Franklin Street intersections fail is due to the queuing of the northernmost Franklin Street intersections extending down the corridor to the study area intersections. This queueing occurs today as identified both by GP while doing the turning movement counts, as well as identified by Mr. Errico at the most recent traffic meeting. This existing congestion problem will be exacerbated in the future, regardless of the construction of this project. The congestion occurs during both the predevelopment and post-development conditions. However during the predevelopment condition, the long queue lengths impact the last portion (approximately 15 minutes) of the peak hour whereas it impacts almost the entire peak hour during the post-development. The TMP will address the necessary off-site mitigation measures, including any proportional mitigation on Franklin Street, taking into consideration the existing inadequate condition.

The levels of service of the Franklin Street intersections may be improved with adjustments to the intersection timing; however since the intersection is part of the proposed Franklin Street improvements, changes to the timing were not made for this analysis. Any adjustments to intersection timing would need to consider the platooning of Franklin Street traffic and would likely need to be made to all intersections in the corridor.

Most of the Franklin Street intersections located outside the 58 Fore Street study area operate at failing levels of service during both the PM Predevelopment and PM Post-development conditions. <u>When analyzing the intersections of Commercial St / Franklin St, Fore Street / Franklin St, and Middle St / Franklin St separately from the other failing Franklin Street intersections, they are forecast to operate at overall levels of service of D or better during the PM Post-development condition</u>.

The existing timing and phasing of the two intersections of India Street with Congress Street and Congress Street with Mountfort Street / Washington Avenue include an exclusive pedestrian phase. For this analysis, the exclusive phase was replaced with concurrent pedestrian phases as is the trend for the City. The City's preference for this area, according to Jeremiah Bartlett, is to implement a leading pedestrian interval (LPI) at some point in the future. The intersection of Washington Avenue / Cumberland Avenue includes concurrent pedestrian phases in the existing timing and phasing, so the phasing was not changed. It is assumed that if the City altered the pedestrian phasing at these intersections, adjustments to the timing would also be made before the project is complete. Therefore, timing adjustments were included in the capacity analysis at the

three intersections during both the predevelopment and post-development conditions, which compares "apples to apples".

Queues are provided in the attached printouts, and will be further reviewed with the City in pursuing the Traffic Movement Permit.

6. *Requirement: In cases where the Master Development Plan is subject to a Traffic Movement Permit (TMP) for all phases, the TMP submissions and review shall supersede these requirements"*
   Response: Since the trip generation for this project is forecast to exceed 200 passenger car equivalents (pce), a MaineDOT Traffic Movement Permit (TMP) is required. Since the City of Portland has delegated review authority, it can issue the TMP. CPB2 has been working closely with the City and the City's Traffic Peer Reviewer (Tom Errico) in this process as described as follows:

July 26, 2016	*Submitted Draft Preliminary Trip Generation and Parking Demand Summary*
July 27, 2016	*Pre-Scoping Meeting held at City Hall*
July 29, 2016	*Submitted Pre-Scoping Meeting Minutes*
Aug 19, 2016	*Submitted Other Modes Trip Generation Reduction Calculation Memo*
Aug 29, 2016	*Submitted Initial Trip Distribution Assumption Figures*
Sept 16, 2016	*Submitted TMP Application, Traffic Impact Study, Parking Study w/ MDP*
Oct 5, 2016	*Submitted Example Bay-House Trip Generation and Parking Demands Memo*
Oct 17, 2016	*Scoping Meeting held at City Hall*
Oct 31, 2016	*Submitted Revised TIS and TDM*
Nov 9, 2016	*Written comments received from City Traffic Engineer*
Nov 15, 2016	*Meeting to discuss City Comments*

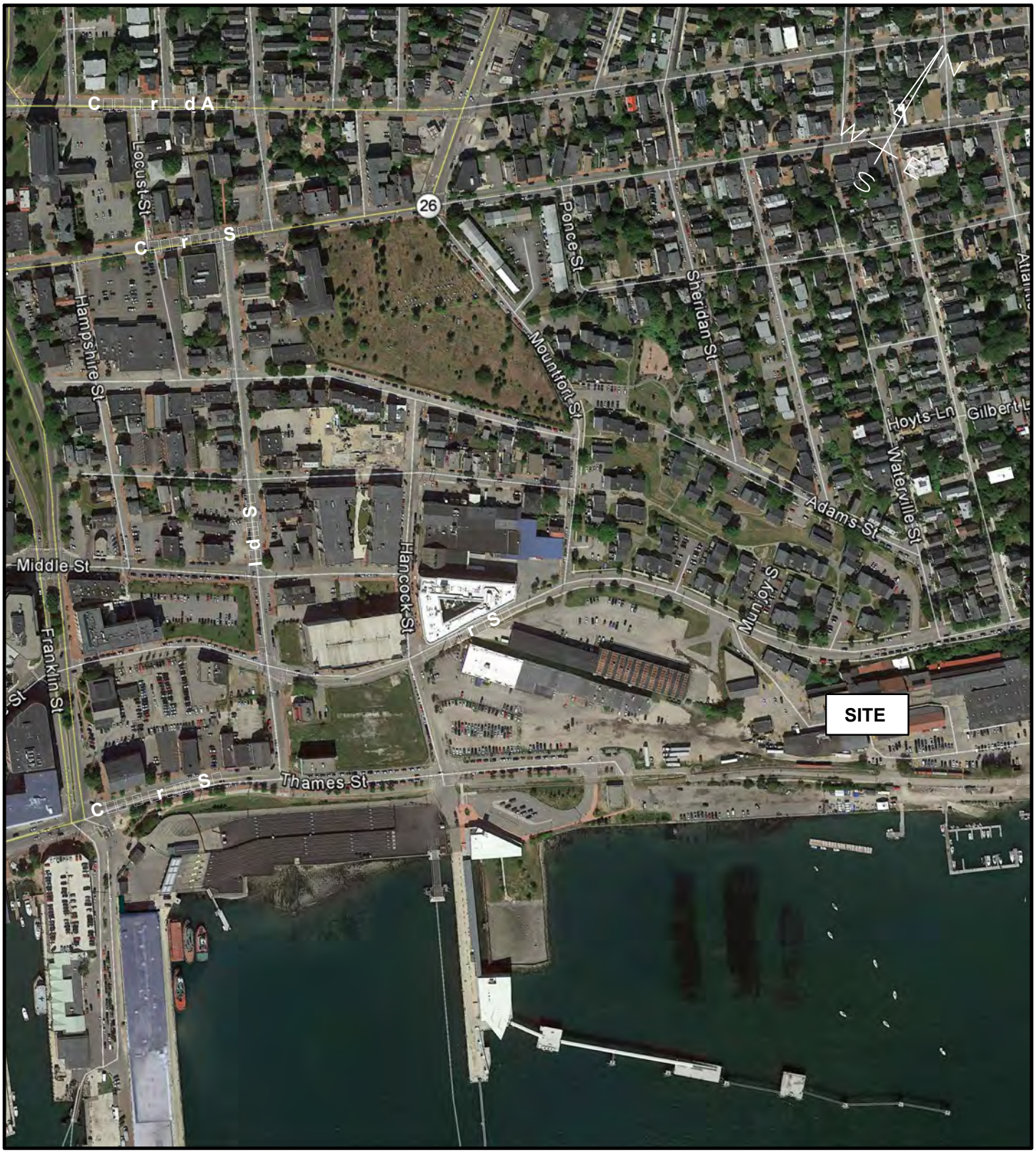
   As seen from the above summary, CPB2 and the City have invested a lot of time and effort already to addressing the traffic impacts of this project and will continue to do so until ideally a Traffic Movement Permit is issued.

   The Applicant has arranged additional coordination and review of the TMP application with the City of Portland and we anticipate receiving approval of the TMP through the City Planning Authority under a separate timeline from the MDP approval, with approval of the TMP anticipated in January 2017.

7. Potential Off-Site Mitigation – As stated previously, this project is still in the TMP process and undergoing significant City review and evaluation. As such, the exact mitigation associated with this project is still in the process of being identified. However, it is anticipated that the project will contribute proportionally to their impacts for improvements on Franklin Street, potential signal equipment upgrades, and potential safety improvements. The specifics will be identified in the TMP.

Lo□at□on Map

Figure No. 1



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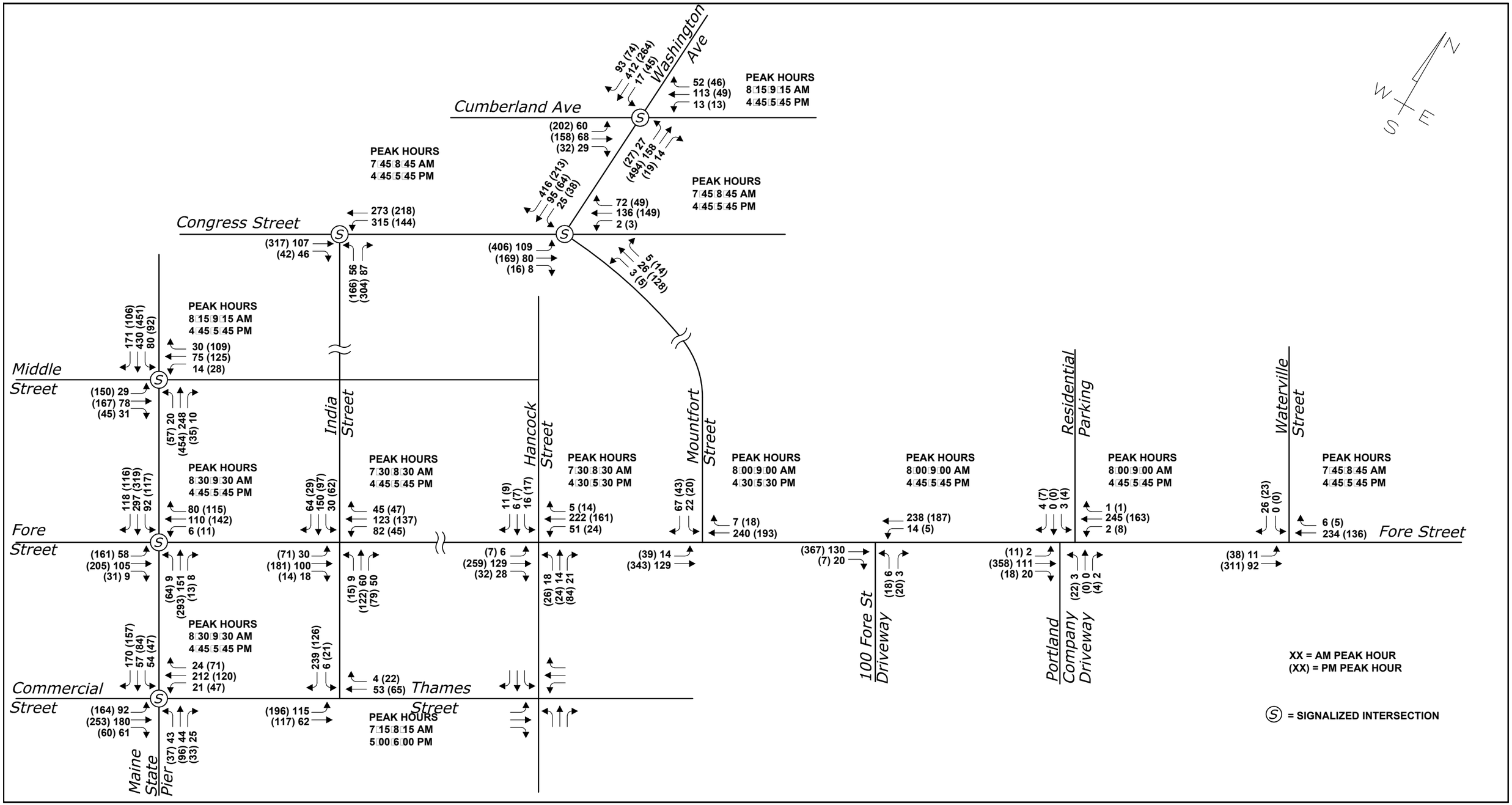
Raw Volumes

Figure No. 2



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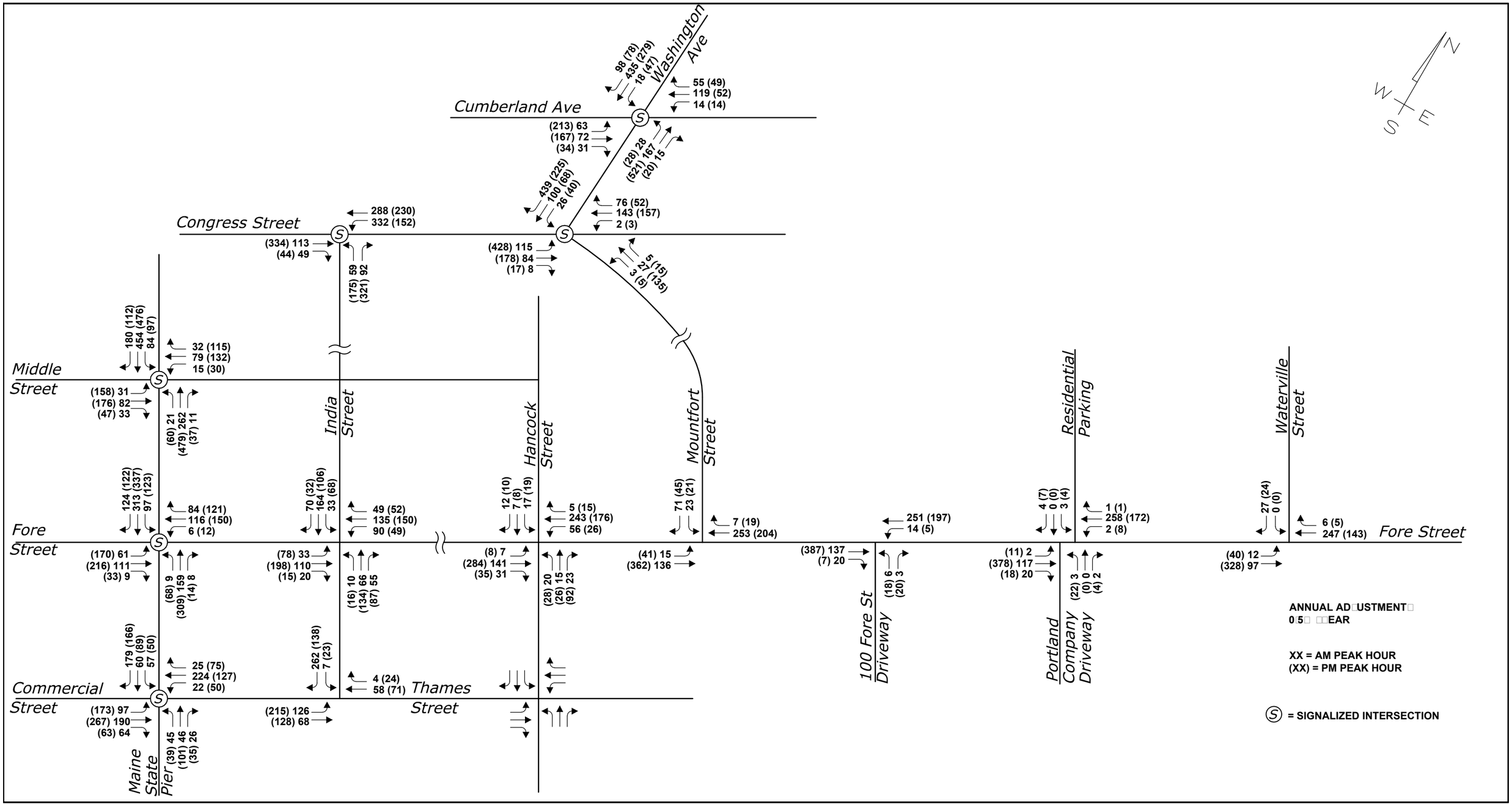
Adjusted Volumes

Figure No. 3



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Other Development

Figure No. 4

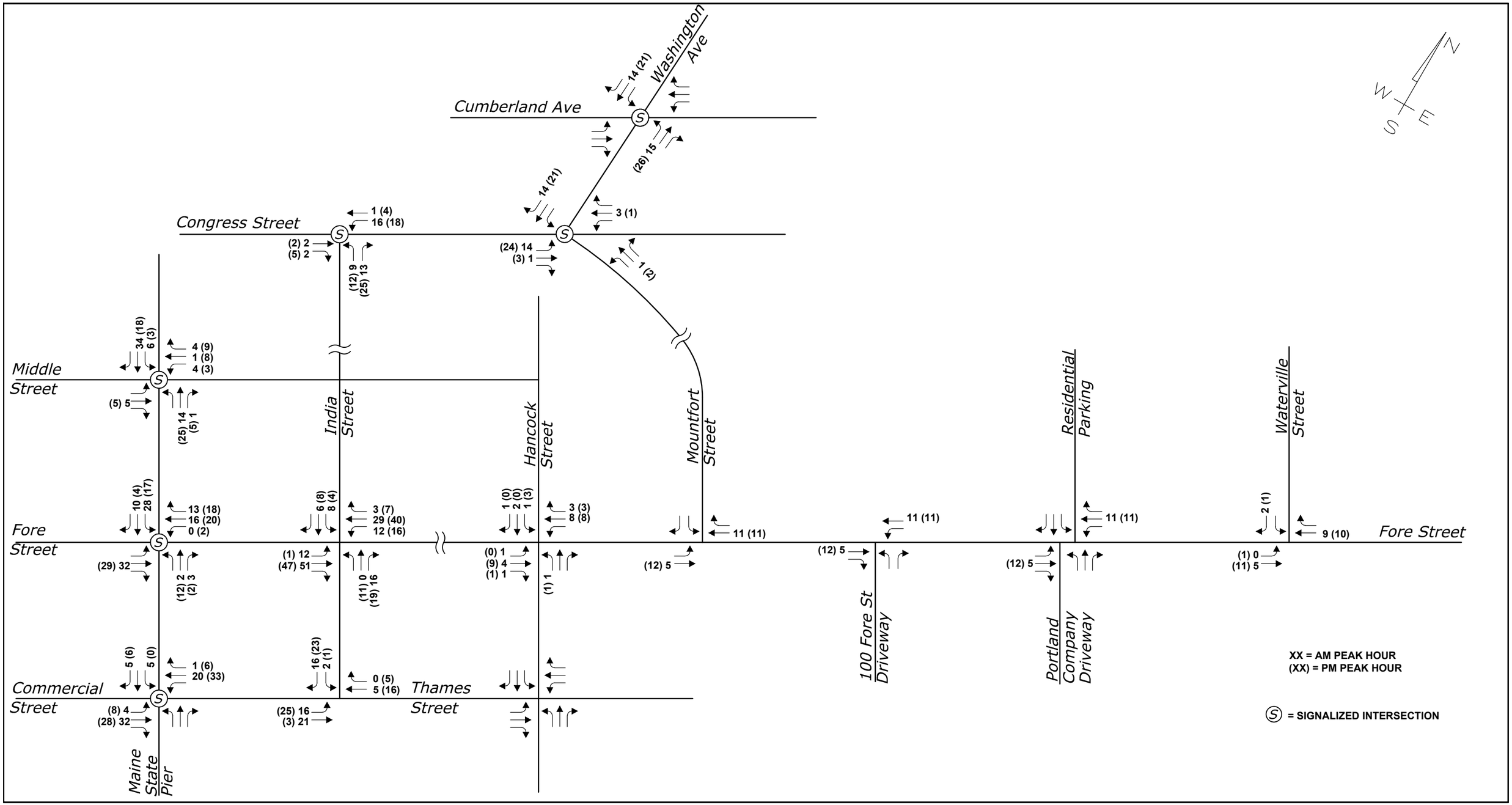

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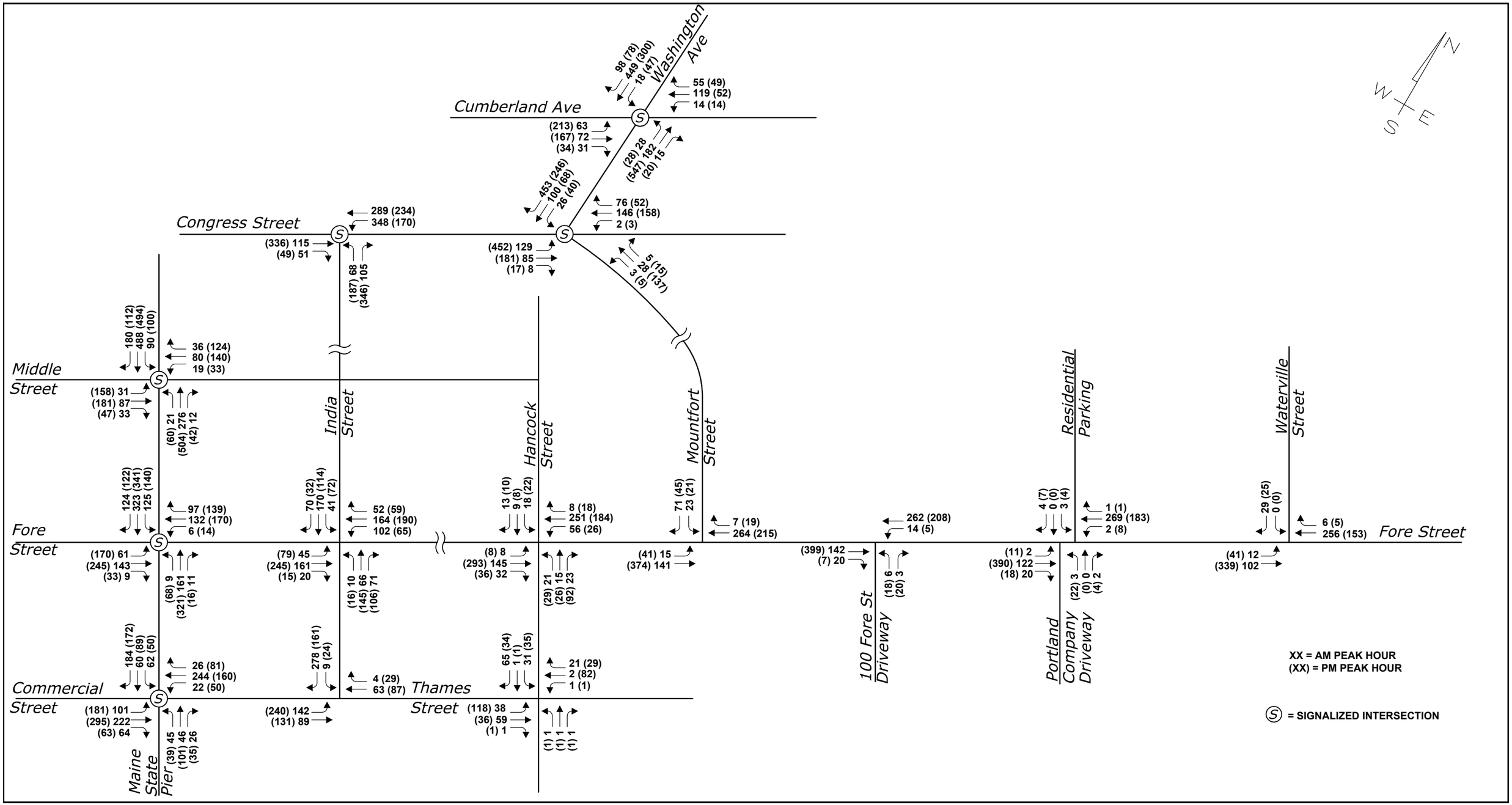
Figure No. 5



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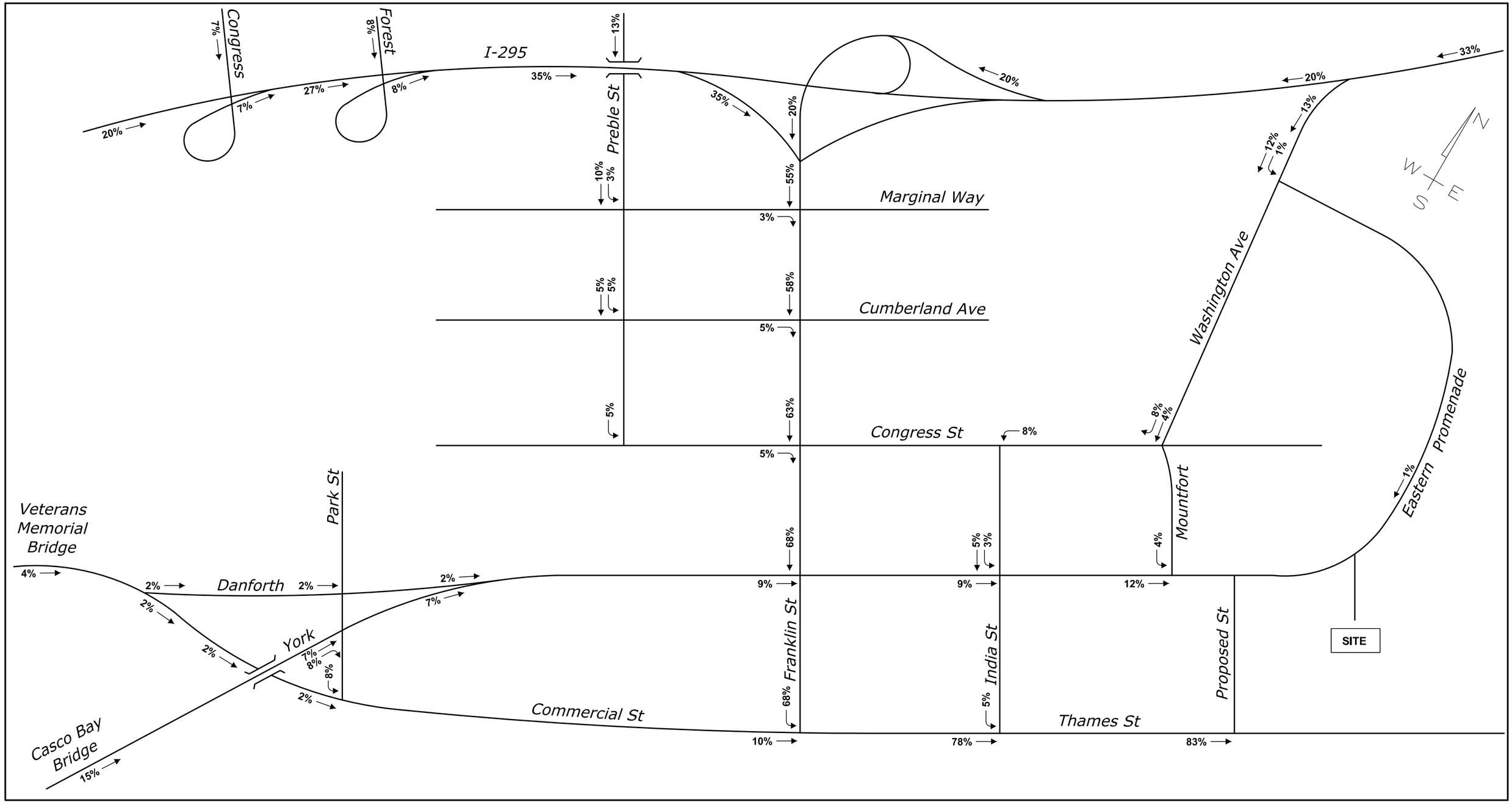
AM Inbound Trip Distribution

Figure No. 6



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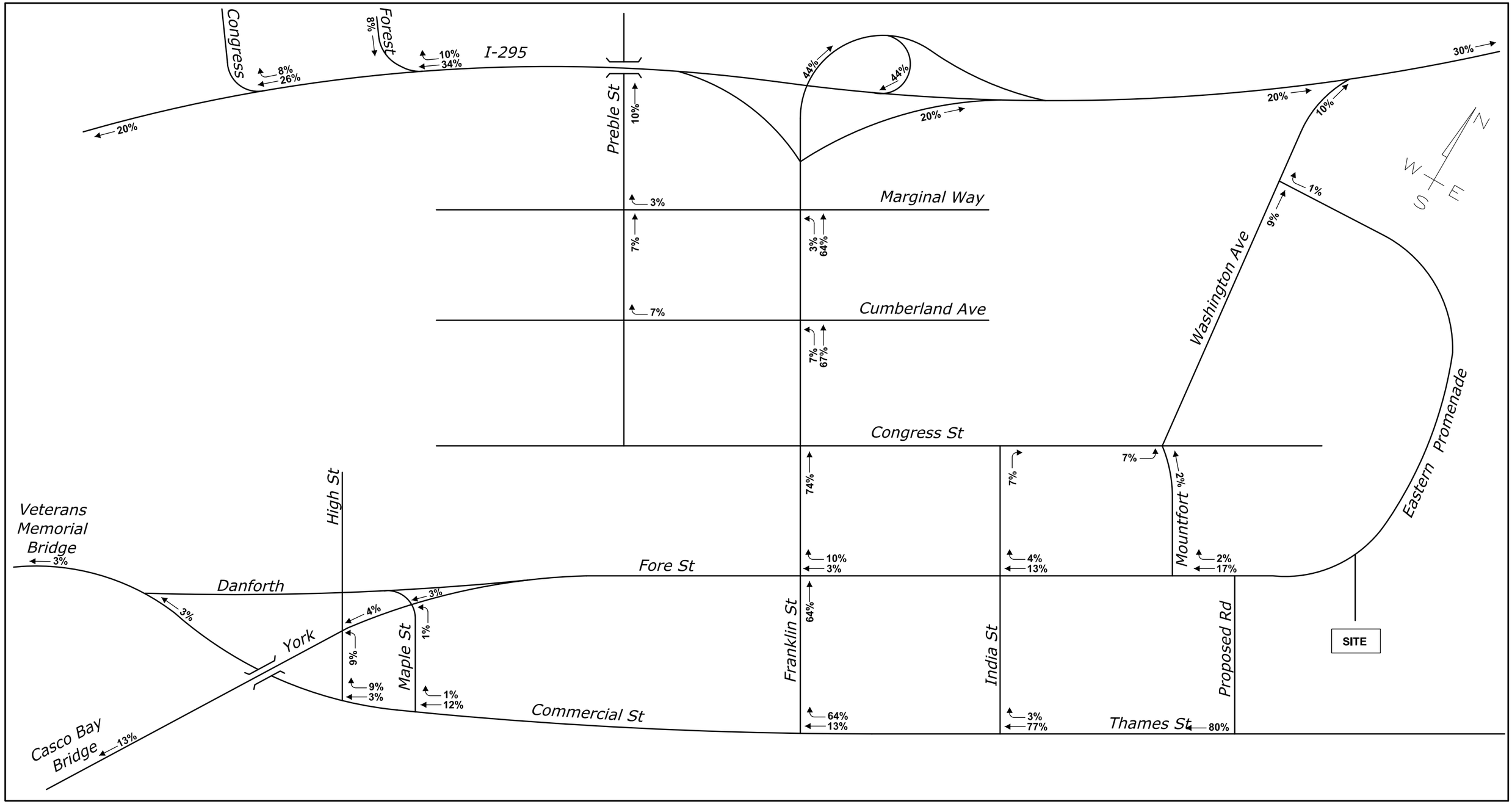
AM Outbound Trip Distribution

Figure No. 7



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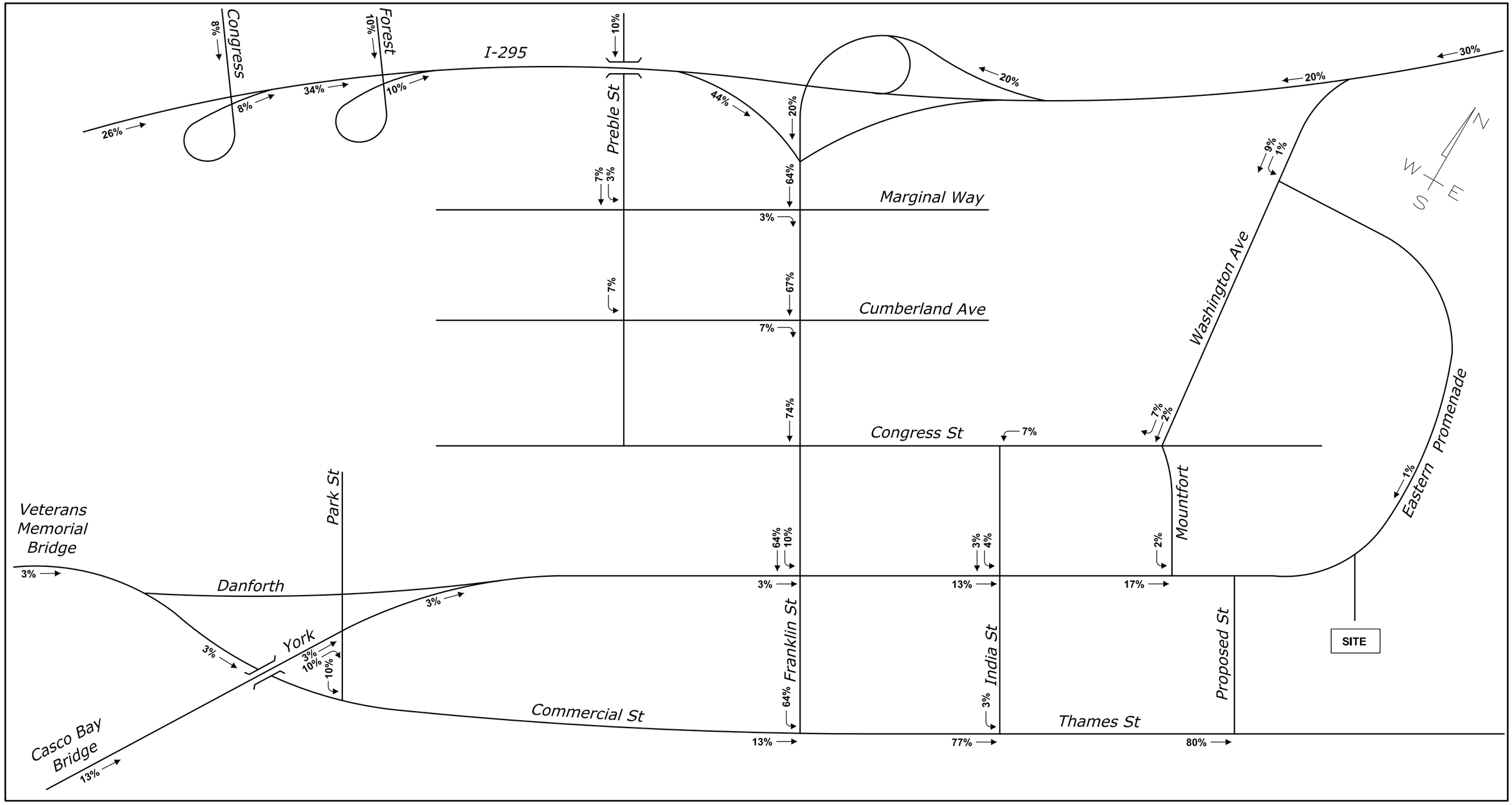
PM Inbound Trip Distribution

Figure No. 8



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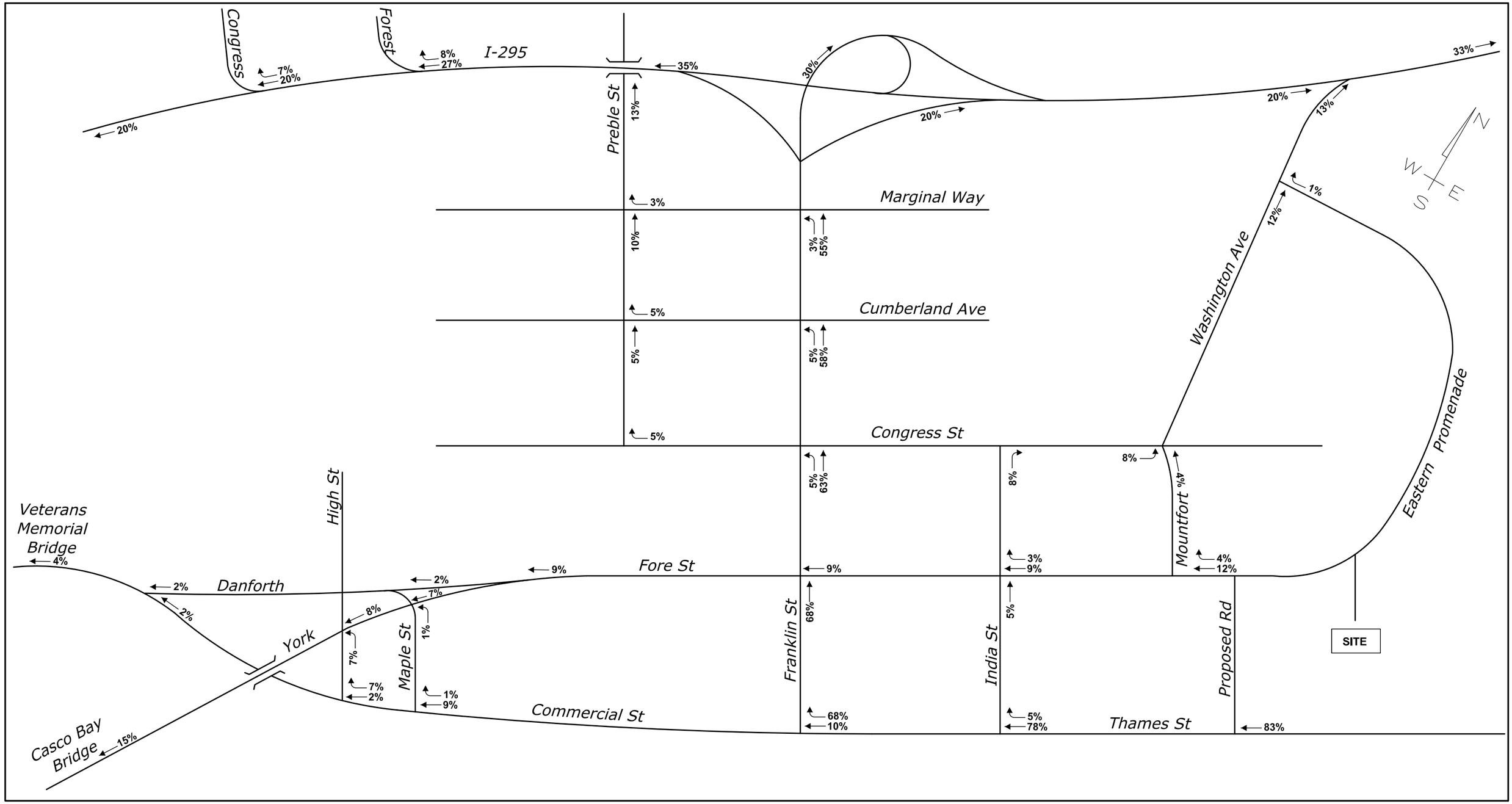
PM Outbound Trip Distribution

Figure No. 9



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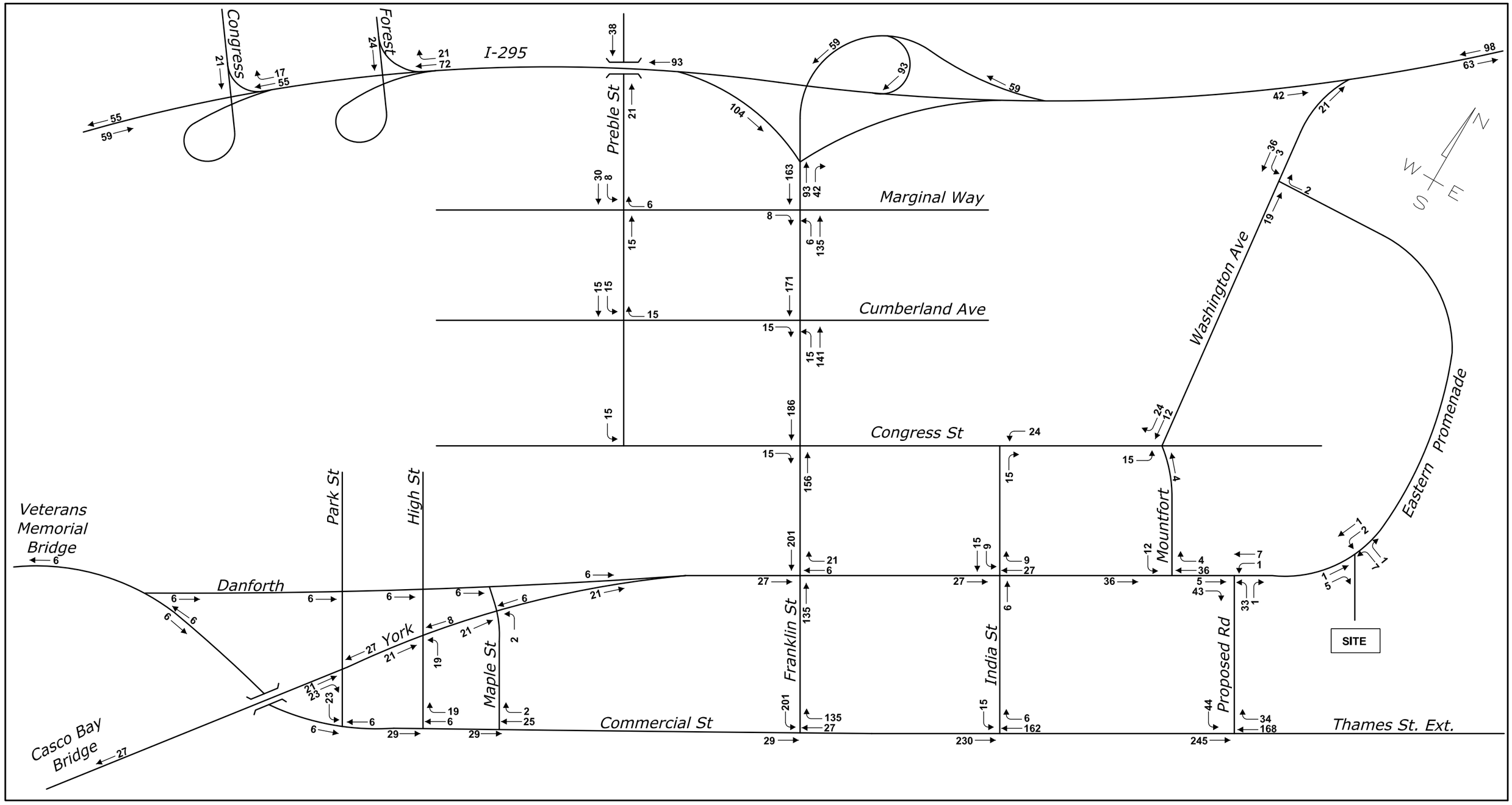
AM Trip Assignment

Figure No. 10



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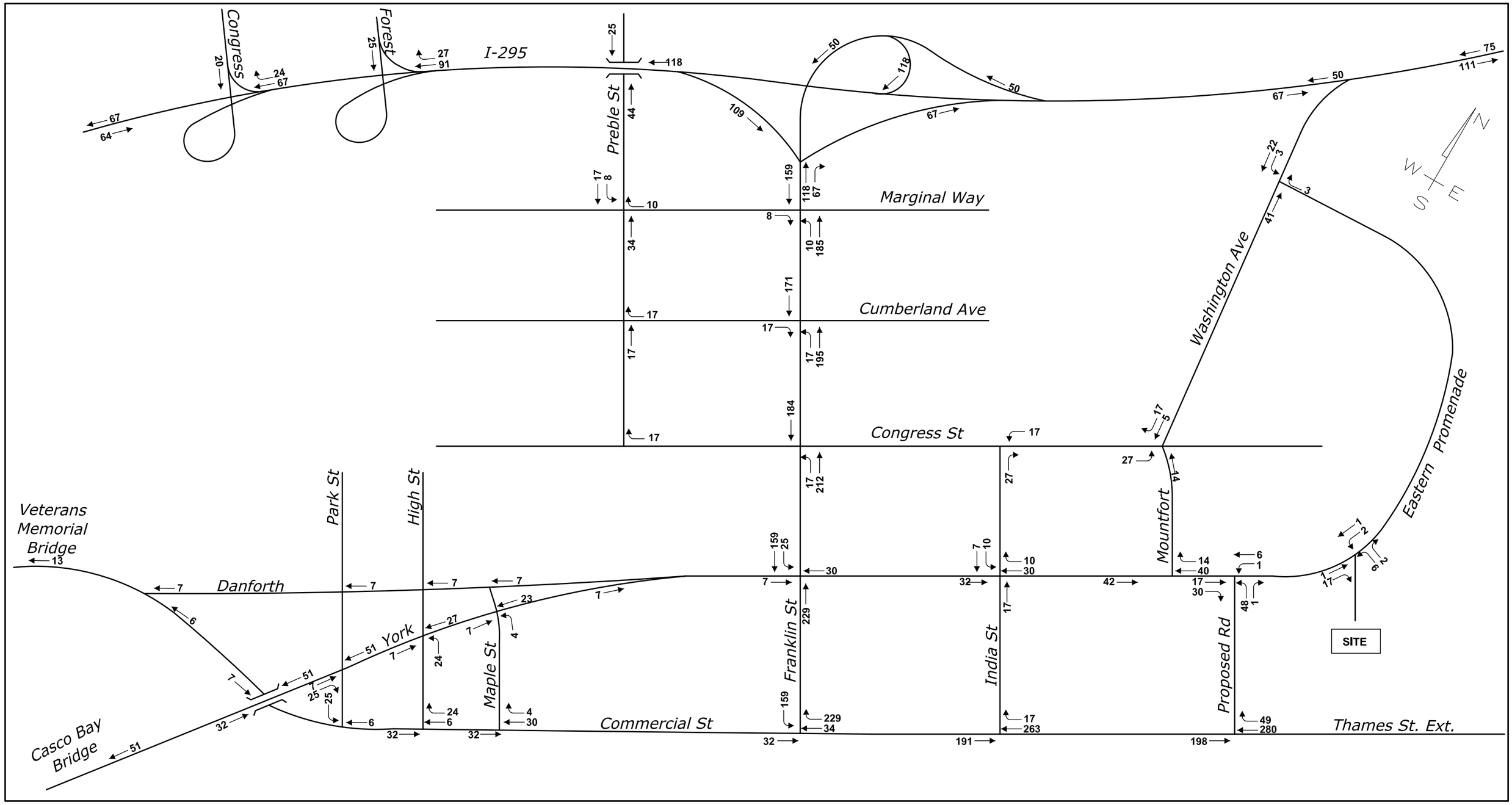
PM Trip Assignment

Figure No. 11



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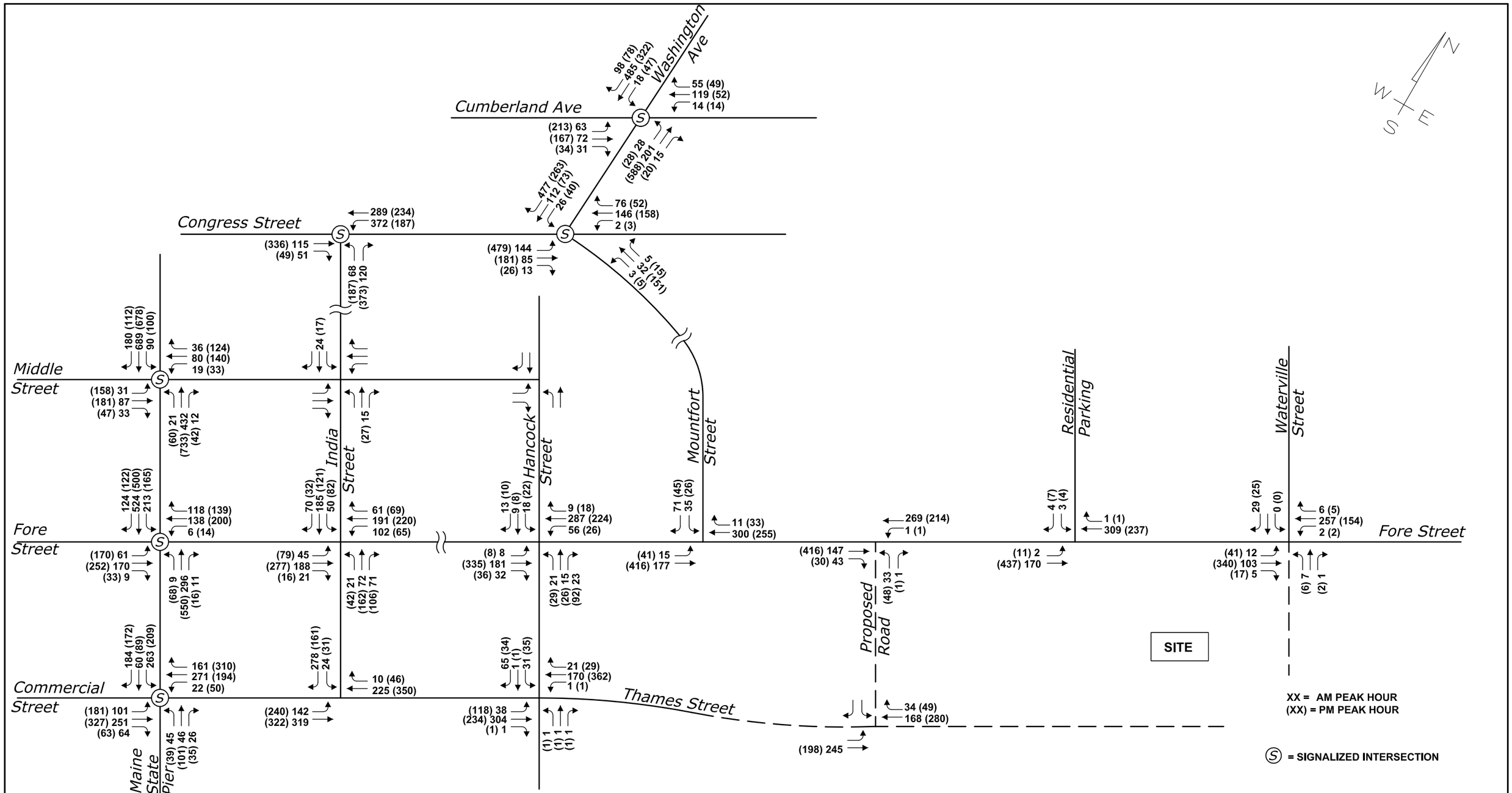
2027 Postdevelopment DHV

Figure No. 12



58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

Design:	ET	Scale:	NONE
Draft:	LAN	Date:	AUGUST 2016
Checked:	RED	File Name:	3138-TRAFF3.dwg

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Other Development

PORTLAND COMPANY
PORTLAND, MAINE

Design:	EAT	Scale:	NONE
Draft:	LAN	Date:	JULY 2016
Checked:	RED	File Name:	3138-Aerial.dwg

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58 Fore Street Trip Generation Summary
Portland, Maine
December 1, 2016

Development Block	Use	Land Use Code	Size	Units		AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
B1															
	Retail	814 - Specialty Retail	7,878	SF		6	60%	40%	4	2	21	45%	55%	9	12
	Residential	220 - Apartment	91	Dwelling Units		46	20%	80%	9	37	56	65%	35%	36	20
	Office	710 - General Office Building	79,000	SF		155	90%	10%	140	15	149	15%	85%	22	127
					B1 Total:	**207**	**74%**	**26%**	**153**	**54**	**226**	**30%**	**70%**	**67**	**159**
B2															
	Retail	814 - Specialty Retail	26,895	SF		20	60%	40%	12	8	73	45%	55%	33	40
	Residential	220 - Apartment	19	Dwelling Units		10	20%	80%	2	8	12	65%	35%	8	4
	Office	710 - General Office Building	25,617	SF		63	90%	10%	57	6	61	15%	85%	9	52
					B2 Total:	**93**	**76%**	**24%**	**71**	**22**	**146**	**34%**	**66%**	**50**	**96**
B3															
	Retail	814 - Specialty Retail	11,500	SF		9	60%	40%	5	4	31	45%	55%	14	17
	Office	710 - General Office Building	19,300	SF		50	90%	10%	45	5	48	15%	85%	7	41
					B3 Total:	**59**	**85%**	**15%**	**50**	**9**	**79**	**27%**	**73%**	**21**	**58**
B4															
	Residential	220 - Apartment	275	Dwelling Units		140	20%	80%	28	112	171	65%	35%	111	60
	Retail	814 - Specialty Retail	4,000	SF		3	60%	40%	2	1	11	45%	55%	5	6
					B4 Total:	**143**	**21%**	**79%**	**30**	**113**	**182**	**64%**	**36%**	**116**	**66**
B5															
	Residential	230 - Residential Condominium/Townhouse	108	Dwelling Units		48	15%	85%	7	41	56	65%	35%	36	20
	Hotel	310 - Hotel	132	Rooms		74	60%	40%	44	30	78	55%	45%	43	35
	Restaurant	932 - High Turnover (Sit Down) Restaurant	3,800	SF		44	50%	50%	22	22	41	60%	40%	25	16
					B5 Total:	**166**	**44%**	**56%**	**73**	**93**	**175**	**59%**	**41%**	**104**	**71**
B6															
	Residential	230 - Residential Condominium/Townhouse	131	Dwelling Units		58	15%	85%	9	49	68	65%	35%	44	24
	Residential	220 - Apartment	14	Dwelling Units		7	20%	80%	1	6	9	65%	35%	6	3
					B6 Total:	**65**	**15%**	**85%**	**10**	**55**	**77**	**65%**	**35%**	**50**	**27**
B7															
	Marina Facilities	N/A	2,600	SF		36	72%	28%	26	10	36	28%	72%	10	26
					B7 Total:	36	72%	28%	26	10	36	28%	72%	10	26
					Site Total:	**769**	**54%**	**46%**	**413**	**356**	**921**	**45%**	**55%**	**418**	**503**

				AM Trip Generation	% In AM	% Out AM	AM Trips In	AM Trips Out	PM Trip Generation	% In PM	% Out PM	PM Trips In	PM Trips Out
			B1-B6 Subtotal:	733	53%	47%	387	346	885	46%	54%	408	477
			NCHRP 684 Reduction:	102	12%	14%	51	51	150	18%	15%	75	75
			B1-B6 Reduced:	631	53%	47%	336	295	735	45%	55%	333	402
35.8%	Residential	Other Modes Reduction:		106			19	87	117			77	40
10%	Hotel	Other Modes Reduction:		6			4	2	7			3	4
18%	Non-Residential	Other Modes Reduction:		49			43	6	62			15	47
			B1-B6 Total:	**470**	**57%**	**43%**	**270**	**200**	**549**	**43%**	**57%**	**238**	**311**
			Marina Total:	36	72%	28%	26	10	36	28%	72%	10	26
			Site Total:	**506**	**58%**	**42%**	**296**	**210**	**585**	**42%**	**58%**	**248**	**337**

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	B1-B6	**Date:**	1-Dec
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	268	242	26
Retail	814	50,273	SF	38	23	15
Restaurant	932	3,800	SF	44	22	22
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	309	56	253
Hotel	310	132	Rooms	74	44	30
All Other Land Uses[2]		-	SF	0	0	0
Total				733	387	346

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	4		2	0	1	0
Restaurant	7	2		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	4	0		0
Hotel	7	1	1	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	733	387	346
Internal Capture Percentage	14%	13%	15%
External Vehicle-Trips[3]	631	336	295
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	10%	46%
Retail	57%	47%
Restaurant	55%	50%
Cinema/Entertainment	N/A	N/A
Residential	4%	5%
Hotel	2%	30%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**B1-B6 AM Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	242	242	1.00	26	26
Retail	1.00	23	23	1.00	15	15
Restaurant	1.00	22	22	1.00	22	22
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	56	56	1.00	253	253
Hotel	1.00	44	44	1.00	30	30

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	16	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	51	0		0
Hotel	23	4	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	5	0	0	0
Retail	10		11	0	1	0
Restaurant	34	2		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	7	4	4	0		0
Hotel	7	1	1	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	23	219	242	219	0	0
Retail	13	10	23	10	0	0
Restaurant	12	10	22	10	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	54	56	54	0	0
Hotel	1	43	44	43	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	14	26	14	0	0
Retail	7	8	15	8	0	0
Restaurant	11	11	22	11	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	241	253	241	0	0
Hotel	9	21	30	21	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	58 Fore Street	**Organization:**	Gorrill Palmer
Project Location:	Portland, Maine	**Performed By:**	ET
Scenario Description:	B1-B6	**Date:**	1-Dec
Analysis Year:	2016	**Checked By:**	RED
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	123,917	SF	258	38	220
Retail	814	50,273	SF	136	61	75
Restaurant	932	3,800	SF	41	25	16
Cinema/Entertainment		-	SF	0	0	0
Residential	220/230	638	Units	372	241	131
Hotel	310	132	Rooms	78	43	35
All Other Land Uses[2]		-	SF	0	0	0
Total				885	408	477

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	4	0
Retail	2		7	0	20	4
Restaurant	0	7		0	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	4	0		4
Hotel	0	1	1	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	885	408	477
Internal Capture Percentage	17%	18%	16%
External Vehicle-Trips[3]	735	333	402
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	18%	5%
Retail	31%	44%
Restaurant	52%	69%
Cinema/Entertainment	N/A	N/A
Residential	11%	15%
Hotel	21%	6%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	58 Fore Street
Analysis Period:	**B1-B6 PM Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	38	38		1.00	220	220
Retail	1.00	61	61		1.00	75	75
Restaurant	1.00	25	25		1.00	16	16
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	241	241		1.00	131	131
Hotel	1.00	43	43		1.00	35	35

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		44	9	0	4	0
Retail	2		22	3	20	4
Restaurant	0	7		1	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	5	55	28	0		4
Hotel	0	6	24	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	10	0
Retail	12		7	0	111	7
Restaurant	11	31		0	39	31
Cinema/Entertainment	2	2	1		10	0
Residential	22	6	4	0		5
Hotel	0	1	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	31	38		31	0	0
Retail	19	42	61		42	0	0
Restaurant	13	12	25		12	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	27	214	241		214	0	0
Hotel	9	34	43		34	0	0
All Other Land Uses[3]	0	0	0		0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	210	220		210	0	0
Retail	33	42	75		42	0	0
Restaurant	11	5	16		5	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	19	112	131		112	0	0
Hotel	2	33	35		33	0	0
All Other Land Uses[3]	0	0	0		0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

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JOB 3138-58 Fore Street Redevelopment
SHEET NO. _____ OF _____
CALCULATED BY ET DATE 8/26/16
CHECKED BY _____ DATE _____
SCALE _____

Marina Trip Generation

Info from ATM:

- 220 slips → 140 seasonal users, 80 transient boaters
- Daily usage peaks around 10%, maybe more
- 10% of daily non-transient users are on-site residents
- 90% of daily non-transient users are offsite residents
- 30% of off site residents are Islanders commuting to the Peninsula
- 9 marina employees
- 4 mega-yacht slips

Assumptions:

- 15% of slips is peak daily usage to be conservative (33 slips)
- 36% are transient boaters (80/220 = 36% → 12 slips)
- 21 non-transient slips used during peak (33 slips − 12 slips)
- 2 on-site residents used slips during peak (21 × 0.10 = 2.1)
- 19 off-site residents use slips during peak (21 × 0.90 = 18.9)
- 6 Islanders commuting to Peninsula (19 × 0.30 = 5.7)
- 1 provisioning vehicle per mega-yacht slip (conservative)
- Transient boaters = 0 trip ends
- On-site residents = 0 trip ends
- Off-site residents = 1 AM trip end, 1 PM trip end
  - Islanders leave during AM and return during PM
  - Other off-site enter during AM and exit during PM
- Employees enter during AM and exit during PM
- Provisioning vehicles enter and exit during the peak hour (conservative)

AM Peak Hour	PM Peak Hour
- 9 employees in	- 9 employees out
- 6 Islanders out	- 6 Islanders in
- 13 seasonal in	- 13 seasonal out
- 4 provisional veh. in	- 4 provisional veh in
- 4 provisional veh. out	- 4 provisional veh out
36 trip ends (26 in / 10 out)	36 trip ends (10 in / 26 out)

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4200	4228	4147	4212	4165	4187
Vehs Exited	4207	4227	4144	4217	4145	4186
Starting Vehs	84	77	80	91	69	75
Ending Vehs	77	78	83	86	89	73
Denied Entry Before	0	0	2	0	0	0
Denied Entry After	0	3	0	2	2	1
Travel Distance (mi)	1244	1241	1215	1232	1237	1234
Travel Time (hr)	84.4	86.7	83.0	85.8	87.0	85.4
Total Delay (hr)	37.3	39.6	37.0	39.0	40.3	38.6
Total Stops	6457	6574	6268	6411	6539	6449
Fuel Used (gal)	64.2	65.2	63.4	64.7	65.1	64.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4200	4228	4147	4212	4165	4187
Vehs Exited	4207	4227	4144	4217	4145	4186
Starting Vehs	84	77	80	91	69	75
Ending Vehs	77	78	83	86	89	73
Denied Entry Before	0	0	2	0	0	0
Denied Entry After	0	3	0	2	2	1
Travel Distance (mi)	1244	1241	1215	1232	1237	1234
Travel Time (hr)	84.4	86.7	83.0	85.8	87.0	85.4
Total Delay (hr)	37.3	39.6	37.0	39.0	40.3	38.6
Total Stops	6457	6574	6268	6411	6539	6449
Fuel Used (gal)	64.2	65.2	63.4	64.7	65.1	64.5

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.6	6.7	5.3	6.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	6.9	8.1	8.6	6.1	7.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	2.3	1.2	6.1	5.9	2.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Thames St & Hancock St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.0
Total Del/Veh (s)	3.6	3.2	8.0	2.3	5.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	0.5	0.5	1.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	1.4	0.0
Total Del/Veh (s)	0.5	0.6	5.4	5.6	0.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.3	0.2
Total Del/Veh (s)	2.9	0.4	0.2	0.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.2
Total Del/Veh (s)	17.6	16.1	10.9	13.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

9: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.3	0.1
Total Del/Veh (s)	21.0	13.7	11.5	25.1	15.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.2	0.5	1.8	0.2	0.6
Total Del/Veh (s)	26.3	17.5	12.6	11.4	17.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.6	1.3	0.0	0.7
Total Del/Veh (s)	16.1	35.3	19.3	20.5	20.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.8	0.1	0.0	0.0	0.5
Total Del/Veh (s)	12.2	16.3	18.1	17.1	16.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	1	0	0	0	1

43: Middle St./Middle St & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.4	0.0	0.2	1.4	0.4
Total Del/Veh (s)	15.3	15.2	14.6	14.4	15.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	31.9
Denied Entry Before	0
Denied Entry After	1

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	66	90	36	141
Average Queue (ft)	42	38	27	66
95th Queue (ft)	63	66	44	111
Link Distance (ft)		495	381	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	10	6		
Queuing Penalty (veh)	9	9		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	120	109	94
Average Queue (ft)	37	51	53	39
95th Queue (ft)	68	91	87	67
Link Distance (ft)	527	350	328	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	57	36	67
Average Queue (ft)	1	9	17	26
95th Queue (ft)	11	38	35	48
Link Distance (ft)	350	421	224	257
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Thames St & Hancock St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	29	48	31
Average Queue (ft)	30	3	27	13
95th Queue (ft)	46	17	39	34
Link Distance (ft)	257	165	381	267
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	82	38
Average Queue (ft)	31	4
95th Queue (ft)	62	23
Link Distance (ft)	1097	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: 100 Fore St & Existing Driveways & Fore

Movement	WB	NB	NW	NW
Directions Served	<LT	LR	L	R
Maximum Queue (ft)	48	51	30	36
Average Queue (ft)	6	8	3	2
95th Queue (ft)	29	32	19	15
Link Distance (ft)	549	182	230	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 7: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	39	31
Average Queue (ft)	19	3
95th Queue (ft)	42	17
Link Distance (ft)	739	549
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	189	162	94	305
Average Queue (ft)	79	75	82	118
95th Queue (ft)	142	135	109	243
Link Distance (ft)	629	351		542
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			15	5
Queuing Penalty (veh)			45	19

Intersection: 9: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	64	215	140	188	95	253
Average Queue (ft)	19	90	102	53	22	108
95th Queue (ft)	49	202	168	133	67	201
Link Distance (ft)	1097	196		542		386
Upstream Blk Time (%)		2				
Queuing Penalty (veh)		8				
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	9	4	0	
Queuing Penalty (veh)		4	11	4	0	

Intersection: 10: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	206	392	86	107	123
Average Queue (ft)	98	168	27	42	52
95th Queue (ft)	204	319	61	88	96
Link Distance (ft)	196	804		310	442
Upstream Blk Time (%)	6				
Queuing Penalty (veh)	13				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	1	

Intersection: 11: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	92	98	167	54	178	76	174	241	83	237	174
Average Queue (ft)	36	35	65	29	57	26	69	87	24	120	23
95th Queue (ft)	75	80	137	60	131	66	139	177	61	200	85
Link Distance (ft)		306	306		265			299	299	495	
Upstream Blk Time (%)								0			
Queuing Penalty (veh)								0			
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				26	29	17	0	2		4	0
Queuing Penalty (veh)				19	20	15	1	2		1	0

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	122	96	206	236	91	83	175
Average Queue (ft)	22	48	97	109	33	21	86
95th Queue (ft)	68	90	176	195	70	60	148
Link Distance (ft)	195		247	247	306	306	527
Upstream Blk Time (%)	0		0	0			
Queuing Penalty (veh)	0		0	1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	3					
Queuing Penalty (veh)	0	2					

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	211	253	135	140	132	110	66
Average Queue (ft)	106	130	55	64	53	39	18
95th Queue (ft)	186	216	104	113	110	83	51
Link Distance (ft)	450	450	247	247	546	292	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							50
Storage Blk Time (%)						7	1
Queuing Penalty (veh)						2	1

Network Summary

Network wide Queuing Penalty: 187

Intersection: 8: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.0	15.9	14.2	28.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	19	18	21	11
Cycles @ Minimum (%)	4	9	23	11
Cycles Maxed Out (%)	53	0	5	4
Cycles with Peds (%)	0	36	26	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	24.0	21.0	44.0	20.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.6	18.3	16.2	39.2	16.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	17	6	16	11	16
Cycles @ Minimum (%)	6	0	9	0	9
Cycles Maxed Out (%)	45	45	28	34	41
Cycles with Peds (%)	0	38	25	44	13

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 10: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	26.0	25.0	27.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	18.4	22.2	18.4	22.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	5	1	5	1
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	39	63	16	63
Cycles with Peds (%)	28	1	13	3

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	32.1	12.9	11.1	17.8	8.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	16	19	16	7	21
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	7	18	18	32	53
Cycles with Peds (%)	20	5	0	23	7

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	22.0	22.3	22.0	21.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	27	8	8	14
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	9	3	11	3
Cycles with Peds (%)	3	59	27	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	24.5	19.5	25.8
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	3	9	22
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	28	0	27
Cycles with Peds (%)	0	33	4

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6184	5999	6201	5993	6159	6106
Vehs Exited	5925	5796	5992	5770	5906	5878
Starting Vehs	227	207	202	199	204	202
Ending Vehs	486	410	411	422	457	429
Denied Entry Before	4	5	3	1	2	2
Denied Entry After	591	788	627	686	509	638
Travel Distance (mi)	3023	2980	3022	2943	2999	2993
Travel Time (hr)	642.7	710.9	651.1	675.7	575.4	651.2
Total Delay (hr)	545.3	614.7	553.4	580.9	478.8	554.6
Total Stops	11135	10800	11219	11011	10974	11021
Fuel Used (gal)	240.2	254.9	242.6	245.2	225.3	241.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6184	5999	6201	5993	6159	6106
Vehs Exited	5925	5796	5992	5770	5906	5878
Starting Vehs	227	207	202	199	204	202
Ending Vehs	486	410	411	422	457	429
Denied Entry Before	4	5	3	1	2	2
Denied Entry After	591	788	627	686	509	638
Travel Distance (mi)	3023	2980	3022	2943	2999	2993
Travel Time (hr)	642.7	710.9	651.1	675.7	575.4	651.2
Total Delay (hr)	545.3	614.7	553.4	580.9	478.8	554.6
Total Stops	11135	10800	11219	11011	10974	11021
Fuel Used (gal)	240.2	254.9	242.6	245.2	225.3	241.6

1: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	3.0	1.9	0.7	1.2
Total Del/Veh (s)	15.7	31.2	17.0	22.2	19.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

2: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.8	0.1	0.0	0.2	0.6
Total Del/Veh (s)	11.6	15.6	18.3	14.4	15.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	1.3	0.2
Total Del/Veh (s)	9.8	14.8	13.1	12.7	11.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Performance by approach

Approach	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.0	4.0	4.0
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

5: Somerset/Fox & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.3	2.4	0.4
Total Del/Veh (s)	25.3	29.9	38.4	23.4	26.9
Denied Entry Before	0	0	0	1	1
Denied Entry After	0	0	0	0	0

6: Marginal & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.2	0.1
Total Del/Veh (s)	24.6	29.7	47.8	44.2	31.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Off Ramp Performance by approach

Approach	EB	SE	NW	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	85.4	100.2	2.5	61.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

44: Congress St. & Franklin SB Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	3.0	0.0	0.4
Total Del/Veh (s)	20.9	31.9	6.0	19.3
Denied Entry Before	0	1	0	1
Denied Entry After	0	0	0	0

46: Cumberland Ave. & Franklin SB Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	3.4	0.0	0.5
Total Del/Veh (s)	14.3	34.9	10.5	17.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

122: Congress St. & Franklin NB Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	199.9	88.5
Total Del/Veh (s)	10.1	18.4	141.1	66.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	74	74

123: Franklin St. & Franklin NB Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.5	5.0	3.8
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

124: Cumberland Ave. & Franklin NB Performance by approach

Approach	NB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	3.2	1.0
Total Del/Veh (s)	8.3	11.9	46.0	21.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	130.4
Total Del/Veh (s)	177.1
Denied Entry Before	2
Denied Entry After	638

Intersection: 1: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	97	91	140	59	159	70	134	172	105	234	85
Average Queue (ft)	34	28	53	28	64	27	56	71	23	114	20
95th Queue (ft)	80	70	113	59	133	65	111	147	69	194	62
Link Distance (ft)		293	293		134			299		384	
Upstream Blk Time (%)					3						
Queuing Penalty (veh)					0						
Storage Bay Dist (ft)	200			25		25	160		160		150
Storage Blk Time (%)				23	32	14	0	1	0	3	0
Queuing Penalty (veh)				16	23	13	0	1	0	1	0

Intersection: 2: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	97	97	212	209	92	105	168
Average Queue (ft)	20	48	80	93	29	21	82
95th Queue (ft)	57	89	165	174	68	65	142
Link Distance (ft)	193		256	256	293	293	290
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	3					
Queuing Penalty (veh)	0	2					

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	104	113	120	146	112	100	71
Average Queue (ft)	65	75	52	63	55	39	21
95th Queue (ft)	113	119	102	114	95	82	57
Link Distance (ft)	88	88	256	256	550	536	
Upstream Blk Time (%)	6	8					
Queuing Penalty (veh)	23	31					
Storage Bay Dist (ft)							50
Storage Blk Time (%)						7	2
Queuing Penalty (veh)						3	2

Intersection: 4:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Somerset/Fox & Franklin

Movement	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	323	469	475	132	279	252	90	84	86	161	142
Average Queue (ft)	49	263	292	23	163	130	39	34	29	88	71
95th Queue (ft)	181	458	474	73	262	223	72	71	67	146	121
Link Distance (ft)		466	466		382	382			764	563	
Upstream Blk Time (%)		0	1								
Queuing Penalty (veh)		3	6								
Storage Bay Dist (ft)	300			230			275	275			200
Storage Blk Time (%)		6			2						
Queuing Penalty (veh)		4			1						

Intersection: 6: Marginal & Franklin

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	T	R	L	T	TR	L	T	R	LT	R
Maximum Queue (ft)	182	191	198	194	296	340	338	30	339	329	160	150
Average Queue (ft)	146	158	179	169	146	174	137	28	181	202	71	76
95th Queue (ft)	195	190	196	184	249	307	273	36	316	327	132	133
Link Distance (ft)	133	133	133	133		466	466		861	861	609	609
Upstream Blk Time (%)	14	24	44	49		0	0					
Queuing Penalty (veh)	83	143	262	294		0	0					
Storage Bay Dist (ft)					335			1				
Storage Blk Time (%)					0	1		39	28			
Queuing Penalty (veh)					0	1		41	40			

Intersection: 9: Off Ramp

Movement	EB	EB	SE	SE	SE	B38	B38	NW	NW
Directions Served	R	R	T	T	T	T	T	T	TR
Maximum Queue (ft)	583	568	284	268	258	2192	2173	128	152
Average Queue (ft)	367	341	259	249	248	1927	1922	12	19
95th Queue (ft)	643	606	276	271	274	2764	2757	74	87
Link Distance (ft)	1096	1096	200	200	200	2138	2138	133	133
Upstream Blk Time (%)			82	72	69	76	75	0	0
Queuing Penalty (veh)			0	0	0	0	0	1	1
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 44: Congress St. & Franklin SB

Movement	SE	SE	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	410	437	173	162	73	79
Average Queue (ft)	167	218	37	87	25	21
95th Queue (ft)	346	416	98	152	60	59
Link Distance (ft)	418	418	393		103	103
Upstream Blk Time (%)	0	1				0
Queuing Penalty (veh)	1	6				1
Storage Bay Dist (ft)				150		
Storage Blk Time (%)				2		
Queuing Penalty (veh)				2		

Intersection: 46: Cumberland Ave. & Franklin SB

Movement	SB	SB	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	382	435	303	125	52	79
Average Queue (ft)	147	178	79	102	14	29
95th Queue (ft)	334	385	232	142	41	68
Link Distance (ft)	774	774	455		104	104
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)				100		
Storage Blk Time (%)			0	20		
Queuing Penalty (veh)			0	23		

Intersection: 122: Congress St. & Franklin NB

Movement	NW	NW	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	99	124	112	119	543	175
Average Queue (ft)	43	49	57	67	488	174
95th Queue (ft)	89	99	111	122	615	178
Link Distance (ft)	632	632	103	103	491	
Upstream Blk Time (%)			1	4	74	
Queuing Penalty (veh)			3	8	0	
Storage Bay Dist (ft)						150
Storage Blk Time (%)					0	77
Queuing Penalty (veh)					0	159

Intersection: 123: Franklin St. & Franklin NB

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	116	149
Average Queue (ft)	20	31
95th Queue (ft)	76	103
Link Distance (ft)	641	641
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 124: Cumberland Ave. & Franklin NB

Movement	NB	NB	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	130	116	76	112	399	175
Average Queue (ft)	54	45	25	46	133	143
95th Queue (ft)	111	98	62	94	369	212
Link Distance (ft)	424	424	104	104	1167	
Upstream Blk Time (%)			0	1		
Queuing Penalty (veh)			0	2		
Storage Bay Dist (ft)						150
Storage Blk Time (%)						26
Queuing Penalty (veh)						24

Network Summary

Network wide Queuing Penalty: 1223

Intersection: 1: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	30.6	12.3	10.5	18.4	8.5
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	12	22	22	9	21
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	3	15	10	36	55
Cycles with Peds (%)	21	7	0	26	9

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 2: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	18.3	21.0	19.1	20.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	33	12	16	19
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	3	1	5	1
Cycles with Peds (%)	0	53	19	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	20.9	18.2	19.8
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	20	16	23
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	15	0	12
Cycles with Peds (%)	0	26	4

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Somerset/Fox & Franklin

Phase	1	2	4	5	6	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	SWTL
Maximum Green (s)	14.5	44.5	9.5	9.5	49.5	9.5
Minimum Green (s)	3.0	8.0	3.0	3.0	8.0	3.0
Recall	None	None	None	None	C-Min	None
Avg. Green (s)	25.4	27.2	10.3	5.7	49.9	14.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	8	3	51	3	3
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	24	5	5	0	97	8
Cycles with Peds (%)	0	0	24	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 6: Marginal & Franklin

Phase	1	2	4	5	6	7	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	NEL	SWTL
Maximum Green (s)	10.0	48.0	27.0	15.0	43.0	13.0	8.0
Minimum Green (s)	3.0	10.0	15.0	3.0	10.0	1.0	5.0
Recall	None	None	None	None	C-Min	None	None
Avg. Green (s)	10.0	48.0	27.0	13.1	46.2	10.3	16.9
g/C Ratio	NA	NA	NA	NA	NA	-0.01	NA
Cycles Skipped (%)	0	0	0	0	0	37	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	97	53	100	17	97
Cycles with Peds (%)	0	0	14	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 44: Congress St. & Franklin SB

Phase	1	2	3
Movement(s) Served	SETL	NESW	SWTL
Maximum Green (s)	48.0	26.0	8.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	52.9	26.0	5.5
g/C Ratio	NA	NA	-0.01
Cycles Skipped (%)	0	0	15
Cycles @ Minimum (%)	0	0	21
Cycles Maxed Out (%)	100	100	9
Cycles with Peds (%)	33	97	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 46: Cumberland Ave. & Franklin SB

Phase	1	2	3
Movement(s) Served	SBTL	NESW	SWTL
Maximum Green (s)	54.0	22.0	6.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	59.5	21.2	4.9
g/C Ratio	NA	NA	-0.01
Cycles Skipped (%)	0	0	43
Cycles @ Minimum (%)	0	0	29
Cycles Maxed Out (%)	100	81	11
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4785	4784	4844	4840	4891	4827
Vehs Exited	4797	4762	4850	4867	4845	4826
Starting Vehs	125	110	126	125	104	107
Ending Vehs	113	132	120	98	150	120
Denied Entry Before	1	0	2	0	0	0
Denied Entry After	1	0	4	0	1	0
Travel Distance (mi)	1705	1714	1723	1753	1749	1729
Travel Time (hr)	118.0	117.4	129.2	118.5	123.6	121.3
Total Delay (hr)	56.3	55.4	66.8	55.3	60.5	58.9
Total Stops	8426	8322	8731	8688	8928	8618
Fuel Used (gal)	85.0	85.7	88.6	87.4	88.6	87.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4785	4784	4844	4840	4891	4827
Vehs Exited	4797	4762	4850	4867	4845	4826
Starting Vehs	125	110	126	125	104	107
Ending Vehs	113	132	120	98	150	120
Denied Entry Before	1	0	2	0	0	0
Denied Entry After	1	0	4	0	1	0
Travel Distance (mi)	1705	1714	1723	1753	1749	1729
Travel Time (hr)	118.0	117.4	129.2	118.5	123.6	121.3
Total Delay (hr)	56.3	55.4	66.8	55.3	60.5	58.9
Total Stops	8426	8322	8731	8688	8928	8618
Fuel Used (gal)	85.0	85.7	88.6	87.4	88.6	87.1

1: Thames St & India St Performance by approach

Approach	EB	WB	SE	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	8.8	9.8	6.2	8.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.0	0.1
Total Del/Veh (s)	6.2	9.5	10.0	6.4	8.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	2.5	1.3	6.1	6.7	2.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Thames St & Hancock St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.9	4.0	10.0	7.3	8.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.9	0.5	0.5	1.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.5	0.3	6.0	0.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	2.9	5.0	0.4	0.3	0.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

8: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2
Total Del/Veh (s)	17.2	19.2	12.3	14.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

9: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	32.6	13.5	16.4	30.3	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.7	0.6	1.8	0.2	0.7
Total Del/Veh (s)	30.7	22.6	12.5	11.1	21.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.4	1.1	0.0	0.5
Total Del/Veh (s)	24.5	39.0	20.0	26.4	25.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

23: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	5.6	2.8	0.5	2.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	3.0	1.7	0.0	0.0	1.3
Total Del/Veh (s)	17.4	22.3	15.9	19.4	20.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St./Middle St & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	1.4	0.0	0.2	1.3	0.9
Total Del/Veh (s)	24.5	16.0	17.6	15.7	20.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	41.6
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: Thames St & India St

Movement	EB	EB	WB	SE
Directions Served	L	T	TR	LR
Maximum Queue (ft)	66	104	81	138
Average Queue (ft)	50	61	42	66
95th Queue (ft)	68	92	67	112
Link Distance (ft)		495	394	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	35			
Storage Blk Time (%)	11	22		
Queuing Penalty (veh)	35	32		

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	97	171	151	79
Average Queue (ft)	44	64	62	39
95th Queue (ft)	80	121	117	64
Link Distance (ft)	527	352	328	243
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	55	40	60
Average Queue (ft)	3	12	17	24
95th Queue (ft)	22	43	35	49
Link Distance (ft)	352	421	224	271
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Thames St & Hancock St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	62	30	74	65
Average Queue (ft)	31	3	37	38
95th Queue (ft)	48	18	64	59
Link Distance (ft)	271	170	394	702
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	101	34
Average Queue (ft)	38	3
95th Queue (ft)	75	20
Link Distance (ft)	1097	421
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Proposed New Road & Fore

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	11	57
Average Queue (ft)	0	20
95th Queue (ft)	6	46
Link Distance (ft)	555	328
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	40	29	24
Average Queue (ft)	19	6	2
95th Queue (ft)	42	26	13
Link Distance (ft)	739	228	555
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	162	172	94	361
Average Queue (ft)	84	83	84	135
95th Queue (ft)	139	145	111	279
Link Distance (ft)	629	768		542
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			18	7
Queuing Penalty (veh)			52	25

Intersection: 9: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	90	225	140	267	96	284
Average Queue (ft)	25	96	100	70	27	111
95th Queue (ft)	63	212	166	207	78	213
Link Distance (ft)	1097	195		542		550
Upstream Blk Time (%)		2		0		
Queuing Penalty (veh)		9		1		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	8	8	0	
Queuing Penalty (veh)		4	12	8	0	

Intersection: 10: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	216	511	77	111	137
Average Queue (ft)	118	203	27	38	58
95th Queue (ft)	230	420	57	83	112
Link Distance (ft)	195	815		310	297
Upstream Blk Time (%)	11	1			
Queuing Penalty (veh)	27	0			
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			0	1	
Queuing Penalty (veh)			0	1	

Intersection: 11: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	223	245	162	56	135	66	167	250	90	349	175
Average Queue (ft)	136	44	68	27	55	24	67	89	24	148	97
95th Queue (ft)	217	146	132	58	115	59	132	186	64	268	176
Link Distance (ft)		307	307		265			753	753	495	
Upstream Blk Time (%)		0								0	
Queuing Penalty (veh)		0								1	
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)	3	0		27	32	20	0	2		6	1
Queuing Penalty (veh)	2	0		19	23	18	0	2		10	3

Intersection: 23: Thames St/Site Access & Proposed New Road

Movement	SB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	23
95th Queue (ft)	46
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	139	99	274	243	131	116	185
Average Queue (ft)	32	65	205	122	42	49	104
95th Queue (ft)	96	101	305	227	93	100	167
Link Distance (ft)	648		247	247	307	307	527
Upstream Blk Time (%)			7	0			
Queuing Penalty (veh)			26	1			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	8					
Queuing Penalty (veh)	0	5					

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	449	387	203	219	125	112	75
Average Queue (ft)	213	163	81	97	59	45	22
95th Queue (ft)	396	331	153	170	108	93	60
Link Distance (ft)	450	450	247	247	546	292	
Upstream Blk Time (%)	3	2	0	0			
Queuing Penalty (veh)	0	0	0	0			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						9	1
Queuing Penalty (veh)						3	1

Network Summary

Network wide Queuing Penalty: 322

Intersection: 8: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	10.0	30.0	25.0	45.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	10.1	15.6	15.2	27.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	15	15	14	7
Cycles @ Minimum (%)	1	11	15	8
Cycles Maxed Out (%)	57	0	7	3
Cycles with Peds (%)	0	35	31	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	20.0	24.0	21.0	48.0	21.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	18.1	19.2	16.0	40.7	16.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	13	7	13	10	13
Cycles @ Minimum (%)	5	0	11	0	11
Cycles Maxed Out (%)	58	51	31	34	31
Cycles with Peds (%)	0	44	23	48	10

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 10: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	26.0	25.0	27.0	25.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	18.6	22.3	18.6	22.3
g/C Ratio	-0.01	NA	-0.01	NA
Cycles Skipped (%)	4	0	4	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	41	68	19	68
Cycles with Peds (%)	27	1	16	3

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 11: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	37.9	17.1	11.3	21.7	8.9
g/C Ratio	-0.01	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	7	2	7	0	11
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	18	51	24	60	61
Cycles with Peds (%)	31	7	0	31	11

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	31.8	24.0	31.2	24.0
g/C Ratio	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	13	2	0	4
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	57	8	62	8
Cycles with Peds (%)	2	68	32	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St./Middle St & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	31.2	21.3	30.8
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	4	4	12
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	67	2	60
Cycles with Peds (%)	0	39	5

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6516	6606	6557	6596	6467	6541
Vehs Exited	6281	6326	6284	6333	6152	6273
Starting Vehs	239	258	236	276	229	244
Ending Vehs	474	538	509	539	544	520
Denied Entry Before	2	3	1	1	3	0
Denied Entry After	644	695	766	738	677	703
Travel Distance (mi)	3869	3905	3823	3856	3807	3852
Travel Time (hr)	722.6	791.2	793.6	809.4	744.9	772.4
Total Delay (hr)	599.9	667.2	672.3	687.0	624.0	650.1
Total Stops	12639	12308	12251	12092	12083	12275
Fuel Used (gal)	277.7	294.7	291.9	298.0	281.1	288.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6516	6606	6557	6596	6467	6541
Vehs Exited	6281	6326	6284	6333	6152	6273
Starting Vehs	239	258	236	276	229	244
Ending Vehs	474	538	509	539	544	520
Denied Entry Before	2	3	1	1	3	0
Denied Entry After	644	695	766	738	677	703
Travel Distance (mi)	3869	3905	3823	3856	3807	3852
Travel Time (hr)	722.6	791.2	793.6	809.4	744.9	772.4
Total Delay (hr)	599.9	667.2	672.3	687.0	624.0	650.1
Total Stops	12639	12308	12251	12092	12083	12275
Fuel Used (gal)	277.7	294.7	291.9	298.0	281.1	288.7

1: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.8	1.6	1.6	1.2
Total Del/Veh (s)	22.0	33.4	17.9	25.5	22.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

2: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.7	0.7	0.0	0.3	0.8
Total Del/Veh (s)	14.7	19.5	16.0	18.1	17.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	1.3	0.2
Total Del/Veh (s)	10.0	16.2	14.1	13.0	12.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Performance by approach

Approach	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.0	4.0	4.0
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

5: Somerset/Fox & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	2.5	0.4
Total Del/Veh (s)	26.4	29.3	41.1	25.8	27.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Marginal & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.1
Total Del/Veh (s)	25.1	29.7	55.3	44.8	32.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

9: Off Ramp Performance by approach

Approach	EB	SE	NW	All
Denied Del/Veh (s)	26.7	0.0	0.0	8.6
Total Del/Veh (s)	230.2	104.4	2.8	106.2
Denied Entry Before	0	0	0	0
Denied Entry After	17	0	0	17

44: Congress St. & Franklin SB Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	3.0	0.0	0.5
Total Del/Veh (s)	18.9	34.1	6.5	18.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	1	0	1

46: Cumberland Ave. & Franklin SB Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	3.4	0.0	0.5
Total Del/Veh (s)	15.3	33.4	11.0	17.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

122: Congress St. & Franklin NB Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	255.6	100.4
Total Del/Veh (s)	11.7	16.3	147.7	61.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	74	74

123: Franklin St. & Franklin NB Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.6	7.0	5.0
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

124: Cumberland Ave. & Franklin NB Performance by approach

Approach	NB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	3.3	0.9
Total Del/Veh (s)	9.1	12.0	46.9	20.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	139.6
Total Del/Veh (s)	195.6
Denied Entry Before	0
Denied Entry After	703

Intersection: 1: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	204	119	132	55	148	66	137	175	98	286	175
Average Queue (ft)	109	28	54	31	62	29	58	75	24	140	98
95th Queue (ft)	187	77	111	61	129	65	111	148	71	242	178
Link Distance (ft)		294	294		134			1173		1203	
Upstream Blk Time (%)					1						
Queuing Penalty (veh)					0						
Storage Bay Dist (ft)	200			25		25	160		160		150
Storage Blk Time (%)	1			30	26	18	0	1	0	6	1
Queuing Penalty (veh)	1			21	18	17	0	1	0	10	3

Intersection: 2: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	128	99	268	194	117	138	221
Average Queue (ft)	23	60	169	94	43	51	102
95th Queue (ft)	79	100	270	171	90	113	173
Link Distance (ft)	1208		257	257	294	294	1326
Upstream Blk Time (%)			1				
Queuing Penalty (veh)			4				
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	6					
Queuing Penalty (veh)	0	4					

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	110	117	183	184	118	102	75
Average Queue (ft)	78	70	75	93	56	36	22
95th Queue (ft)	117	117	142	163	101	80	62
Link Distance (ft)	88	88	257	257	1692	1144	
Upstream Blk Time (%)	13	7					
Queuing Penalty (veh)	60	32					
Storage Bay Dist (ft)							50
Storage Blk Time (%)						6	2
Queuing Penalty (veh)						2	2

Intersection: 4:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Somerset/Fox & Franklin

Movement	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	278	463	486	175	303	306	88	86	74	197	181
Average Queue (ft)	57	290	315	25	187	156	38	39	27	87	82
95th Queue (ft)	187	468	489	93	279	260	71	79	62	159	147
Link Distance (ft)		466	466		382	382			764	563	
Upstream Blk Time (%)		0	1		0	0					
Queuing Penalty (veh)		1	6		0	0					
Storage Bay Dist (ft)	300			230			275	275			200
Storage Blk Time (%)		8			4					0	0
Queuing Penalty (veh)		5			1					1	0

Intersection: 6: Marginal & Franklin

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	T	R	L	T	TR	L	T	R	LT	R
Maximum Queue (ft)	181	184	211	183	349	412	386	30	390	404	155	148
Average Queue (ft)	145	162	181	169	157	216	169	27	202	231	77	73
95th Queue (ft)	200	190	199	178	282	376	331	38	364	375	140	128
Link Distance (ft)	133	133	133	133		466	466		861	861	609	609
Upstream Blk Time (%)	14	28	45	50		0						
Queuing Penalty (veh)	91	175	286	314		0						
Storage Bay Dist (ft)					335			1				
Storage Blk Time (%)					0	2		41	27			
Queuing Penalty (veh)					0	4		43	38			

Intersection: 9: Off Ramp

Movement	EB	EB	SE	SE	SE	B38	B38	NW	NW
Directions Served	R	R	T	T	T	T	T	T	TR
Maximum Queue (ft)	1079	1079	284	266	265	2187	2188	138	140
Average Queue (ft)	834	809	258	248	248	1957	1952	13	24
95th Queue (ft)	1288	1280	269	269	277	2725	2729	72	94
Link Distance (ft)	1096	1096	200	200	200	2138	2138	133	133
Upstream Blk Time (%)	32	30	84	76	68	78	78	0	0
Queuing Penalty (veh)	0	0	0	0	0	0	0	0	1
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 44: Congress St. & Franklin SB

Movement	SE	SE	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	408	408	221	174	82	73
Average Queue (ft)	171	201	52	107	27	24
95th Queue (ft)	362	383	144	173	65	64
Link Distance (ft)	418	418	393		103	103
Upstream Blk Time (%)	0	0			0	0
Queuing Penalty (veh)	2	4			0	0
Storage Bay Dist (ft)				150		
Storage Blk Time (%)				4		
Queuing Penalty (veh)				5		

Intersection: 46: Cumberland Ave. & Franklin SB

Movement	SB	SB	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	418	444	285	125	52	94
Average Queue (ft)	165	193	82	98	9	34
95th Queue (ft)	366	401	237	144	34	75
Link Distance (ft)	774	774	455		104	104
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)				100		
Storage Blk Time (%)			0	16		
Queuing Penalty (veh)			0	19		

Intersection: 122: Congress St. & Franklin NB

Movement	NW	NW	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	162	176	118	118	539	175
Average Queue (ft)	67	74	59	63	507	175
95th Queue (ft)	133	146	111	120	547	175
Link Distance (ft)	632	632	103	103	491	
Upstream Blk Time (%)			2	3	81	
Queuing Penalty (veh)			3	6	0	
Storage Bay Dist (ft)						150
Storage Blk Time (%)					0	79
Queuing Penalty (veh)					0	163

Intersection: 123: Franklin St. & Franklin NB

Movement	NB	SB	SB
Directions Served	R	T	T
Maximum Queue (ft)	19	277	222
Average Queue (ft)	1	59	35
95th Queue (ft)	10	177	127
Link Distance (ft)	88	641	641
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 124: Cumberland Ave. & Franklin NB

Movement	NB	NB	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	157	158	74	95	399	175
Average Queue (ft)	71	65	22	46	130	144
95th Queue (ft)	146	141	59	90	367	208
Link Distance (ft)	424	424	104	104	1167	
Upstream Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		
Storage Bay Dist (ft)						150
Storage Blk Time (%)					0	27
Queuing Penalty (veh)					0	25

Network Summary

Network wide Queuing Penalty: 1369

Intersection: 1: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	35.1	15.1	10.2	21.0	8.2
g/C Ratio	-0.01	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	6	6	14	0	18
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	6	32	12	53	55
Cycles with Peds (%)	24	4	0	24	6

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 2: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	25.9	23.2	26.2	23.4
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	15	3	3	10
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	30	3	32	3
Cycles with Peds (%)	2	63	29	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	24.1	18.9	23.1
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	15	13	19
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	26	0	22
Cycles with Peds (%)	0	29	3

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Somerset/Fox & Franklin

Phase	1	2	4	5	6	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	SWTL
Maximum Green (s)	14.5	44.5	9.5	9.5	49.5	9.5
Minimum Green (s)	3.0	8.0	3.0	3.0	8.0	3.0
Recall	None	None	None	None	C-Min	None
Avg. Green (s)	22.4	31.3	10.3	5.7	53.8	14.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	11	5	5	56	5	3
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	18	3	8	0	95	14
Cycles with Peds (%)	0	0	22	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Marginal & Franklin

Phase	1	2	4	5	6	7	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	NEL	SWTL
Maximum Green (s)	10.0	48.0	27.0	15.0	43.0	13.0	8.0
Minimum Green (s)	3.0	10.0	15.0	3.0	10.0	1.0	5.0
Recall	None	None	None	None	C-Min	None	None
Avg. Green (s)	10.0	48.0	27.0	13.5	45.8	10.2	17.1
g/C Ratio	NA	NA	NA	NA	NA	-0.01	NA
Cycles Skipped (%)	0	0	0	0	0	34	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	100	59	100	17	100
Cycles with Peds (%)	0	0	11	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 44: Congress St. & Franklin SB

Phase	1	2	3
Movement(s) Served	SETL	NESW	SWTL
Maximum Green (s)	48.0	26.0	8.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	53.6	26.1	5.9
g/C Ratio	NA	NA	-0.01
Cycles Skipped (%)	0	0	12
Cycles @ Minimum (%)	0	0	21
Cycles Maxed Out (%)	100	100	12
Cycles with Peds (%)	34	94	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 46: Cumberland Ave. & Franklin SB

Phase	1	2	3
Movement(s) Served	SBTL	NESW	SWTL
Maximum Green (s)	54.0	22.0	6.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	60.3	21.5	5.0
g/C Ratio	NA	NA	-0.01
Cycles Skipped (%)	0	0	44
Cycles @ Minimum (%)	0	0	26
Cycles Maxed Out (%)	100	83	12
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5826	5708	5652	5771	5614	5712
Vehs Exited	5793	5713	5640	5768	5592	5703
Starting Vehs	126	145	145	129	114	127
Ending Vehs	159	140	157	132	136	144
Denied Entry Before	2	0	1	0	0	0
Denied Entry After	1	0	2	1	1	0
Travel Distance (mi)	2234	2155	2138	2203	2155	2177
Travel Time (hr)	170.0	145.9	144.7	149.5	145.8	151.2
Total Delay (hr)	87.4	66.3	65.7	68.1	66.0	70.7
Total Stops	9991	9143	9066	9315	9194	9339
Fuel Used (gal)	110.7	103.7	102.4	105.5	102.9	105.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5826	5708	5652	5771	5614	5712
Vehs Exited	5793	5713	5640	5768	5592	5703
Starting Vehs	126	145	145	129	114	127
Ending Vehs	159	140	157	132	136	144
Denied Entry Before	2	0	1	0	0	0
Denied Entry After	1	0	2	1	1	0
Travel Distance (mi)	2234	2155	2138	2203	2155	2177
Travel Time (hr)	170.0	145.9	144.7	149.5	145.8	151.2
Total Delay (hr)	87.4	66.3	65.7	68.1	66.0	70.7
Total Stops	9991	9143	9066	9315	9194	9339
Fuel Used (gal)	110.7	103.7	102.4	105.5	102.9	105.0

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	5.2	9.3	7.9	7.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.1
Total Del/Veh (s)	9.2	8.9	8.7	9.0	9.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	2.5	0.8	6.7	6.5	3.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Thames St & Hancock St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.1	0.1
Total Del/Veh (s)	4.0	6.4	7.7	5.7	6.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.4	1.0	0.5	1.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: 100 Fore St & Existing Driveways & Fore Performance by approach

Approach	EB	WB	NB	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	0.7	0.6	7.9	8.6	1.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Fore & Waterville St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0
Total Del/Veh (s)	2.3	0.9	0.2	0.8
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

8: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.3	0.0	0.3
Total Del/Veh (s)	48.1	26.7	16.5	32.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

9: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	26.6	17.1	24.5	26.7	23.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.3	2.2	0.2	0.7
Total Del/Veh (s)	15.7	24.8	19.2	15.2	19.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial/Commercial St & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	8.7	1.5	0.2	1.8
Total Del/Veh (s)	17.8	47.7	19.6	21.3	23.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	2.5	0.2	0.0	0.1	0.7
Total Del/Veh (s)	17.2	20.4	20.8	21.9	20.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.3	0.0	0.5	1.8	0.5
Total Del/Veh (s)	24.0	19.6	22.6	12.4	20.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	42.4
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	69	70	140	50
Average Queue (ft)	35	51	56	32
95th Queue (ft)	54	68	108	43
Link Distance (ft)	230		495	376
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		19	9	
Queuing Penalty (veh)		25	22	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	112	129	99	117
Average Queue (ft)	52	52	48	59
95th Queue (ft)	95	96	79	101
Link Distance (ft)	516	340	273	230
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	23	55	50	90
Average Queue (ft)	1	7	18	42
95th Queue (ft)	11	31	39	74
Link Distance (ft)	340	418	194	254
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Thames St & Hancock St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	17	60	65
Average Queue (ft)	27	2	31	33
95th Queue (ft)	47	14	48	54
Link Distance (ft)	254	234	376	203
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	68	56
Average Queue (ft)	24	9
95th Queue (ft)	50	37
Link Distance (ft)	1092	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: 100 Fore St & Existing Driveways & Fore

Movement	EB	WB	NB	NW	NW
Directions Served	TR>	<LT	LR	L	R
Maximum Queue (ft)	4	44	44	35	37
Average Queue (ft)	0	5	24	15	5
95th Queue (ft)	3	25	47	40	25
Link Distance (ft)	394	536	232	256	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					25
Storage Blk Time (%)				4	1
Queuing Penalty (veh)				0	0

Intersection: 7: Fore & Waterville St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	31	35
Average Queue (ft)	16	5
95th Queue (ft)	39	25
Link Distance (ft)	792	536
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	572	298	94	237
Average Queue (ft)	305	164	71	108
95th Queue (ft)	620	269	109	199
Link Distance (ft)	2449	1081		534
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			10	12
Queuing Penalty (veh)			23	20

Intersection: 9: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	143	202	140	489	100	197
Average Queue (ft)	71	63	73	208	74	99
95th Queue (ft)	125	150	148	427	135	172
Link Distance (ft)	1092	198		534		652
Upstream Blk Time (%)		1		1		
Queuing Penalty (veh)		3		6		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		1	3	33	1	
Queuing Penalty (veh)		4	4	66	6	

Intersection: 10: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	219	380	104	236	99
Average Queue (ft)	164	161	75	94	43
95th Queue (ft)	251	318	118	180	82
Link Distance (ft)	198	1555		234	264
Upstream Blk Time (%)	8			0	
Queuing Penalty (veh)	53			0	
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			9	6	
Queuing Penalty (veh)			17	14	

Intersection: 11: Commercial/Commercial St & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	65	126	176	53	164	56	184	232	46	200	126
Average Queue (ft)	27	52	67	28	97	33	106	98	15	95	35
95th Queue (ft)	62	106	135	62	162	66	173	196	35	165	84
Link Distance (ft)		308	308		133			300	300	495	
Upstream Blk Time (%)					13						
Queuing Penalty (veh)					0						
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)				24	56	27	2	2		2	0
Queuing Penalty (veh)				33	42	37	6	3		1	0

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	207	100	229	224	142	124	281
Average Queue (ft)	94	79	127	108	73	49	122
95th Queue (ft)	191	116	216	195	130	110	214
Link Distance (ft)	193		240	240	308	308	516
Upstream Blk Time (%)	1		0	0			
Queuing Penalty (veh)	0		1	0			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	5	13					
Queuing Penalty (veh)	15	23					

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	299	269	208	224	316	158	75
Average Queue (ft)	160	124	111	118	150	64	36
95th Queue (ft)	272	223	180	192	256	129	77
Link Distance (ft)	309	309	240	240	546	468	
Upstream Blk Time (%)	1	0	0	0			
Queuing Penalty (veh)	0	0	0	1			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						14	2
Queuing Penalty (veh)						18	3

Network Summary

Network wide Queuing Penalty: 446

Intersection: 8: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	6.0	23.0	31.0	34.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	5.8	20.8	27.7	29.2
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	22	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	56	42	69	25
Cycles with Peds (%)	0	72	46	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 9: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	18.0	24.0	21.0	46.0	21.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.7	21.9	19.3	43.3	19.3
g/C Ratio	NA	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	88	78	49	68	49
Cycles with Peds (%)	0	74	35	78	67

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 10: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	28.0	39.0	28.0	39.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	21.9	33.1	21.9	33.1
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	21	51	21	51
Cycles with Peds (%)	21	32	7	35

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 11: Commercial/Commercial St & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	41.6	13.4	13.3	22.7	9.5
g/C Ratio	-0.01	-0.01	-0.01	NA	-0.01
Cycles Skipped (%)	5	5	2	0	4
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	30	20	34	77	84
Cycles with Peds (%)	77	7	0	75	16

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	29.1	29.4	29.5	29.4
g/C Ratio	-0.01	NA	-0.01	-0.01
Cycles Skipped (%)	6	0	2	8
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	46	39	48	37
Cycles with Peds (%)	6	90	54	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	30.7	30.4	30.9
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	65	43	65
Cycles with Peds (%)	2	57	8

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6876	6557	6712	6622	7136	6776
Vehs Exited	5872	5636	5806	5727	6192	5844
Starting Vehs	351	369	351	351	309	343
Ending Vehs	1355	1290	1257	1246	1253	1278
Denied Entry Before	3	4	4	2	3	2
Denied Entry After	2188	2772	2313	2728	2035	2407
Travel Distance (mi)	4361	4165	4189	4142	4504	4272
Travel Time (hr)	1720.8	2029.4	1715.6	1989.7	1656.5	1822.4
Total Delay (hr)	1584.0	1899.0	1584.1	1859.6	1514.5	1688.2
Total Stops	16067	15887	15447	15137	16838	15878
Fuel Used (gal)	509.3	574.8	504.2	564.5	498.1	530.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6876	6557	6712	6622	7136	6776
Vehs Exited	5872	5636	5806	5727	6192	5844
Starting Vehs	351	369	351	351	309	343
Ending Vehs	1355	1290	1257	1246	1253	1278
Denied Entry Before	3	4	4	2	3	2
Denied Entry After	2188	2772	2313	2728	2035	2407
Travel Distance (mi)	4361	4165	4189	4142	4504	4272
Travel Time (hr)	1720.8	2029.4	1715.6	1989.7	1656.5	1822.4
Total Delay (hr)	1584.0	1899.0	1584.1	1859.6	1514.5	1688.2
Total Stops	16067	15887	15447	15137	16838	15878
Fuel Used (gal)	509.3	574.8	504.2	564.5	498.1	530.2

1: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.8	1.8	1.1	1.3
Total Del/Veh (s)	16.4	42.6	18.0	19.0	21.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

2: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.3	0.2
Total Del/Veh (s)	25.8	18.1	23.2	27.8	23.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.3	1.3	0.3
Total Del/Veh (s)	17.9	30.3	37.6	15.4	27.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Performance by approach

Approach	SE	NW	All
Denied Del/Veh (s)	8.6	14.4	12.4
Total Del/Veh (s)	120.2	148.9	139.1
Denied Entry Before	0	0	0
Denied Entry After	1	7	8

5: Somerset/Fox & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.6	1.9	406.7	59.5	100.6
Total Del/Veh (s)	128.0	94.1	330.8	117.3	147.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	1	207	0	208

6: Marginal & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.7	0.1	533.6	106.2	169.3
Total Del/Veh (s)	65.2	59.4	637.0	190.2	184.3
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	540	33	573

9: Off Ramp Performance by approach

Approach	EB	SE	NW	All
Denied Del/Veh (s)	448.5	0.0	0.0	153.8
Total Del/Veh (s)	423.6	287.0	4.5	138.4
Denied Entry Before	0	0	0	0
Denied Entry After	448	0	0	448

44: Congress St. & Franklin SB Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	5.0	718.1	0.0	353.6
Total Del/Veh (s)	184.7	536.5	7.0	263.6
Denied Entry Before	0	0	0	0
Denied Entry After	2	309	0	311

46: Cumberland Ave. & Franklin SB Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	19.1	529.3	0.0	209.0
Total Del/Veh (s)	300.7	505.2	38.3	305.2
Denied Entry Before	0	1	0	1
Denied Entry After	5	191	0	196

122: Congress St. & Franklin NB Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	102.3	0.0	658.5	262.8
Total Del/Veh (s)	131.5	45.7	485.4	191.6
Denied Entry Before	0	0	1	1
Denied Entry After	85	0	275	360

123: Franklin St. & Franklin NB Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	9.9	8.0	9.4
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

124: Cumberland Ave. & Franklin NB Performance by approach

Approach	NB	NE	SW	All
Denied Del/Veh (s)	1.7	0.1	108.6	25.9
Total Del/Veh (s)	95.6	31.7	380.3	145.3
Denied Entry Before	0	0	0	0
Denied Entry After	1	0	36	37

Total Network Performance

Denied Del/Veh (s)	310.1
Total Del/Veh (s)	453.5
Denied Entry Before	2
Denied Entry After	2407

Intersection: 1: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	63	94	112	58	214	56	176	206	153	186	107
Average Queue (ft)	17	32	41	27	95	32	96	80	17	94	34
95th Queue (ft)	51	77	92	61	178	65	160	159	65	157	75
Link Distance (ft)		323	323		301			1184		1336	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	200			25		25	160		160		150
Storage Blk Time (%)				22	55	22	1	1	0	1	0
Queuing Penalty (veh)				30	41	30	5	2	0	1	0

Intersection: 2: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	408	100	183	212	191	207	402
Average Queue (ft)	131	80	68	70	91	82	145
95th Queue (ft)	354	120	145	153	165	160	309
Link Distance (ft)	3036		249	249	323	323	1648
Upstream Blk Time (%)			0	0			
Queuing Penalty (veh)			1	0			
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	12	13					
Queuing Penalty (veh)	34	21					

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	133	132	270	279	517	258	75
Average Queue (ft)	57	54	135	143	183	73	44
95th Queue (ft)	129	128	244	258	403	176	86
Link Distance (ft)	105	105	249	249	2038	1494	
Upstream Blk Time (%)	7	4	4	6			
Queuing Penalty (veh)	26	14	14	19			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						13	8
Queuing Penalty (veh)						17	14

Intersection: 4:

Movement	SE	SE	SE	NW	NW
Directions Served	R	R	>	T	T
Maximum Queue (ft)	403	413	240	790	828
Average Queue (ft)	253	252	24	672	686
95th Queue (ft)	550	548	142	1041	1072
Link Distance (ft)	382	382		766	766
Upstream Blk Time (%)	44	44		26	32
Queuing Penalty (veh)	288	290		221	275
Storage Bay Dist (ft)			215		
Storage Blk Time (%)		58	0		
Queuing Penalty (veh)		23	0		

Intersection: 5: Somerset/Fox & Franklin

Movement	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	325	489	488	255	420	419	287	300	779	582	225
Average Queue (ft)	141	350	358	148	391	390	225	260	693	264	126
95th Queue (ft)	350	611	602	324	435	442	353	394	995	615	253
Link Distance (ft)		466	466		382	382			764	563	
Upstream Blk Time (%)		41	44		56	54			67	21	
Queuing Penalty (veh)		358	378		476	454			0	0	
Storage Bay Dist (ft)	300			230			275	275			200
Storage Blk Time (%)	0	53		0	74		9	21	72	24	10
Queuing Penalty (veh)	2	127		0	65		13	31	363	53	11

Intersection: 6: Marginal & Franklin

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	T	R	L	T	TR	L	T	R	LT	R
Maximum Queue (ft)	184	189	194	176	360	506	510	30	1682	1687	631	624
Average Queue (ft)	122	155	173	150	291	440	439	25	1519	1499	423	310
95th Queue (ft)	214	193	199	224	455	580	589	42	2059	2083	751	710
Link Distance (ft)	133	133	133	133		466	466		1655	1655	609	609
Upstream Blk Time (%)	37	62	72	54		13	13		74	71	38	26
Queuing Penalty (veh)	166	278	324	244		152	150		0	0	0	0
Storage Bay Dist (ft)					335			1				
Storage Blk Time (%)					0	40		52	13			
Queuing Penalty (veh)					2	140		71	62			

Intersection: 9: Off Ramp

Movement	EB	EB	SE	SE	SE	B38	B38	NW	NW
Directions Served	R	R	T	T	T	T	T	T	TR
Maximum Queue (ft)	1118	1123	274	262	260	2158	2157	193	205
Average Queue (ft)	913	899	250	237	225	1301	1295	63	99
95th Queue (ft)	1397	1405	284	280	273	2692	2679	180	218
Link Distance (ft)	1096	1096	200	200	200	2138	2138	133	133
Upstream Blk Time (%)	60	57	90	87	70	40	40	1	3
Queuing Penalty (veh)	0	0	0	0	0	0	0	15	42
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 44: Congress St. & Franklin SB

Movement	SE	SE	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	429	464	1157	175	58	77
Average Queue (ft)	350	330	1047	125	13	20
95th Queue (ft)	530	561	1449	245	43	60
Link Distance (ft)	408	408	1142		95	95
Upstream Blk Time (%)	53	39	76			0
Queuing Penalty (veh)	299	221	0			0
Storage Bay Dist (ft)				150		
Storage Blk Time (%)			80	14		
Queuing Penalty (veh)			253	42		

Intersection: 46: Cumberland Ave. & Franklin SB

Movement	SB	SB	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	795	815	1108	125	102	104
Average Queue (ft)	625	618	903	117	38	29
95th Queue (ft)	1039	1053	1433	150	99	80
Link Distance (ft)	774	774	1092		104	104
Upstream Blk Time (%)	58	56	65		13	2
Queuing Penalty (veh)	371	361	0		18	3
Storage Bay Dist (ft)				100		
Storage Blk Time (%)			17	70		
Queuing Penalty (veh)			45	141		

Intersection: 122: Congress St. & Franklin NB

Movement	NW	NW	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	648	651	110	104	1195	175
Average Queue (ft)	473	479	97	47	1092	174
95th Queue (ft)	792	797	105	116	1442	180
Link Distance (ft)	622	622	95	95	1158	
Upstream Blk Time (%)	20	22	71	10	80	
Queuing Penalty (veh)	80	87	288	41	0	
Storage Bay Dist (ft)						150
Storage Blk Time (%)					0	89
Queuing Penalty (veh)					0	150

Intersection: 123: Franklin St. & Franklin NB

Movement	NB	NB	SB	SB
Directions Served	R	R	T	T
Maximum Queue (ft)	127	130	152	158
Average Queue (ft)	51	53	18	16
95th Queue (ft)	143	147	87	78
Link Distance (ft)	105	105	632	632
Upstream Blk Time (%)	11	13		
Queuing Penalty (veh)	42	51		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 124: Cumberland Ave. & Franklin NB

Movement	NB	NB	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	457	465	120	128	1182	175
Average Queue (ft)	376	381	63	47	893	173
95th Queue (ft)	559	563	142	124	1496	193
Link Distance (ft)	421	421	104	104	1167	
Upstream Blk Time (%)	35	38	13	6	41	
Queuing Penalty (veh)	250	271	37	18	0	
Storage Bay Dist (ft)						150
Storage Blk Time (%)						85
Queuing Penalty (veh)						102

Network Summary

Network wide Queuing Penalty: 8514

Intersection: 1: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	39.9	11.5	12.6	22.4	8.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	4	18	6	2	2
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	19	10	27	73	83
Cycles with Peds (%)	75	10	0	65	10

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 2: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	22.8	28.5	23.5	29.1
g/C Ratio	-0.01	NA	-0.01	-0.01
Cycles Skipped (%)	4	0	11	11
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	18	30	18	29
Cycles with Peds (%)	9	91	41	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	27.5	30.1	25.6
g/C Ratio	-0.01	NA	NA
Cycles Skipped (%)	38	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	27	47	37
Cycles with Peds (%)	2	55	8

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Somerset/Fox & Franklin

Phase	1	2	4	5	6	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	SWTL
Maximum Green (s)	11.5	50.0	9.5	12.0	49.5	9.5
Minimum Green (s)	3.0	8.0	3.0	3.0	8.0	3.0
Recall	None	None	None	None	C-Min	None
Avg. Green (s)	18.5	55.4	16.5	7.9	65.0	26.9
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	34	24	23	38	24	23
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	57	76	77	3	76	57
Cycles with Peds (%)	0	0	26	0	3	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 6: Marginal & Franklin

Phase	1	2	4	5	6	7	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	NEL	SWTL
Maximum Green (s)	9.0	50.0	30.0	27.0	30.0	16.0	11.0
Minimum Green (s)	3.0	10.0	15.0	3.0	10.0	1.0	5.0
Recall	None	None	None	None	C-Min	None	None
Avg. Green (s)	9.0	50.0	30.0	17.3	41.3	15.5	17.1
g/C Ratio	NA	NA	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	0	0	0	3	0	26	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	100	12	100	59	100
Cycles with Peds (%)	0	0	28	0	9	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 44: Congress St. & Franklin SB

Phase	1	2	3
Movement(s) Served	SETL	NESW	SWTL
Maximum Green (s)	60.0	34.0	8.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	61.5	34.2	7.8
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	100	100	90
Cycles with Peds (%)	31	97	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 46: Cumberland Ave. & Franklin SB

Phase	1	2	3
Movement(s) Served	SBTL	NESW	SWTL
Maximum Green (s)	66.0	29.0	7.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	68.2	29.1	6.9
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	100	97	93
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6187	6326	6351	6395	6288	6308
Vehs Exited	6143	6289	6273	6318	6197	6245
Starting Vehs	183	188	175	204	186	187
Ending Vehs	227	225	253	281	277	247
Denied Entry Before	1	1	1	1	0	0
Denied Entry After	2	1	1	6	1	1
Travel Distance (mi)	3608	3679	3683	3694	3608	3654
Travel Time (hr)	213.5	228.6	238.9	253.0	232.7	233.4
Total Delay (hr)	91.5	103.9	114.5	127.7	110.1	109.5
Total Stops	11607	12041	12240	12424	12121	12086
Fuel Used (gal)	151.7	157.3	158.7	163.9	155.5	157.4

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6187	6326	6351	6395	6288	6308
Vehs Exited	6143	6289	6273	6318	6197	6245
Starting Vehs	183	188	175	204	186	187
Ending Vehs	227	225	253	281	277	247
Denied Entry Before	1	1	1	1	0	0
Denied Entry After	2	1	1	6	1	1
Travel Distance (mi)	3608	3679	3683	3694	3608	3654
Travel Time (hr)	213.5	228.6	238.9	253.0	232.7	233.4
Total Delay (hr)	91.5	103.9	114.5	127.7	110.1	109.5
Total Stops	11607	12041	12240	12424	12121	12086
Fuel Used (gal)	151.7	157.3	158.7	163.9	155.5	157.4

1: India St & Thames St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	5.9	10.9	11.1	10.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

2: India St & Fore Performance by approach

Approach	EB	WB	SE	NW	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.1	0.1
Total Del/Veh (s)	12.1	11.1	10.1	10.5	11.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

3: Fore & Hancock St Performance by approach

Approach	NB	SB	SE	NW	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	2.7	1.0	7.0	6.4	2.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

4: Thames St & Hancock St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.1
Total Del/Veh (s)	4.5	4.2	9.8	9.1	9.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Fore & Mountfort St Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.1	1.1	0.7	1.4
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

6: Proposed New Road & Fore Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.6	0.3	7.1	1.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

7: Fore & Site Driveway/Waterville St Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.0
Total Del/Veh (s)	3.2	5.3	1.0	0.2	0.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

8: Congress St & India St Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	0.5	0.3	0.0	0.3
Total Del/Veh (s)	42.0	35.4	18.2	32.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

9: Congress St & Mountfort St/Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1
Total Del/Veh (s)	27.6	16.1	26.0	28.9	24.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

10: Cumberland St & Washington Performance by approach

Approach	NB	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.4	2.2	0.2	0.7
Total Del/Veh (s)	15.3	26.3	21.0	15.8	19.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

11: Commercial/Commercial St & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.9	1.3	0.2	0.7
Total Del/Veh (s)	22.9	63.6	20.5	18.7	24.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

18: Thames St/Site Access & Proposed New Road Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.1
Total Del/Veh (s)	6.4	2.7	0.7	1.9
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

38: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	6.6	0.3	0.0	7.8	2.7
Total Del/Veh (s)	54.9	26.4	15.0	56.9	34.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	1	0	0	0	1

43: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.2	0.0	0.4	1.8	0.4
Total Del/Veh (s)	62.8	18.5	44.8	20.8	39.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	59.2
Denied Entry Before	0
Denied Entry After	1

Intersection: 1: India St & Thames St

Movement	SE	NE	NE	SW
Directions Served	LR	L	T	TR
Maximum Queue (ft)	84	66	184	107
Average Queue (ft)	39	55	78	55
95th Queue (ft)	63	66	136	90
Link Distance (ft)	230		495	387
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		35		
Storage Blk Time (%)		22	24	
Queuing Penalty (veh)		70	57	

Intersection: 2: India St & Fore

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	158	143	109	153
Average Queue (ft)	73	61	52	68
95th Queue (ft)	128	114	87	122
Link Distance (ft)	515	341	312	230
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fore & Hancock St

Movement	NB	SB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	21	54	46	91
Average Queue (ft)	1	10	18	41
95th Queue (ft)	10	37	37	72
Link Distance (ft)	341	418	194	269
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Thames St & Hancock St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	28	75	105
Average Queue (ft)	28	3	38	59
95th Queue (ft)	41	19	62	91
Link Distance (ft)	269	178	387	676
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Fore & Mountfort St

Movement	SE	NE
Directions Served	LR	LT
Maximum Queue (ft)	55	66
Average Queue (ft)	22	12
95th Queue (ft)	44	45
Link Distance (ft)	1091	418
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Proposed New Road & Fore

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	6	44	14
Average Queue (ft)	0	19	1
95th Queue (ft)	4	37	8
Link Distance (ft)	532	339	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			25
Storage Blk Time (%)		7	0
Queuing Penalty (veh)		0	0

Intersection: 7: Fore & Site Driveway/Waterville St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	31	44	6
Average Queue (ft)	18	7	4	0
95th Queue (ft)	41	27	22	4
Link Distance (ft)	792	375	532	383
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Congress St & India St

Movement	NW	NE	SW	SW
Directions Served	LR	TR	L	T
Maximum Queue (ft)	556	372	95	264
Average Queue (ft)	295	191	78	111
95th Queue (ft)	513	333	109	212
Link Distance (ft)	1769	987		534
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			70	
Storage Blk Time (%)			15	12
Queuing Penalty (veh)			34	22

Intersection: 9: Congress St & Mountfort St/Washington

Movement	NB	SB	SB	NE	NE	SW
Directions Served	LTR	LT	R	L	TR	LTR
Maximum Queue (ft)	168	196	140	518	100	229
Average Queue (ft)	82	59	71	227	83	104
95th Queue (ft)	139	139	142	459	133	177
Link Distance (ft)	1091	200		534		721
Upstream Blk Time (%)		0		1		
Queuing Penalty (veh)		1		8		
Storage Bay Dist (ft)			115		75	
Storage Blk Time (%)		0	4	35	2	
Queuing Penalty (veh)		1	4	72	9	

Intersection: 10: Cumberland St & Washington

Movement	NB	SB	NE	NE	SW
Directions Served	LTR	LTR	L	TR	LTR
Maximum Queue (ft)	218	440	104	233	116
Average Queue (ft)	174	172	79	96	49
95th Queue (ft)	250	349	121	184	92
Link Distance (ft)	200	1237		627	642
Upstream Blk Time (%)	8				
Queuing Penalty (veh)	55				
Storage Bay Dist (ft)			80		
Storage Blk Time (%)			12	7	
Queuing Penalty (veh)			24	15	

Intersection: 11: Commercial/Commercial St & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	207	160	179	56	276	53	178	232	45	291	175
Average Queue (ft)	104	54	66	29	116	32	107	105	17	118	80
95th Queue (ft)	179	120	132	63	235	65	175	199	36	218	155
Link Distance (ft)		310	310		368			931	931	495	
Upstream Blk Time (%)					0						
Queuing Penalty (veh)					0						
Storage Bay Dist (ft)	200			25		25	160				150
Storage Blk Time (%)	1			28	60	28	3	1		3	0
Queuing Penalty (veh)	1			38	44	40	8	3		9	0

Intersection: 18: Thames St/Site Access & Proposed New Road

Movement	SB	NE
Directions Served	LR	LT
Maximum Queue (ft)	50	6
Average Queue (ft)	19	0
95th Queue (ft)	43	4
Link Distance (ft)	339	676
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 38: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	558	100	271	252	147	172	415
Average Queue (ft)	241	93	208	134	76	73	217
95th Queue (ft)	540	122	297	247	134	138	407
Link Distance (ft)	802		240	240	310	310	515
Upstream Blk Time (%)	5		10	1			0
Queuing Penalty (veh)	0		37	4			0
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	17	39					
Queuing Penalty (veh)	49	66					

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	766	716	227	250	394	250	75
Average Queue (ft)	398	306	132	147	208	97	51
95th Queue (ft)	745	663	215	226	346	199	92
Link Distance (ft)	2960	2960	240	240	881	468	
Upstream Blk Time (%)			0	0			
Queuing Penalty (veh)			0	2			
Storage Bay Dist (ft)							50
Storage Blk Time (%)						26	4
Queuing Penalty (veh)						32	7

Network Summary

Network wide Queuing Penalty: 714

Intersection: 8: Congress St & India St

Phase	1	2	3	6
Movement(s) Served	SWL	NET	NWL	SWTL
Maximum Green (s)	6.0	21.0	33.0	32.0
Minimum Green (s)	4.0	8.0	8.0	15.0
Recall	None	None	None	None
Avg. Green (s)	6.0	20.1	30.4	29.5
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	14	0	0	0
Cycles @ Minimum (%)	0	0	0	2
Cycles Maxed Out (%)	65	61	71	43
Cycles with Peds (%)	0	78	49	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 9: Congress St & Mountfort St/Washington

Phase	1	2	4	6	8
Movement(s) Served	NEL	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	18.0	24.0	21.0	46.0	21.0
Minimum Green (s)	10.0	5.0	8.0	5.0	8.0
Recall	None	None	None	None	None
Avg. Green (s)	17.6	22.4	20.1	43.9	20.1
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	2	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	90	80	60	71	60
Cycles with Peds (%)	0	78	32	71	70

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 10: Cumberland St & Washington

Phase	2	4	6	8
Movement(s) Served	SWTL	NBTL	NETL	SBTL
Maximum Green (s)	27.0	40.0	27.0	40.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	22.0	34.6	22.0	34.6
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	35	53	35	53
Cycles with Peds (%)	20	22	11	36

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 11: Commercial/Commercial St & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	43.2	16.2	13.3	23.5	8.6
g/C Ratio	NA	NA	NA	NA	-0.01
Cycles Skipped (%)	0	0	0	0	2
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	44	38	45	83	85
Cycles with Peds (%)	83	7	0	71	10

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 38: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	44.0	24.0	44.0	24.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	40.3	25.1	40.8	25.3
g/C Ratio	NA	NA	-0.01	NA
Cycles Skipped (%)	0	0	2	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	65	100	65	100
Cycles with Peds (%)	9	96	52	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 43: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	44.0	24.0	44.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	43.6	30.3	43.6
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	93	95	93
Cycles with Peds (%)	0	69	12

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6804	6938	6638	6882	6180	6688
Vehs Exited	5710	5637	5412	5609	4958	5464
Starting Vehs	372	348	407	346	331	356
Ending Vehs	1466	1649	1633	1619	1553	1582
Denied Entry Before	4	5	5	3	2	1
Denied Entry After	2812	2932	3057	2754	3354	2977
Travel Distance (mi)	4309	4388	4116	4242	3762	4163
Travel Time (hr)	2192.1	2235.0	2148.9	2056.9	2318.5	2190.2
Total Delay (hr)	2057.1	2097.5	2020.2	1923.9	2200.9	2059.9
Total Stops	17057	17325	15951	16862	15168	16473
Fuel Used (gal)	614.6	626.0	598.9	580.6	629.1	609.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6804	6938	6638	6882	6180	6688
Vehs Exited	5710	5637	5412	5609	4958	5464
Starting Vehs	372	348	407	346	331	356
Ending Vehs	1466	1649	1633	1619	1553	1582
Denied Entry Before	4	5	5	3	2	1
Denied Entry After	2812	2932	3057	2754	3354	2977
Travel Distance (mi)	4309	4388	4116	4242	3762	4163
Travel Time (hr)	2192.1	2235.0	2148.9	2056.9	2318.5	2190.2
Total Delay (hr)	2057.1	2097.5	2020.2	1923.9	2200.9	2059.9
Total Stops	17057	17325	15951	16862	15168	16473
Fuel Used (gal)	614.6	626.0	598.9	580.6	629.1	609.9

1: Commercial & Franklin Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	88.9	105.4	82.8	78.2
Total Del/Veh (s)	22.0	125.2	125.5	136.2	110.7
Denied Entry Before	0	0	0	1	1
Denied Entry After	0	23	73	55	151

2: Fore & Franklin/Franklin St. Performance by approach

Approach	NB	SE	NW	SW	All
Denied Del/Veh (s)	4.5	0.4	21.1	16.3	11.5
Total Del/Veh (s)	264.3	27.2	99.1	171.3	143.6
Denied Entry Before	0	0	0	0	0
Denied Entry After	6	0	8	13	27

3: Middle St. & Franklin St. /Franklin St. Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.0	0.2	4.2	1.3	1.3
Total Del/Veh (s)	22.3	69.3	245.4	42.0	96.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	3	0	3

4: Performance by approach

Approach	SE	NW	All
Denied Del/Veh (s)	3.0	13.3	9.6
Total Del/Veh (s)	119.7	164.0	148.0
Denied Entry Before	0	0	0
Denied Entry After	1	6	7

5: Somerset/Fox & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.5	1.7	511.4	77.5	129.1
Total Del/Veh (s)	132.1	100.3	374.3	127.2	157.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	238	10	248

6: Marginal & Franklin Performance by approach

Approach	SE	NW	NE	SW	All
Denied Del/Veh (s)	0.3	0.0	583.9	228.1	200.7
Total Del/Veh (s)	67.4	55.0	674.7	191.3	190.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	547	73	620

9: Off Ramp Performance by approach

Approach	EB	SE	NW	All
Denied Del/Veh (s)	643.4	0.0	0.0	237.4
Total Del/Veh (s)	513.6	236.4	4.3	150.1
Denied Entry Before	0	0	0	0
Denied Entry After	608	0	0	608

44: Congress St. & Franklin SB Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	5.3	715.8	0.0	347.1
Total Del/Veh (s)	201.1	537.2	10.3	275.5
Denied Entry Before	0	0	0	0
Denied Entry After	2	307	0	309

46: Cumberland Ave. & Franklin SB Performance by approach

Approach	SB	NE	SW	All
Denied Del/Veh (s)	15.9	688.0	0.0	272.9
Total Del/Veh (s)	309.8	582.9	33.9	318.6
Denied Entry Before	0	0	0	0
Denied Entry After	7	255	0	262

122: Congress St. & Franklin NB Performance by approach

Approach	NW	NE	SW	All
Denied Del/Veh (s)	171.5	0.0	763.6	332.8
Total Del/Veh (s)	166.8	45.1	549.6	219.9
Denied Entry Before	0	0	0	0
Denied Entry After	125	0	315	440

123: Franklin St. & Franklin NB Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.3
Total Del/Veh (s)	20.7	20.7	20.7
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

124: Cumberland Ave. & Franklin NB Performance by approach

Approach	NB	NE	SW	All
Denied Del/Veh (s)	1.6	0.0	109.1	28.1
Total Del/Veh (s)	103.6	29.5	360.6	151.0
Denied Entry Before	0	0	0	0
Denied Entry After	1	0	48	49

Total Network Performance

Denied Del/Veh (s)	377.2
Total Del/Veh (s)	535.1
Denied Entry Before	1
Denied Entry After	2977

Intersection: 1: Commercial & Franklin

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	LT	R
Maximum Queue (ft)	152	83	117	52	290	51	185	1025	156	1146	175
Average Queue (ft)	55	27	35	21	165	30	126	427	18	499	121
95th Queue (ft)	129	67	93	57	340	64	208	1230	80	1410	208
Link Distance (ft)		323	323		301			1184		1336	
Upstream Blk Time (%)					23			21		23	
Queuing Penalty (veh)					0			0		0	
Storage Bay Dist (ft)	200			25		25	160		160		150
Storage Blk Time (%)	0			20	69	21	32	3	0	5	33
Queuing Penalty (veh)	0			27	51	30	125	7	0	15	80

Intersection: 2: Fore & Franklin/Franklin St.

Movement	NB	NB	SE	SE	NW	NW	SW
Directions Served	L	R>	LT	TR	LT	TR	<LR
Maximum Queue (ft)	2378	100	272	214	346	354	1340
Average Queue (ft)	836	75	110	73	225	225	510
95th Queue (ft)	2330	136	249	181	401	405	1312
Link Distance (ft)	3036		249	249	323	323	1648
Upstream Blk Time (%)	2		3	0	24	29	6
Queuing Penalty (veh)	0		11	1	71	85	0
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	46	17					
Queuing Penalty (veh)	130	29					

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Movement	SE	SE	NW	NW	NE	SW	SW
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	133	120	294	285	1666	451	75
Average Queue (ft)	65	54	219	225	730	144	57
95th Queue (ft)	146	128	334	329	1837	360	96
Link Distance (ft)	105	105	249	249	2038	1494	
Upstream Blk Time (%)	19	5	33	38	6		
Queuing Penalty (veh)	84	21	140	165	0		
Storage Bay Dist (ft)							50
Storage Blk Time (%)						19	31
Queuing Penalty (veh)						24	53

Intersection: 4:

Movement	SE	SE	SE	NW	NW
Directions Served	R	R	>	T	T
Maximum Queue (ft)	407	415	238	796	828
Average Queue (ft)	262	264	15	699	714
95th Queue (ft)	555	560	111	1038	1068
Link Distance (ft)	382	382		766	766
Upstream Blk Time (%)	48	48		31	37
Queuing Penalty (veh)	354	353		293	347
Storage Bay Dist (ft)			215		
Storage Blk Time (%)		59	0		
Queuing Penalty (veh)		23	0		

Intersection: 5: Somerset/Fox & Franklin

Movement	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	324	484	493	255	416	419	286	300	779	586	225
Average Queue (ft)	134	387	393	116	388	388	225	256	691	273	117
95th Queue (ft)	343	613	605	297	445	454	349	386	1001	633	248
Link Distance (ft)		466	466		382	382			764	563	
Upstream Blk Time (%)		45	48		59	57			69	24	
Queuing Penalty (veh)		428	459		560	538			0	0	
Storage Bay Dist (ft)	300			230			275	275			200
Storage Blk Time (%)	2	57		0	75		12	23	73	31	4
Queuing Penalty (veh)	11	136		0	66		17	33	367	67	4

Intersection: 6: Marginal & Franklin

Movement	SE	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	T	R	L	T	TR	L	T	R	LT	R
Maximum Queue (ft)	175	188	206	178	360	501	508	30	1690	1675	594	544
Average Queue (ft)	122	151	171	148	282	417	415	24	1518	1498	385	210
95th Queue (ft)	215	194	201	227	456	582	593	42	2080	2108	728	589
Link Distance (ft)	133	133	133	133		466	466		1655	1655	609	609
Upstream Blk Time (%)	35	60	76	58		9	10		76	74	34	16
Queuing Penalty (veh)	174	297	373	287		118	123		0	0	0	0
Storage Bay Dist (ft)					335			1				
Storage Blk Time (%)					0	33		48	10			
Queuing Penalty (veh)					1	119		66	50			

Intersection: 9: Off Ramp

Movement	EB	EB	SE	SE	SE	B38	B38	NW	NW
Directions Served	R	R	T	T	T	T	T	T	TR
Maximum Queue (ft)	1115	1136	280	264	258	2157	2171	188	187
Average Queue (ft)	984	973	246	232	204	1273	1271	54	85
95th Queue (ft)	1403	1412	297	284	281	2741	2730	161	190
Link Distance (ft)	1096	1096	200	200	200	2138	2138	133	133
Upstream Blk Time (%)	73	71	83	77	49	40	40	1	2
Queuing Penalty (veh)	0	0	0	0	0	0	0	10	26
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 44: Congress St. & Franklin SB

Movement	SE	SE	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	439	468	1157	175	62	78
Average Queue (ft)	380	382	1048	126	12	28
95th Queue (ft)	526	551	1428	247	41	68
Link Distance (ft)	408	408	1142		95	95
Upstream Blk Time (%)	61	64	74		0	0
Queuing Penalty (veh)	403	418	0		0	1
Storage Bay Dist (ft)				150		
Storage Blk Time (%)			83	12		
Queuing Penalty (veh)			263	36		

Intersection: 46: Cumberland Ave. & Franklin SB

Movement	SB	SB	NE	NE	SW	SW
Directions Served	LT	TR	T	TR	L	T
Maximum Queue (ft)	808	818	1108	125	89	140
Average Queue (ft)	655	649	908	118	37	33
95th Queue (ft)	1012	1026	1433	140	92	89
Link Distance (ft)	774	774	1092		104	104
Upstream Blk Time (%)	60	58	67		7	1
Queuing Penalty (veh)	431	418	0		10	1
Storage Bay Dist (ft)				100		
Storage Blk Time (%)			10	76		
Queuing Penalty (veh)			27	153		

Intersection: 122: Congress St. & Franklin NB

Movement	NW	NW	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	656	651	109	104	1191	175
Average Queue (ft)	544	544	97	44	1102	173
95th Queue (ft)	819	817	103	115	1395	181
Link Distance (ft)	622	622	95	95	1158	
Upstream Blk Time (%)	41	44	70	10	82	
Queuing Penalty (veh)	208	223	283	40	0	
Storage Bay Dist (ft)						150
Storage Blk Time (%)					2	91
Queuing Penalty (veh)					8	153

Intersection: 123: Franklin St. & Franklin NB

Movement	NB	NB	SB	SB
Directions Served	R	R	T	T
Maximum Queue (ft)	131	146	315	261
Average Queue (ft)	85	88	60	31
95th Queue (ft)	170	177	228	153
Link Distance (ft)	105	105	632	632
Upstream Blk Time (%)	31	35		
Queuing Penalty (veh)	156	179		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 124: Cumberland Ave. & Franklin NB

Movement	NB	NB	NE	NE	SW	SW
Directions Served	LT	TR	L	T	T	TR
Maximum Queue (ft)	453	457	120	130	1182	175
Average Queue (ft)	392	393	52	41	875	173
95th Queue (ft)	551	557	133	116	1487	187
Link Distance (ft)	421	421	104	104	1167	
Upstream Blk Time (%)	40	44	13	4	41	
Queuing Penalty (veh)	326	360	38	13	0	
Storage Bay Dist (ft)						150
Storage Blk Time (%)						85
Queuing Penalty (veh)						101

Network Summary

Network wide Queuing Penalty: 11103

Intersection: 1: Commercial & Franklin

Phase	2	4	5	6	8
Movement(s) Served	NBT	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	46.0	19.0	16.0	24.0	7.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0
Recall	None	None	None	None	None
Avg. Green (s)	43.1	12.0	14.1	23.5	9.2
g/C Ratio	-0.01	-0.01	-0.01	NA	NA
Cycles Skipped (%)	9	16	2	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	48	13	60	84	91
Cycles with Peds (%)	77	7	0	62	13

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 2: Fore & Franklin/Franklin St.

Phase	2	4	6	8
Movement(s) Served	NWTL	NBL	SETL	SWL
Maximum Green (s)	34.0	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0	4.0
Recall	None	None	None	None
Avg. Green (s)	31.9	31.8	31.7	32.0
g/C Ratio	NA	NA	-0.01	NA
Cycles Skipped (%)	0	0	6	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	77	72	70	74
Cycles with Peds (%)	6	94	57	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 3: Middle St. & Franklin St. /Franklin St.

Phase	2	3	6
Movement(s) Served	SETL	NESW	NWTL
Maximum Green (s)	34.0	34.0	34.0
Minimum Green (s)	4.0	4.0	4.0
Recall	None	None	None
Avg. Green (s)	33.6	32.7	32.7
g/C Ratio	-0.01	NA	NA
Cycles Skipped (%)	33	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	58	78	85
Cycles with Peds (%)	0	59	9

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Somerset/Fox & Franklin

Phase	1	2	4	5	6	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	SWTL
Maximum Green (s)	11.5	50.0	9.5	12.0	49.5	9.5
Minimum Green (s)	3.0	8.0	3.0	3.0	8.0	3.0
Recall	None	None	None	None	C-Min	None
Avg. Green (s)	17.8	54.5	17.8	7.5	63.9	39.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	40	31	29	46	31	31
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	54	69	71	3	69	53
Cycles with Peds (%)	0	0	32	0	3	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Marginal & Franklin

Phase	1	2	4	5	6	7	8
Movement(s) Served	SEL	NWT	NETL	NWL	SET	NEL	SWTL
Maximum Green (s)	9.0	50.0	30.0	27.0	30.0	16.0	11.0
Minimum Green (s)	3.0	10.0	15.0	3.0	10.0	1.0	5.0
Recall	None	None	None	None	C-Min	None	None
Avg. Green (s)	9.0	50.0	30.0	16.3	43.1	15.2	17.8
g/C Ratio	NA	NA	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	0	0	0	9	0	29	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	100	6	100	56	100
Cycles with Peds (%)	0	0	22	0	6	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 44: Congress St. & Franklin SB

Phase	1	2	3
Movement(s) Served	SETL	NESW	SWTL
Maximum Green (s)	60.0	34.0	8.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	61.4	34.5	7.9
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	100	100	93
Cycles with Peds (%)	24	100	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 46: Cumberland Ave. & Franklin SB

Phase	1	2	3
Movement(s) Served	SBTL	NESW	SWTL
Maximum Green (s)	66.0	29.0	7.0
Minimum Green (s)	4.0	4.0	4.0
Recall	C-Min	None	None
Avg. Green (s)	68.8	29.2	6.8
g/C Ratio	NA	NA	-0.01
Cycles Skipped (%)	0	0	3
Cycles @ Minimum (%)	0	0	3
Cycles Maxed Out (%)	100	97	86
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

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Impact Fee Calculation
58 Fore Street Mixed Use Development
Portland, Maine

Date: April 20, 2017
Subject: Impact Fee Calculation - 58 Fore Street Mixed Use Development
To: Dave Senus, Woodard & Curran; CPB2
From: Randy Dunton, P.E., PTOE, Gorrill Palmer (JN 3138)

Gorrill Palmer (GP) has prepared this memo summarizing a potential methodology and associated results of an impact fee calculation completed for the proposed 58 Fore Street Mixed Use Development. An impact fee methodology was requested by the City of Portland to identify a potential contribution to the proposed short term improvements on Franklin Street as a form of mitigation for the 58 Fore Street development.

There are three areas on Franklin Street that have been identified for short term improvements;

- Area 1 – Marginal Way to Fox / Somerset
- Area 2 - Congress Street and Cumberland Avenue
- Area 3 – Middle Street to Commercial Street

Areas 1 and 2 short term improvements are intended to emphasize addressing more the capacity of the corridor with some additional benefits to safety. Area 3 short term improvements are intended to emphasize pedestrian and bicycle accommodations with some added benefit to vehicular safety. Area 3 short term improvements are not focused on improving the capacity of the corridor the same as Areas 1 & 2 improvements. Therefore, the overall impact fee has been calculated assuming all of Area 1 + Area 2 costs and half of Area 3 costs. These calculations are based on the PM peak hour since it has a higher trip generation for 58 Fore Street and the operation of Franklin Street is more congested during the PM peak hour than the AM peak hour. The following identifies the methodology and conclusions for calculating a potential impact fee:

Total Entering Volumes:

Total Entering Volume (TEV) is the sum of the volumes entering a specific intersection, or in this case a specific defined area. For this evaluation, GP used 2027 volumes that were based on the approved PACTS model volumes for the 58 Fore Street study. (See attached Figure)

Area 1 + Area 2 - The 2027 PM Postdevelopment total entering volume (TEV) onto Franklin Street for an area from Marginal Way to Congress Street was calculated at 7,752 vehicles.

58 Fore Street Contribution - The TEV for 58 Fore Street was calculated at 413 vehicles. Based on this volume, 58 Fore Street contributes 5.3%.

Preliminary Opinions of Cost:

Areas 1, 2, and 3 are short term improvements (or parts of the final improvements) to the corridor to improve operations before the final design is constructed. For each of the three short-term improvements, preliminary opinions of probable construction costs (2017 dollars) have been estimated by GP (see attached). Per the City's recommendation, the costs have also been projected to 2022 based on an average (approximately 3% per year) of the Engineering News Record Construction Cost Index numbers since 1990. The preliminary opinions of costs for these improvements are as follows:

- Area 1 - Somerset Street and Marginal Way: 2017 Dollars $ 4.26 million
2022 Dollars $ 4.94 million
- Area 2 - Congress Street and Cumberland Avenue: 2017 Dollars $ 340,000
2022 Dollars $ 394,000
- Area 3 – Commercial Street and Middle Street: 2017 Dollars $ 3.15 million
2022 Dollars $ 3.65 million

The total for Area 1, 2 and half the costs for Area 3 proposed short term improvements is approximately $ 6.18 million in 2017 Dollars and $ 7.16 million in future 2022 Dollars.

Impact Fee: The impact fee is calculated as follows based on the information identified above:

Overall Impact Fee:

- 2017 Dollars: $6.18 million X 5.3 % (58 Fore Contribution to TEV) = $ 327,540
- 2022 Dollars: $ 7.16 million X 5.3 % (58 Fore Contribution to TEV) =$ 379,480

Per Trip Fee:

58 Fore Street is forecast to generate a total of 585 PM peak hour trip ends. Based on that trip generation and the above overall impact fees, the per trip impact fee would be as follows:

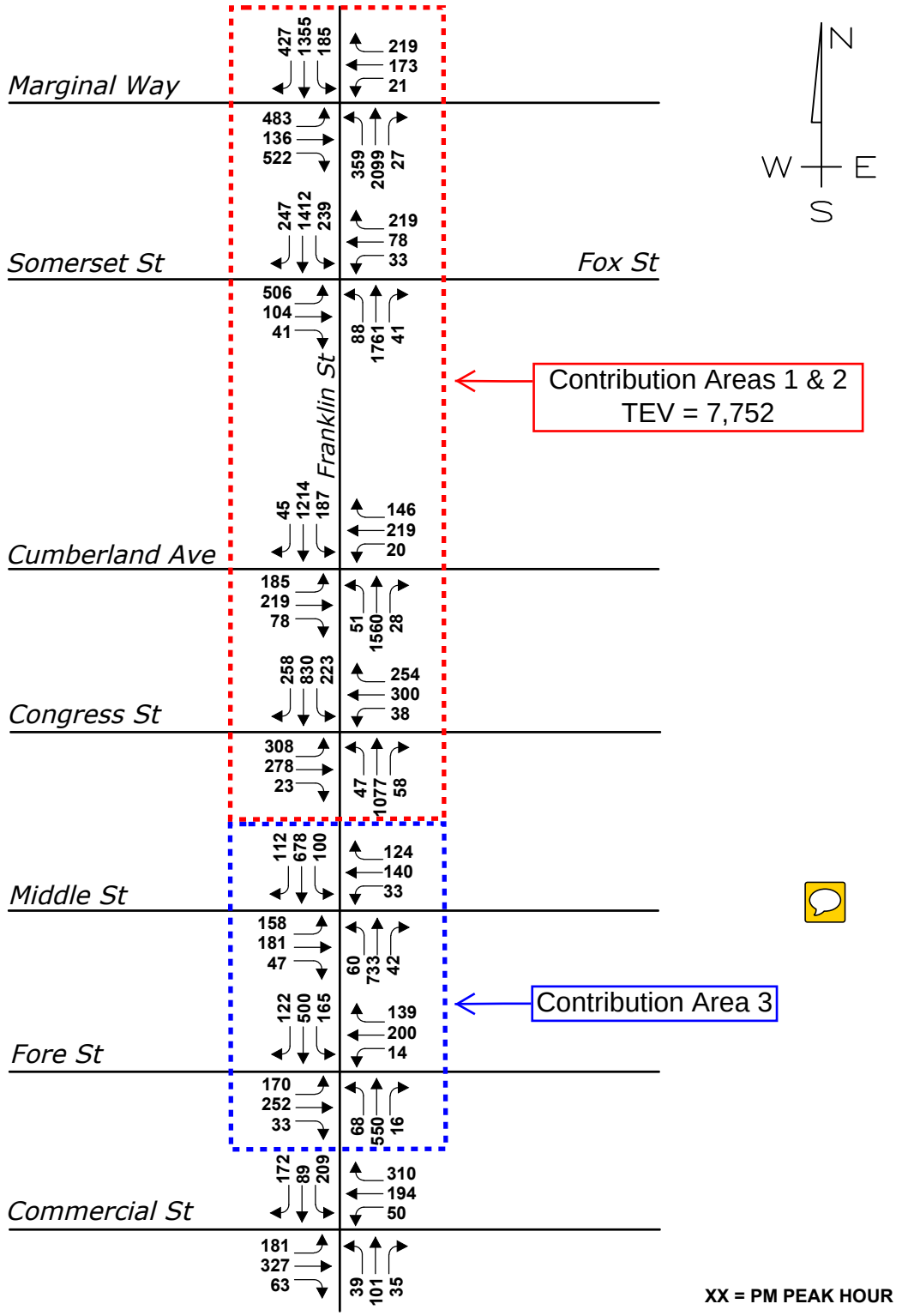
- 2017 Dollars: $ 327,540 / 585 = $ 560 per trip end
- 2022 Dollars: $ 379,480 / 585 = $ 650 per trip end

Conclusion:

Based on discussions between the City and CPB2, CPB2 has agreed to an impact fee structure of $ 650 per trip end entering or leaving their site during the weekday PM peak hour of adjacent street traffic, estimated at 585 total trip ends at full build-out. This fee shall be paid as trip generating uses are added to the site. The Applicant for each future phase of development will be responsible for paying the per-trip fee based on the estimated number of trips for that phase. This fee was developed utilizing costs estimates for Areas 1, 2 and 3 that included escalation factors to account for future construction costs; therefore, no additional future escalation should be added to this fee over the ten-year development plan. The City has agreed this impact fee shall be in lieu of any specific off-site mitigation associated with the impact of the proposed project's traffic as identified in the Traffic Impact Study and associated supporting documents.

2027 Postdevelopment Franklin Street Volumes

Figure No. 1



FAIR SHARE CONTRIBUTION CALCULATION
PORTLAND, MAINE

Design:	EAT	Scale:	NONE
Draft:		Date:	APR 2017
Checked:	RED	File Name:	2027 Franklin St

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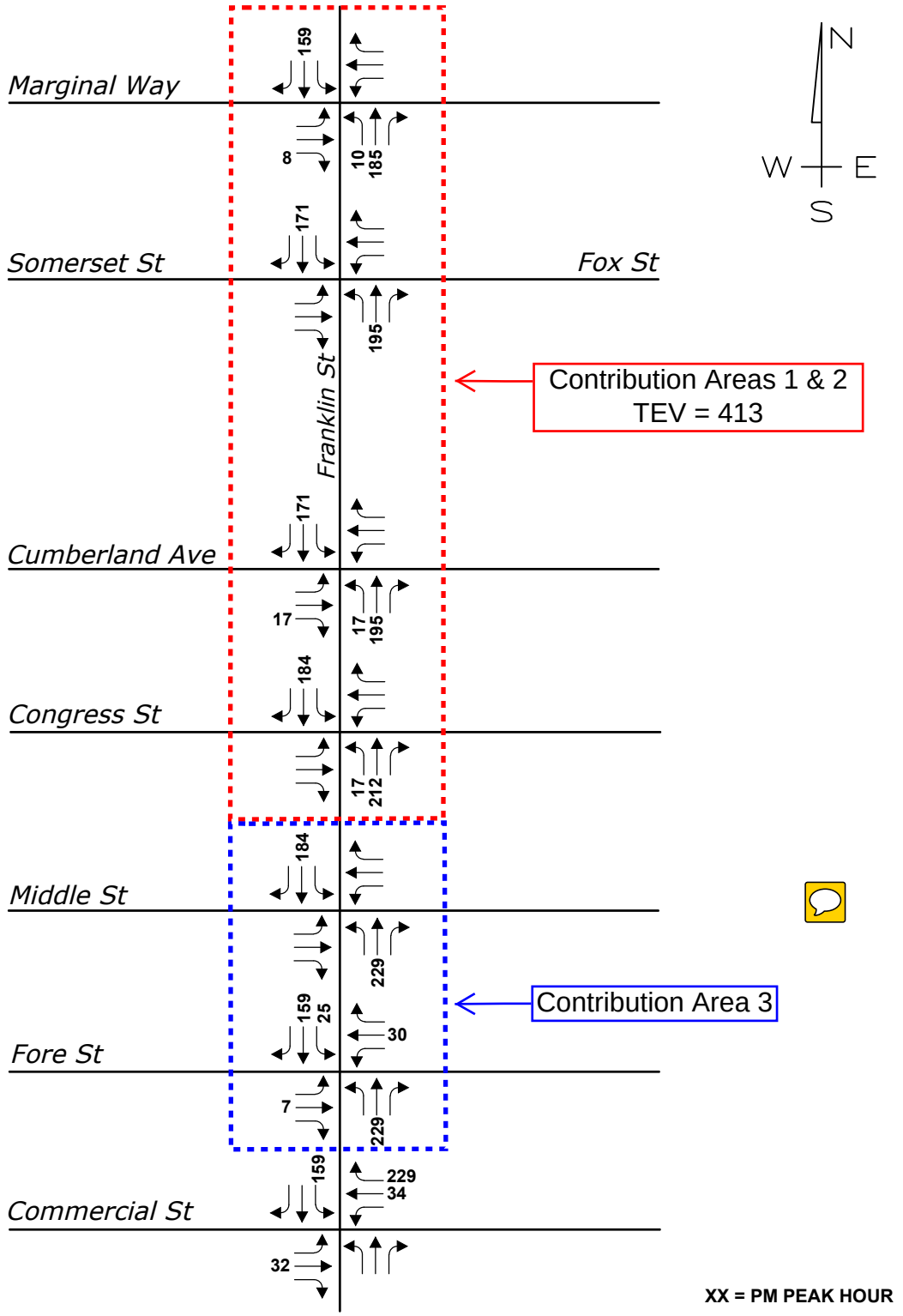
58 Fore Street Franklin Street Traffic Volumes

Figure No. 2



FAIR SHARE CONTRIBUTION CALCULATION
PORTLAND, MAINE

Design:	EAT	Scale:	NONE
Draft:		Date:	APR 2017
Checked:	RED	File Name:	2027 Franklin St

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Gorrill Palmer
Preliminary Opinion of Probable Construction Cost

3/31/2017

Job Number: **2735**
Project Location: **Portland, Maine**
Project Name: **Franklin Street Reconstruction - Short term intersection improvements at Marginal and Somerset**
Date: 3/31/2017

Calculated By: Travis Landry
Checked By: Jared Winchenbach, Don Ettinger

Description of Work:

Planning Level construction cost estimate for providing short term improvements along Franklin Street including providing intersection and roadway improvements between I-295 and Lancaster street. Costs exclude right of way, utilities, geotechnical and environmental. Cost estimate based on the intersection layout at Marginal way developed by TYLIN in the Bayside Transportation Master Plan as well as the Franklin Street design developed by Gorrill Palmer and dated February 2, 2017.

Notes/Assumptions:

1. Work assumes no changes to the I-295 on or off ramps and no modifications to the I-295 ramp signal.
2. Limits of work along Marginal Way reflect the Bayside Transportation Master Plan developed by TYLIN.
3. Limits of work along Franklin Street assume that the proposed Franklin Street design will be carried through through the intersection with Somereset/Fox and transition to existing condition before Lancaster Street.
4. Work assumes partial depth reconstruction in areas where proposed and existing roadway footprint overlap. All other areas, including existing medians to be removed or areas of widening, are assumed full depth reconstruction.
5. Partial depth reconstruction assumes 6" pavement, 6" gravel and 12" common excavation.
6. Full depth reconstruction assumes 6" pavement, 24" gravel and 30" common excavation.
7. Sidewalk work assumes 4" of brick or reinforced concrete, 10" gravel and 14" common excavation. Brick sidewalks are to be placed on the southern side of marginal way and along Fox Street. Concrete is to be used in all other locations.
8. Slope lines are assumed to be located 5' behind back of sidewalk or back of curb.
9. Drainage work assumes installation of underdrain in areas of proposed curbing on the outside edge of the roadway.
10. Catch basin and culvert pipe locations based on conceptual drainage layout.
11. Guardrail is assumed not required.
12. Minor profile changes assumed, existing roadway profiles to be maintained where possible.
13. Engineering and inspection costs estimated at 10% of construction.

FRANKLIN ST - SHORT TERM IMPROVEMENTS AT MARGINAL AND SOMERSET - PLANNING LEVEL OPINION OF COST

Item	Item Description	Unit	Unit Price	Quantity	Amount
203.20	COMMON EXCAVATION	CY	$ 25.00	9000	$ 225,000.00
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	CY	$ 35.00	6000	$ 210,000.00
403.208	HOT MIX ASPHALT 12.5 MM	T	$ 160.00	5125	$ 820,000.00
403.209	HOT MIX ASPHALT 9.5 MM (INCIDENTALS)	T	$ 200.00	50	$ 10,000.00
603.179	18" CULVERT PIPE OPTION III	LF	$ 75.00	410	$ 30,750.00
604.252	CATCH BASIN TYPE A5-C	EA	$ 3,500.00	27	$ 94,500.00
604.262	CATCH BASIN TYPE B5-C	EA	$ 3,500.00	7	$ 24,500.00
605.11	12" UNDERDRAIN TYPE C	LF	$ 50.00	5000	$ 250,000.00
608.08	REINFORCED CONCRETE SIDEWALK	SY	$ 120.00	2375	$ 285,000.00
608.15	BRICK SIDEWALK WITH BITUMINOUS BASE	SY	$ 120.00	500	$ 60,000.00
609.11	VERTICAL CURB TYPE 1	LF	$ 40.00	5000	$ 200,000.00
609.34	CURB TYPE 5	LF	$ 30.00	2000	$ 60,000.00
615.07	LOAM	CY	$ 50.00	450	$ 22,500.00
643.71	TRAFFIC SIGNAL MODIFICATIONS	LS	$ 150,000.00	2	$ 300,000.00
659.10	MOBILIZATION	LS	$ 250,000.00	1	$ 250,000.00

CONSTRUCTION COSTS	$ 2,842,250.00
CONTINGENCY (25%)	$ 710,562.50
TOTAL CONSTRUCTION COSTS	$ 3,552,812.50
PRELIMINARY ENGINEERING (10%)	$ 355,281.25
CONSTRUCTION INSPECTION (10%)	$ 355,281.25
TOTAL PROJECT COSTS	**$4,263,375.00**

Gorrill Palmer
Preliminary Opinion of Probable Construction Cost

3/28/2017

Job Number: **2735**
Project Location: **Portland, Maine**
Project Name: **Franklin Street Reconstruction - Left Turn Lanes on Franklin St at Cumberland and Congress**
Date: 3/28/2017

Calculated By: Travis Landry
Checked By: Jared Winchenbach, Don Ettinger

Description of Work:

Planning Level construction cost estimate for providing short term improvements along Franklin Street including providing left turn lanes in both directions along Franklin Street at the intersections of Cumberland Ave and Congress Street. Costs exclude right of way, utilities, geotechnical and environmental. Cost estimate based on the findings and recommendations noted in the Traffic Evaluation Memo entitled Franklin Street Left Turn Lanes developed by Gorrill Palmer and dated 3/15/17.

Notes/Assumptions:

1. Length of left turn lanes based on 95th percentile queue length for the left turn or 50th percentile queue length for the thru lane.
2. Length of left turn lanes as follows; 105' Franklin NB at Congress, 115' Franklin NB at Cumberland, 395' Franklin SB at Cumberland, 410' Franklin SB at Congress.
3. Total length of left turn lanes proposed = 1025'
4. Left turn lane layout assumes 11' lane width and 2' inside shoulder with no curbing.
5. Work assumes full depth construction of the left turn lanes including 6" pavement and 24" gravel.
6. Common excavation and common borrow required is based on rough typical section assumptions.
7. No closed drainage required, existing open ditching in median to be maintained.
8. No guardrail required.
9. No profile changes assumed, existing roadway profiles to be maintained.
10. No pavement overlay of existing travel lanes.
11. Engineering and inspection costs estimated at 10% of construction.

FRANKLIN ST - LEFT TURN LANES AT CUMBERLAND AND CONGRESS - PLANNING LEVEL OPINION OF COST

Item	Item Description	Unit	Unit Price	Quantity	Amount
203.20	COMMON EXCAVATION	CY	$ 25.00	1000	$ 25,000.00
203.24	COMMON BORROW	CY	$ 25.00	360	$ 9,000.00
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	CY	$ 35.00	1600	$ 56,000.00
403.00	HOT MIX ASPHALT	T	$ 160.00	575	$ 92,000.00
615.07	LOAM	CY	$ 50.00	270	$ 13,500.00
643.71	TRAFFIC SIGNAL MODIFICATIONS	LS	$ 15,000.00	2	$ 30,000.00

CONSTRUCTION COSTS	$ 225,500.00
CONTINGENCY (25%)	$ 56,375.00
TOTAL CONSTRUCTION COSTS	$ 281,875.00
PRELIMINARY ENGINEERING (10%)	$ 28,187.50
CONSTRUCTION INSPECTION (10%)	$ 28,187.50
TOTAL PROJECT COSTS	**$338,250.00**

Gorrill Palmer
Preliminary Opinion of Probable Construction Cost

3/31/2017

Job Number: **2735**
Project Location: **Portland, Maine**
Project Name: **Franklin Street Reconstruction - Short term intersection improvements at Middle and Commercial**
Date: 3/31/2017

Calculated By: Travis Landry
Checked By: Jared Winchenbach, Don Ettinger

Description of Work:

Planning Level construction cost estimate for providing short term improvements along Franklin Street including providing intersection and roadway improvements between Middle and Commercial street. Costs exclude right of way, utilities, geotechnical and environmental. Cost estimate based on Franklin Street design developed by Gorrill Palmer dated February 2, 2017.

Notes/Assumptions:

1. Limits of work along Franklin Street assume that the proposed Franklin Street design will be carried through through the intersection with Middle and transition to existing condition before Congress Street.
2. Work assumes partial depth reconstruction in areas where proposed and existing roadway footprint overlap. All other areas, including existing medians to be removed or areas of widening, are assumed full depth reconstruction.
3. Partial depth reconstruction assumes 6" pavement, 6" gravel and 12" common excavation.
4. Full depth reconstruction assumes 6" pavement, 24" gravel and 30" common excavation.
5. Sidewalk work assumes 4" of brick or reinforced concrete, 10" gravel and 14" common excavation. Brick sidewalks are to be placed in all areas from Middle to Commercial. Areas between Middle and Congress shall be reinforced concrete.
6. Slope lines are assumed to be located 5' behind back of sidewalk or back of curb.
7. Drainage work assumes installation of underdrain in areas of proposed curbing on the outside edge of the roadway.
8. Catch basin and culvert pipe locations based on conceptual drainage layout.
9. Guardrail is assumed not required.
10. Minor profile changes assumed, existing roadway profiles to be maintained where possible.
11. Engineering and inspection costs estimated at 10% of construction.

FRANKLIN ST - SHORT TERM IMPROVEMENTS FROM MIDDLE TO COMMERCIAL - PLANNING LEVEL OPINION OF COST

Item	Item Description	Unit	Unit Price	Quantity	Amount
203.20	COMMON EXCAVATION	CY	$ 25.00	5200	$ 130,000.00
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	CY	$ 35.00	3425	$ 119,875.00
403.208	HOT MIX ASPHALT 12.5 MM	T	$ 160.00	2650	$ 424,000.00
603.179	18" CULVERT PIPE OPTION III	LF	$ 75.00	200	$ 15,000.00
604.252	CATCH BASIN TYPE A5-C	EA	$ 3,500.00	25	$ 87,500.00
604.262	CATCH BASIN TYPE B5-C	EA	$ 3,500.00	2	$ 7,000.00
605.11	12" UNDERDRAIN TYPE C	LF	$ 50.00	2450	$ 122,500.00
608.08	REINFORCED CONCRETE SIDEWALK	SY	$ 120.00	650	$ 78,000.00
608.15	BRICK SIDEWALK WITH BITUMINOUS BASE	SY	$ 120.00	2870	$ 344,400.00
609.11	VERTICAL CURB TYPE 1	LF	$ 40.00	2450	$ 98,000.00
609.34	CURB TYPE 5	LF	$ 30.00	380	$ 11,400.00
615.07	LOAM	CY	$ 50.00	150	$ 7,500.00
643.71	TRAFFIC SIGNAL MODIFICATIONS	LS	$ 150,000.00	3	$ 450,000.00
659.10	MOBILIZATION	LS	$ 200,000.00	1	$ 200,000.00

CONSTRUCTION COSTS	$ 2,095,175.00
CONTINGENCY (25%)	$ 523,793.75
TOTAL CONSTRUCTION COSTS	$ 2,618,968.75
PRELIMINARY ENGINEERING (10%)	$ 261,896.88
CONSTRUCTION INSPECTION (10%)	$ 261,896.88
TOTAL PROJECT COSTS	**$3,142,762.50**

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Supplemental Traffic Analysis
58 Fore Street – Portland, Maine

Date: April 20, 2017
Subject: Additional Traffic Analysis
To: City of Portland, CPB2, Woodard & Curran
From: Randy Dunton, Gorrill Palmer (JN 3138)

The following describes capacity analysis and evaluations that were previously completed in January 2017 as a follow up to a meeting held on January 9, 2017 with the City of Portland, CPB2, Woodard & Curran, and Gorrill Palmer. The following is an understanding of the additional information requested by the City at that time.

Study Area Based on MaineDOT Criteria

The Maine State Rules for the Department of Transportation Chapter 305: Rules and Regulations Pertaining to Traffic Movement Permits, Section 7D states that the study area should include "the first major intersections to either side of the development driveway(s)." It also states that "additional intersections are required if threshold volumes are met." The threshold volumes for any one hour period of traffic attributed to the proposed development equals or exceeds the following:

- 25 vehicles in a left turn only lane
- 35 vehicles in a through lane, right turn lane, or combined through and right turn lane, or
- 35 vehicles (multiplying the left turn volume by 1.5) in a combined left turn and through lane or a combined left turn, through, and right turn lane

The attached figures 10 and 11 show the City approved AM and PM trip distribution for the development. The following intersections meet the above MaineDOT criteria. The intersections in **bold** indicate intersections that have been included in the study area per the City's request.

- **Commercial Street / Franklin Street**
- **Fore Street / Franklin Street**
- **Middle Street / Franklin Street**
- **Congress Street / Franklin Street**
- **Cumberland Avenue / Franklin Street**
- **Somerset Street / Fox Street / Franklin Street**
- **Marginal Way / Franklin Street**
- **Congress Street / Mountfort Street / Washington Avenue**

- **Cumberland Avenue / Washington Avenue**
- Oxford Street / Washington Avenue
- Monroe Street / Washington Avenue
- Marion Street / Washington Avenue
- Madison Street / Washington Avenue
- Fox Street / Walnut Street / Washington Avenue
- Gould Street / Washington Avenue
- Eastern Promenade / Washington Avenue
- **Thames Street Extension / Proposed Road**
- **Fore Street / Proposed Road**
- **Fore Street / Hancock Street**
- **Site Driveway / Fore Street / Waterville Street**
- **Thames Street / Hancock Street**
- **Commercial Street / India Street**
- Park Street / York Street
- York Street / State Street
- **India Street / Fore Street**
- **Fore Street / Mountfort Street**
- **Congress Street / India Street** (This intersection does not meet MaineDOT criteria but was included in the study area per City's request)

Updated Capacity Analysis

Based on comments received at the recent January 9, 2017 meeting with the City, GP updated the capacity analyses for the study area intersections that were previously identified by the City for inclusion. The following is a discussion of the comments and the capacity analysis results.

Existing Condition

GP has included a 2017 Existing Conditions analysis for the study area intersections using the existing traffic volumes and roadway geometry.

Alternate Franklin Street Design

The City requested GP update the capacity analysis for Franklin Street using Mr. Errico's design of the Marginal Way end of the corridor for the 2027 Predevelopment and 2027 Postdevelopment conditions. This includes the Synchro information that was provided by TY Lin for Franklin Street from the I-295 ramps to Somerset / Fox. The phasing of the intersections (Synchro files) were also provided by TY Lin and the timings were adjusted slightly per their suggestion to reflect 2027 traffic volumes.

Study Area Pedestrian Volumes

Mr. Errico requested that pedestrian volumes be included at the following intersections:

- Commercial Street / Franklin Street
- Fore Street / India Street
- Congress Street / India Street
- Congress Street / Franklin Street
- Cumberland Street / Franklin Street
- Fox Street / Somerset Street / Franklin Street
- Marginal Way / Franklin Street

GP updated the capacity analysis to include the pedestrian volumes at the specified intersections. It should be noted that pedestrian volumes at the intersection of Franklin Street with Cumberland Avenue were not included in the capacity analysis for Franklin Street that was completed by GP and reviewed by the City for a separate project and used for this analysis. However, it is our understanding that the pedestrian crossings at this location in the future will be concurrent, and based on the timings / phasing of the intersection, there is sufficient time for the pedestrians to cross concurrently without extending the green times, thus the capacity analysis results would not change.

Updated Capacity Analysis Results

GP completed an updated capacity analysis for the requested study area intersections using the Synchro/SimTraffic computer software. Level of service rankings are similar to the academic ranking system where an 'A' is very good with little control delay and an 'F' represents significant congestion.

The following tables summarize the relationship between control delay and level of service:

Level of Service for Unsignalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Level of Service for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec)
A	Less than 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The capacity analyses were completed with existing geometry for the 2017 Existing condition, and Mr. Errico's design of the intersection of Franklin Street with Marginal Way and Somerset / Fox for the 2027 Predevelopment and 2027 Postdevelopment conditions. Although there are proposed improvements for the entire Franklin Street corridor, they are not anticipated to be completed by 2027, whereas the near term improvements provided by Mr. Errico are expected to be completed by 2027. It should be noted that there are two primary differences between the Synchro information provided by TY Lin and that used in this evaluation; 1) the volumes used in this evaluation are slightly higher than those used by Mr. Errico in the Bayside evaluation. This is because the Bayside study used the same volumes as the Franklin Street corridor study, and through recent counts that were completed as part of this study, those volumes increased slightly and 2) the Bayside evaluation used the design for all of Franklin Street that was identified in the Franklin Street Study, whereas we were instructed to use the existing geometry. The following table summarizes the updated capacity analysis results.

Level of Service Summary

Approach	AM Peak Hour			PM Peak Hour		
	2017 Existing	2027 Pre	2027 Post	2017 Existing	2027 Pre	2027 Post
Franklin / I-295 Ramps (S)						
I-295 NB Off-Ramp EB	C	F	F	D	F	F
I-295 Off-Ramp SE	F	E	E	F	F	F
Franklin / Marginal (S)						
Franklin SE	C	B	B	C	E	E
Franklin NW	C	E	E	E	D	D
Marginal NE	D	D	D	F	F	F
Marginal SW	D	C	C	D	D	E
Overall	**C**	**C**	**C**	**F**	**F**	**F**
Franklin / Somerset / Fox (S)						
Franklin SE	C	B	C	C	F	F
Franklin NW	C	C	D	F	F	F
Somerset NE	D	D	D	F	F	F
Fox SW	C	C	C	D	F	F

Approach	AM Peak Hour			PM Peak Hour		
	2017 Existing	2027 Pre	2027 Post	2017 Existing	2027 Pre	2027 Post
Overall	**C**	**C**	**C**	**E**	**F**	**F**
Franklin SB / Cumberland (S)						
Franklin SB	B	B	B	F	F	F
Cumberland NE	C	D	D	F	F	F
Cumberland SW	A	A	B	B	D	D
Overall	**B**	**B**	**B**	**F**	**F**	**F**
Franklin NB / Cumberland (S)						
Franklin NB	A	A	A	D	F	F
Cumberland NE	B	B	B	C	C	D
Cumberland SW	C	D	D	F	F	F
Overall	**B**	**C**	**C**	**E**	**F**	**F**
Franklin SB / Congress (S)						
Franklin SB	B	B	C	E	F	F
Congress NE	C	C	C	F	F	F
Congress SW	A	A	A	A	A	A
Overall	**B**	**B**	**C**	**F**	**F**	**F**
Franklin NB / Congress (S)						
Franklin NB	A	B	B	C	F	F
Congress NE	B	B	B	C	D	E
Congress SW	F	F	F	F	F	F
Overall	**F**	**F**	**F**	**F**	**F**	**F**
Franklin / Middle (S)						
Franklin SE	A	B	B	B	B	C
Franklin NW	B	B	B	B	E	F
Middle NE	B	B	B	B	F	F
Middle SW	B	B	B	B	E	F
Overall	**B**	**B**	**B**	**B**	**F**	**F**
Franklin / Fore (S)						
Franklin SE	B	B	B	B	C	C
Franklin NW	B	B	B	C	F	F
Fore NE	B	B	B	B	F	F
Fore SW	B	B	B	B	F	F
Overall	**B**	**B**	**B**	**B**	**F**	**F**
Franklin / Commercial (S)						
Franklin EB	C	C	C	C	C	C
Franklin WB	D	D	D	D	F	F
Commercial NB	C	C	C	C	F	F
Commercial SB	C	C	D	C	E	F

Approach	AM Peak Hour			PM Peak Hour		
	2017 Existing	2027 Pre	2027 Post	2017 Existing	2027 Pre	2027 Post
Overall	**C**	**C**	**C**	**C**	**E**	**F**
Commercial / Thames / India (U)						
Commercial EB	A	A	A	A	A	B
Thames WB	A	A	B	A	A	B
India SE	A	A	A	A	A	A
India / Fore (U)						
Fore EB	A	A	A	C	D	F
Fore WB	A	B	B	C	C	E
India SE	B	B	B	C	C	D
India NW	A	A	A	C	C	E
Hancock / Fore (U)						
Fore NB	A	A	A	A	A	A
Fore SB	A	A	A	A	A	A
Hancock SE	A	A	A	A	A	A
Hancock NW	A	A	A	A	A	A
Mountfort / Fore (U)						
Fore NE	A	A	A	A	A	A
Fore SW	A	A	A	A	A	A
Mountfort SE	A	A	A	A	A	A
Hancock / Thames (U)						
Thames EB	A	A	B	A	A	A
Thames WB	A	A	A	A	A	A
Ocean Gateway NB	A	A	A	A	A	A
Hancock SB	A	A	A	A	A	A
Existing Driveways / Fore (U)						
Fore EB	A	A	N/A	A	A	N/A
Fore WB	A	A	N/A	A	A	N/A
100 Fore St NB	A	A	N/A	A	A	N/A
58 Fore St NW	A	A	N/A	A	A	N/A
Proposed Road / Fore (U)						
Fore EB	N/A	N/A	A	N/A	N/A	A
Fore WB	N/A	N/A	A	N/A	N/A	A
Proposed Road NB	N/A	N/A	A	N/A	N/A	A
Proposed Road / Thames (U)						
Thames NE	N/A	N/A	A	N/A	N/A	A
Thames SW	N/A	N/A	A	N/A	N/A	A
Proposed Road SB	N/A	N/A	A	N/A	N/A	A

Approach	AM Peak Hour			PM Peak Hour		
	2017 Existing	2027 Pre	2027 Post	2017 Existing	2027 Pre	2027 Post
Waterville / Fore (U)						
Fore NE	A	A	A	A	A	A
Fore SW	A	A	A	A	A	A
Waterville SE	A	A	A	A	A	A
Site Driveway NW	N/A	N/A	A	N/A	N/A	A
Congress / India (S)						
Congress NE	B	B	C	C	C	D
Congress SW	A	B	B	B	B	B
India NW	B	B	B	C	D	D
Overall	**B**	**B**	**B**	**C**	**C**	**D**
Washington / Congress (S)						
Congress NE	A	A	A	B	C	C
Congress SW	B	C	C	C	D	C
Mountfort NB	C	C	B	C	C	C
Washington SB	B	B	B	B	B	B
Overall	**B**	**B**	**B**	**B**	**C**	**C**
Cumberland / Washington (S)						
Cumberland NE	B	B	B	B	C	C
Cumberland SW	B	B	B	B	B	B
Washington NB	B	C	C	B	B	B
Washington SB	B	B	C	B	C	C
Overall	**B**	**B**	**B**	**B**	**B**	**C**

(U) – Unsignalized Intersection, (S) – Signalized Intersection

As shown in the table, the study area intersections are forecast to operate at or above an overall level of service 'D' after the development is completed, with the exception of the Franklin Street intersections and the intersection of Fore Street with India Street during the PM peak hour. As shown in the table, five of the eight Franklin Street intersections during the 2017 Existing Conditions operate at failing levels of service (below a "D"), especially during the PM peak hour. This is consistent and verifies what is already being observed today in the PM peak hour. During the 2027 PM Predevelopment conditions, all eight of the Franklin Street intersections are forecast to operate at a failing level of service, which continues with the 2027 PM Postdevelopment condition. The three intersections that change from acceptable levels of service to failing levels of service are the three intersections nearest the Commercial Street end of Franklin Street. As discussed at the most recent January meeting with the City, what appears to be occurring in the PM peak hour, is that the overcapacity queue created by the outbound traffic on Franklin Street during the PM peak hour gets longer from 2017 to 2027 and as it does, it impacts intersections further away from the Marginal Way end of the corridor.

The existing timing and phasing of the two intersections of India Street with Congress Street and Congress Street with Washington Avenue / Mountfort Street include an exclusive pedestrian phase. For this analysis, the exclusive phase was replaced with concurrent pedestrian phases, as is the trend for the City. The City's preference for this area, according to Jeremiah Bartlett, is to implement a leading pedestrian interval (LPI) at some point in the future. The intersection of Washington Avenue with Cumberland Avenue includes concurrent pedestrian phases in the existing timing and phasing, so the phasing was not changed. It is assumed that if the City altered the pedestrian phasing at these intersections adjustments to the timing would also be made before the project is complete. Therefore, timing adjustments were included in the capacity analysis at the three intersections during all three conditions.

Transportation Demand Management Plan

The applicant submitted a Transportation Demand Management (TDM) Plan to the City on October 31, 2016. The TDM plan is not required in order to issue the TMP; however, the City has requested the following additional information be submitted for the revised TDM Plan when it is submitted:

Revised Transportation Demand Management Plan

The City requested that the TDM Plan for the project be updated to include more information on transit. Additionally, it should explain further about carpooling, covered or indoor bicycle racks, showers, off-peak work hours, and car share programs. The CPB2 Team is currently revising the TDM Plan and will be resubmitting to the City for their review and comment.

The CPB2 Team met with Mr. Greg Jordan, METRO General Manager, on January 11, 2017 to discuss how 58 Fore Street can participate in helping transit services in and around the proposed project. Mr. Jordan discussed three areas that METRO is currently pursuing 1) Bus Rapid Transit (BRT) line which is geared toward students (Husky Line) 2) Thompson's Point Hub Link which connects points of origin / destination such as airports, train stations, bus stations etc. 3) inclusion in the Transit District, which would allow METRO to use matching funds not only for structures but also for maintenance and operations. Mr. Jordan indicated he would be open to creating a new transit stop adjacent to the access to the project on Thames Street extension and then even possibly continuing the route onto the Eastern Promenade.

TDM Plan Effectiveness

The City requested that the CPB2 Team explore examples of implemented TDM Plans nationwide and identify the effectiveness of those plans. Those plans should then be compared to the information both used for this study based on actual surveys and assumptions in the TDM

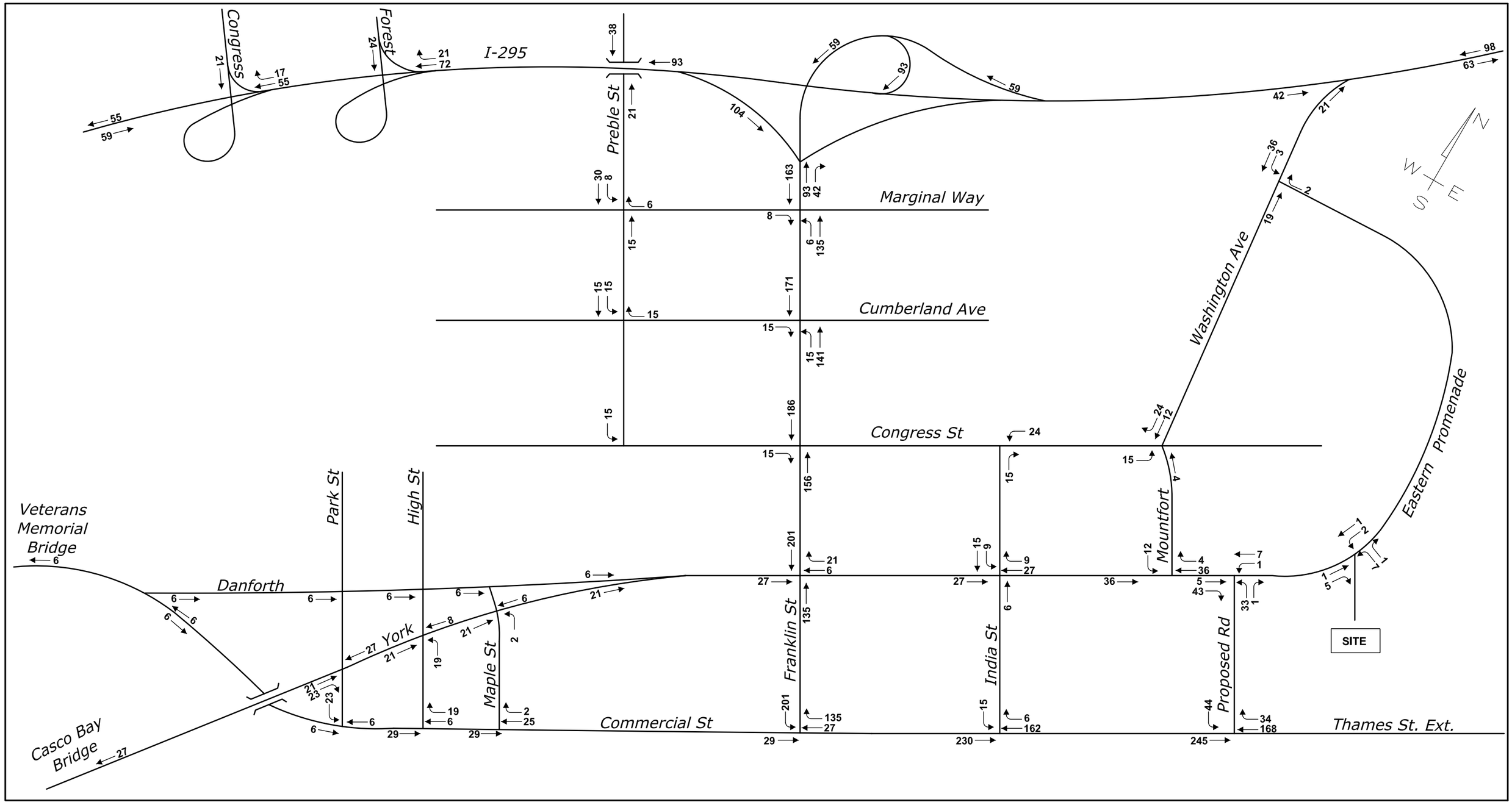
plan. The CPB2 Team is in the process of exploring other TDM Plans and their results, which will be summarized and submitted with the revised TDM Plan.

Project Mitigation

Since the submittal of this information to the City in January, the City and the CPB2 Team have been working closely with each other and evaluating proper methodologies to arrive at a fair share contribution to mitigate the project's impacts on the adjacent roadway network. The results of those discussions are summarized in a Memo "Impact Fee Calculation, 58 Fore Street Mixed Use Development, Portland, Maine" dated April 20, 2017 that was submitted to the City.

AM Trip Assignment

Figure No. 10



58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

Design:	ET	Scale:	NONE
Draft:	LAN	Date:	DEC 2016
Checked:	RED	File Name:	3138-TRAFF3.dwg

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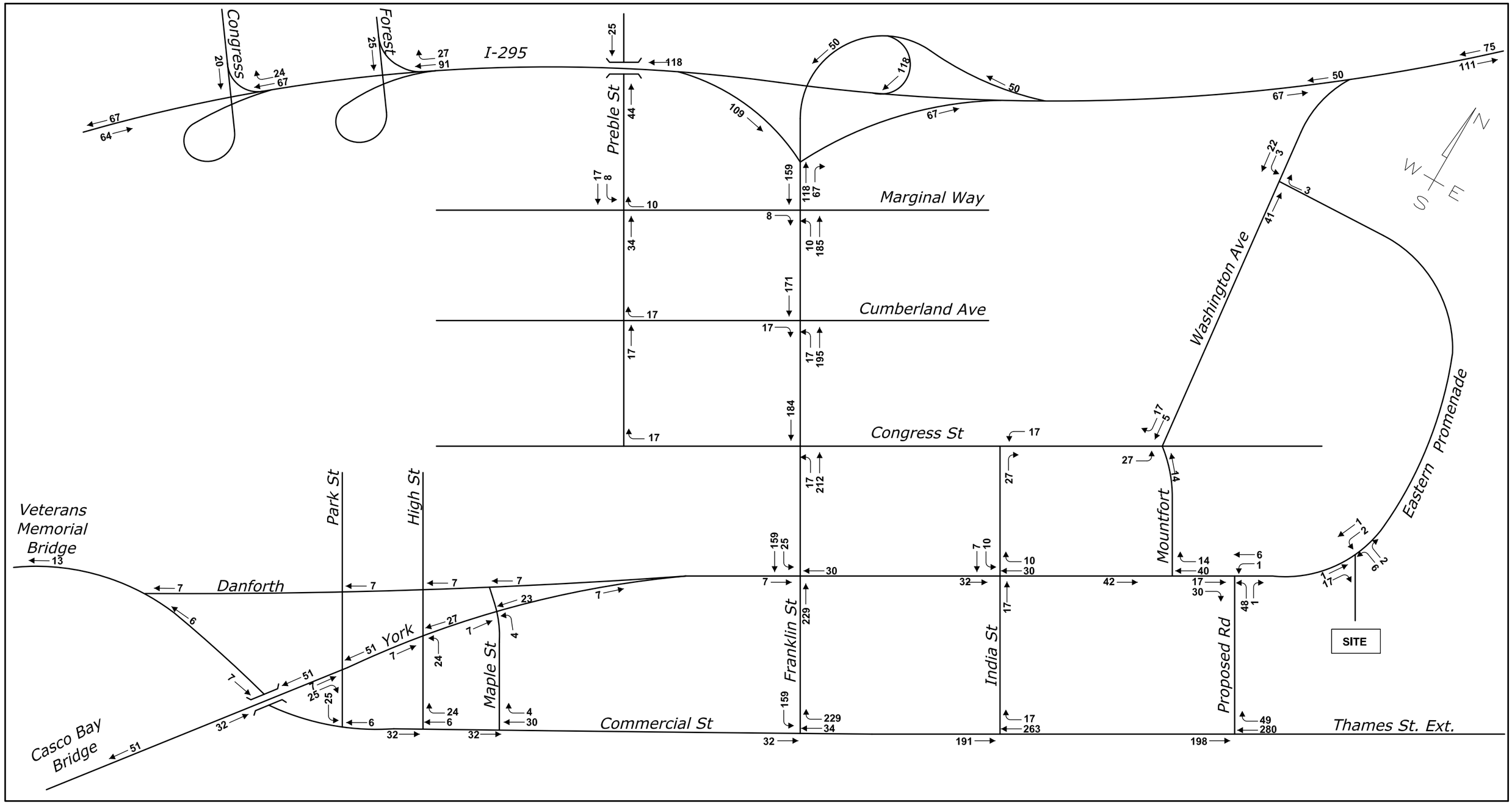
PM Trip Assignment

Figure No. 11



58 FORE STREET REDEVELOPMENT
PORTLAND, MAINE

Design: ET
Draft: LAN
Checked: RED
Scale: NONE
Date: DEC 2016
File Name: 3138-TRAFF3.dwg

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PLANNING BOARD REPORT
PORTLAND, MAINE

Emergency Shelter Amendments
Zoning Text Amendments for Emergency Shelters as conditional uses in B-3, B-4, B5, IL, ILb, IM and IH zones
Health and Human Services Committee, City of Portland, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: April 25, 2017	Prepared by: Barbara Barhydt, Development Review Services Manager Date: April 20, 2017

I. INTRODUCTION

Portland's emergency shelters are generally older facilities, under-sized for current demands, and unable to provide a broad range of services for homeless individuals. The Health and Human Services Committee is interested in developing a new state-of-the-art shelter to best serve the clientele as well as surrounding neighborhoods. At present, the needs of such a facility are being determined but there is no site identified. Best practices call for providing permanent housing for homeless individuals, such as Portland's successful Housing First projects, and then allow homeless shelters to offer temporary shelter accompanied with needed counseling and services to return clients to stable housing. As part of planning for shelters, the Health and Human Services Committee began by evaluating current regulations and proposing updates to the zoning code. In particular, members identified the current limitation to the B-3 zone as both an obstacle to siting a modern shelter, and also based on outdated assumptions about the needs of shelter clients. The Committee has drafted new conditional use standards for emergency shelters and is proposing to add emergency shelters as a conditional use in two business zones and the industrial zones.

The City Council visited shelters in the Boston area and learned about best practices. Following that, the Health and Human Services Committee asked staff to develop proposed amendments, and held three meetings to develop the proposed amendments. The Committee sought guidance from shelter providers from the City and non-profits, as well as from the public. On April 13, 2017, following a public hearing on the matter, the Committee endorsed the amendments as drafted and forwarded them to the Planning Board for their consideration and recommendation to the City Council.

The Planning Board held a workshop on the preliminary draft on April 6, 2017. Notices for this item appeared in the legal ad, which was published in the Portland Press Herald on April 17 and 18. It was also posted to the web site and distributed through notify me. The Planning Office has not received any public comment to date.

II. BACKGROUND ON EMERGENCY SHELTERS

Oxford Street Shelter (City operated), the Family Shelter (City operated), and the Joe Kreisler Teen Center on Preble Street are existing emergency shelters in Portland. All are located within the Downtown Business B-3 zone. Emergency shelters are currently permitted only in that zone,

as a conditional use. These facilities provide night-time shelter, but do not provide daytime services due to the limited space within these buildings. Milestone (located on India Street) and the Family Crisis Center (located in the West End) also provide emergency shelter services. There is an emergency shelter on the first floor of Florence House on Valley Street, which was permitted through a contract zone.

The Health and Human Services Committee reviewed the shelters and best practices that have been developed in other communities. The list of resources considered by the Committee is included as Attachment A and a copy of the Comparative Analysis of Homeless Facilities is included as Attachment B. In addition, the Committee considered the Final Resolution from the Salt Lake County Collective Impact on Homelessness (Attachment C) and the Public Safety & Security Benchmarking Study (summary as Attachment D).

The Committee asked Winton Scott Architects to develop a floor plan for a shelter meeting current best practices. The first-floor concept is included as Attachment E. In this floor plan, there is a multi-purpose/dining room with adjoining kitchen facilities to accommodate 136 people. There are lockers, a laundry facility, bathrooms, offices and a central office area adjoining separated sleeping areas. The concept plan also shows an outdoor park/seating area. The larger facility is intended to offer services and counseling support within the shelter in order provide accessible and effective services.

In speaking with shelter operators, staff noted that the needs of emergency shelters have changed as the strategies for ending homelessness have changed. The priority used to be in rapidly rehousing recent arrivals to the shelter. That strategy was based on the idea that those clients are the easiest to find housing for, as they have often ended up in a shelter due to a short-term challenge. However, that left long-term shelter stayers in facilities for extended periods of time. As the shelter became a de-facto home for those stayers, and as they were not permitted to stay in most shelters due to space limitations, there was a need to provide a shelter near other services, such as downtown.

The newer model focusses on providing housing for those long-term stayers. While those housing units are more difficult to locate, because the challenges of housing this population is greater, the benefits are also much higher. Freeing up one bed from a long-term stayer allows many more transient users to use that same bed. As a shelter becomes a shorter-term solution for emergencies, there is a lessened need to provide nearby services, and instead the focus should be on providing a modern, clean, safe facility. Finally, modern shelters allow occupants to remain during the day and the shelters provide on-site space for medical care, substance abuse treatment, counseling, job readiness, housing assistance, and other services.

For all these reasons, the previous rationale for locating shelters downtown is no longer valid. The goal now is to provide zoning that allows a modern facility to be developed, for shorter-term stayers, near transit for those who need transportation. The HHS Committee believes the proposed zoning amendments meet these goals and allow flexibility for shelter siting, while putting in place new conditional use standards to ensure that a shelter meets current best practices.

III. CURRENT LAND USE CODE REGULATIONS FOR EMERGENCY SHELTERS

Definition:
Portland's zoning code defines emergency shelter as follows:

Emergency shelter: A facility providing temporary overnight shelter to homeless individuals in a dormitory-style or per-bed arrangement.

Conditional Use Standards specific to Emergency Shelters

Emergency Shelters are listed as a conditional use only in the Downtown Business B-3 zone and the Planning Board is substituted for the Zoning Board of Appeals for the review. The specific conditional use standards in the B-3 district are as follows:

4. Emergency shelters, subject to the following conditions, in addition to the provisions of section 14-474:

    a. The facility shall be in compliance with the city's current Comprehensive Housing Assistance Plan, a copy of which is on file in the department of planning and urban development, or, if there is no current edition of the Comprehensive Housing Assistance Plan, with a determination of need by the director of the department of health and human services.

    b. The facility shall be registered with the City of Portland Department of Health and Human Services.

Conditional Use Standards for all Conditional Uses

The general standards in Section 14-474, which are applied to all conditional uses are the following:

2. *Standards.* The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:

    a. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and

    b. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and

    c. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

Parking Requirements

Division 20, Off-Street Parking, sets a parking requirement of 1 space per every 2 employees.

Site Plan Ordinance

As noted above, the Planning Board is substituted for the ZBA to conduct the conditional use reviews of Emergency Shelters. The site plan ordinance lists emergency shelters as subject to at a

minimum a Level II site plan review, unless the size of the facility triggers a Level III review with the Planning Board.

IV. PROPOSED MAP AND TEXT AMENDMENTS

A. Text Amendments to list Emergency Shelters in Specific Zones

The proposed text amendments add Emergency Shelters as a conditional use to six zoning districts:

- Commercial Corridor B-4;
- Urban Commercial B5, excluding B-5b;
- Low Impact Industrial IL;
- Low Impact Industrial ILb;
- Moderate Impact Industrial IM; and
- High Impact Industrial IH.

The proposal retains emergency shelters as a conditional use in the Downtown Business Zone with proposed updated conditional use standards. The use is proposed for the B-5 zone, which has locations both on and off-peninsula, but the B-5b zone is excluded as it is a small area along the Waterfront. Please note that while emergency shelters are proposed in the various commercial and industrial zones, the entire zones are not open to this use based upon meeting the criteria of the conditional use standards, which requires the use to be within ¼ mile of a METRO Line or within ½ mile of METRO line if adequate indoor space for day time shelter use as well as strategies to help residents utilize transit. Attachment 1 is the zoning map showing the zones where shelters are proposed to be permitted as a conditional use. Following that map are two maps that show the ¼ mile buffer along METRO transit routes (Attachment 2) and the same map with the ½ mile buffers (Attachment 3).

B. Text Amendments for the Conditional Use Standards

The updated conditional use standards for emergency shelters are proposed to be included in each of the zones listed above and in the B-3 zone. The proposed conditional use standard would allow emergency shelters to be reviewed by the Zoning Board of Appeals (ZBA) unless the proposal triggers a Level III site plan review and then the Planning Board would be substituted for the ZBA. Attachment 4 contains the proposed text amendments for each zone. The standards are proposed to provide a safe sleeping environment for homeless individuals and to offer a broader range of services and facilities to serve the daily needs of clients. The standards address the following:

> 4. Emergency shelters, subject to the following conditions, in addition to the provisions of section14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:
>
> a. The facility shall provide adequate space for conducting security searches and other assessments;
>
> b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;
>
> c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety

measures; Controls for resident behavior and noise levels; and Monitoring Reports.

1. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit;

2. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs.

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site;

e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests;

V. POLICY DISCUSSION

A. Pending Comprehensive Plan

The pending Comprehensive Plan before the City Council has a vision statement that calls for the City to be equitable, sustainable, dynamic, secure, authentic and connected. The vision statements under equitable call for the following:

- We will remain an open and inclusive City, celebrating diversity and providing a welcoming and safe place for residents and visitors alike.
- We will be a state and national leader in achieving a more equitable city.
- The benefits and costs of our City will be born fairly across the entire City.
- Our government will continue to be transparent and its policies fair and uniformly enforced.
- We will incorporate the needs of all of our residents in planning for our future.

The secure vision also states:

- We will use compassion in our decision making and in our approach to public safety.
- We will be committed to accessible housing and healthy food for all our residents.

Relevant local goals found under the Housing Policy Guide call the City to "Increase, preserve, and modify the overall supply of housing City-wide to meet the needs, preferences and financial capability of all households."

The Facilities and Services policy guide call for the City to "Provide public safety, emergency response, and emergency management facilities and services that can effectively meet the needs of all residents." Pertinent strategies within that section include:

- Explore efficient ways of delivering services to the homeless by investigating a wide variety of services models, evaluating the local potential of these models, and developing plans for implementation.
- Align the City's land use code with City Council policy direction on shelter placement, shelter models, and facility requirements.
- Continue to embrace innovation and best practices towards eliminating homelessness.

B. Discussion

An overview of the proposed amendments was presented to the Planning Board at the workshop on April 6th. At the workshop, Board members raised questions and concerns about designated industrial zones as allowable areas for shelters. The background information from the Committee highlights that modern emergency shelters provide a range of services in a centralized location, which necessitates larger buildings to accommodate multiple functions. The first-floor concept developed by Winton Scott Architects depicts the full range of services and potential space needs to accommodate an efficient delivery of services to meet the needs of the homeless.

Staff recommends, and the Health and Human Services Committee supports, allowing the use in those zones based on a changing model and need for emergency shelters. First, modern, state-of-the-art shelters have land area requirements that can be hard to meet in a densely-developed city. Practically speaking, it is important to keep the industrial zones open as options because they tend to have larger lots that can be uses for modern facilities, provided a shelter allows for transit accessibility. Second, the model for provision of shelter has changed away from providing a long-term place to stay to providing a truly emergency shelter for a relatively short period of time. This model change has been enabled by better success in locating permanent housing with support services for the longest-term residents of shelters and freeing up beds for short-term stayers. Under the new model, the focus is on providing a safe space with facilities on-site for residents while they get back on their feet rather than a more permanent residence. Third, while the industrial zones are permitted locations, the conditional use language also requires that shelters be located near METRO service. In effect, that limits the permitted areas to major corridors and not to the industrial zones in general (see attached maps for reference.) Fourth, the conditional use standards are proposed to guide the establishment of shelters that are well managed and offer the counseling and services needed to eliminate homelessness in Portland.

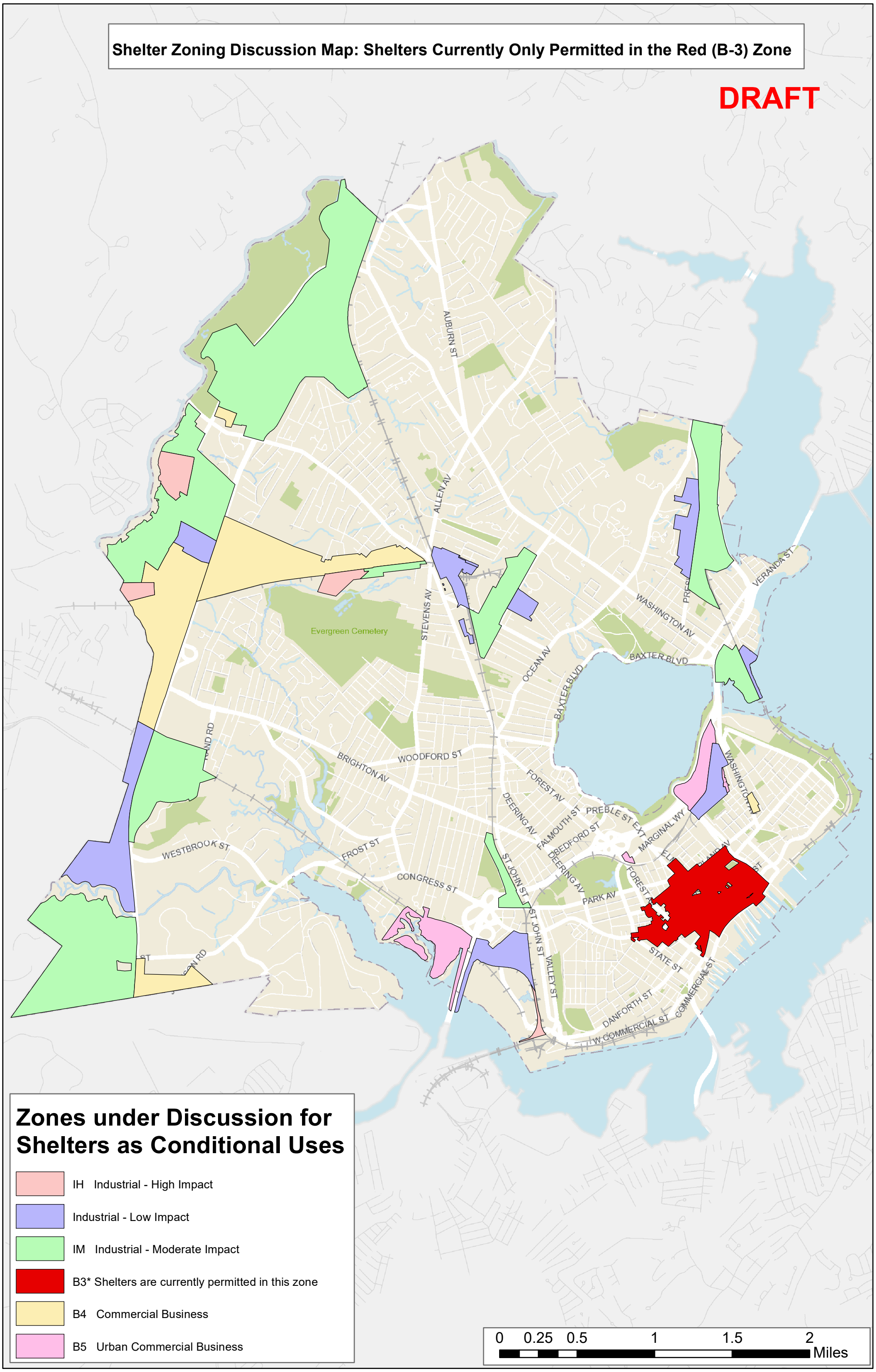
VI. PROPOSED MOTION

On the basis of the material provided in this report, public testimony, a review of applicable policies, and other information, the Planning Board finds that the proposed text amendments to the conditional use provisions in Division 12, B-3 Downtown Business Zones; Division 12.5 B-4 Commercial Corridor; Division 12.6 B-5 Urban Commercial Mixed Use Zone; Division 13 I-L and ILb Industrial Zones; Division 14 IM, I-Ma and I-Mb Industrial Zones; and Division 15 IH and IHb Industrial Zones and presented in Attachment 4 of this report **[are or are not]** consistent with the Comprehensive Plan and **[recommends or does not recommend**] adoption of the proposed amendment to the City Council.

Attachments to the Report:

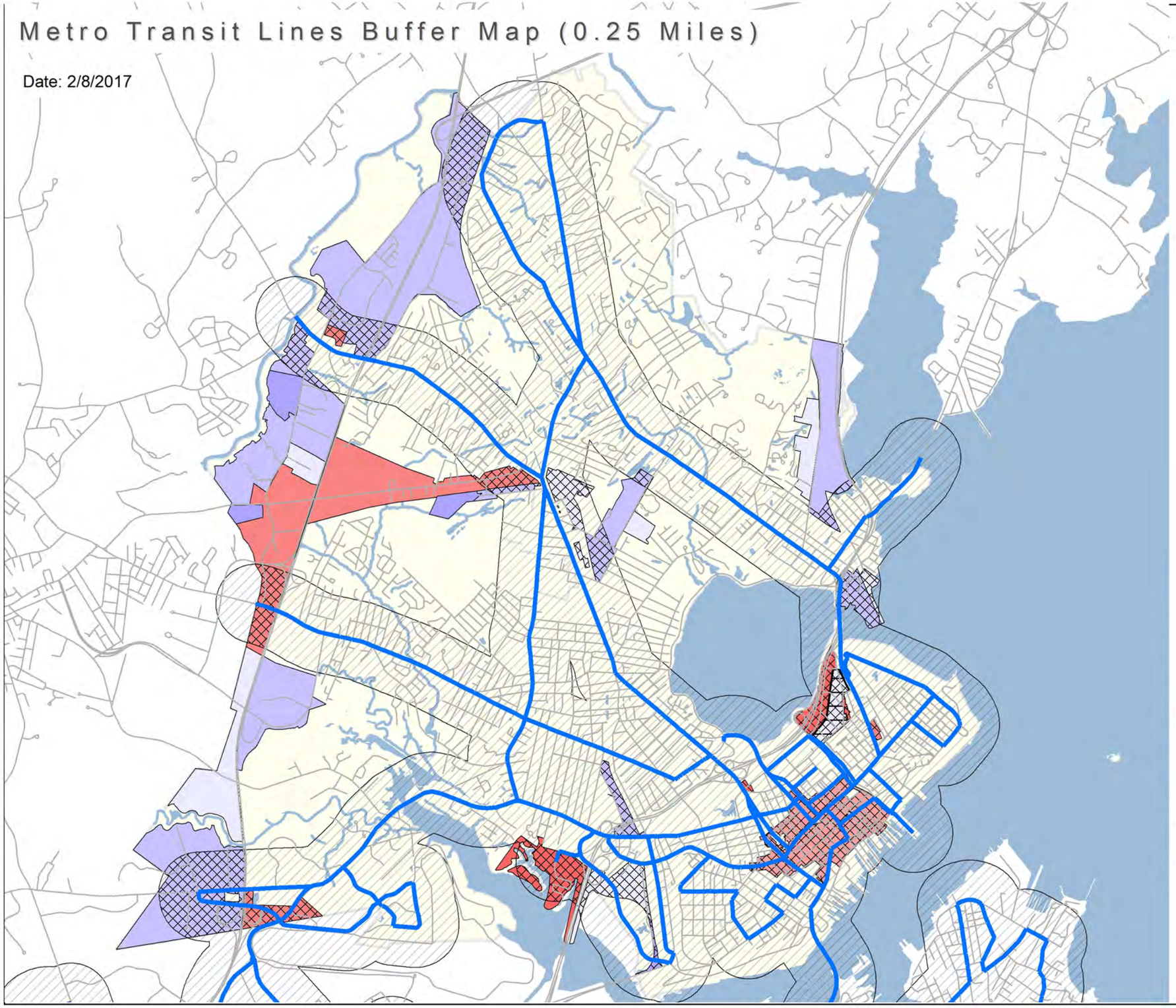
1. Map of Proposed Zones to Permit Shelters
2. Transit Line Buffer Map- Quarter Mile Buffer
3. Transit Line Buffer Map- Half Mile Buffer
4. Proposed Text Amendments for the Land Use Code

Applicant's Submission
Att A Shelter Best Practices
Att B Homeless Shelters Comparison Report
Att C Resolution – Collective Impact on Homelessness Shelters
Att D Safety and Security Benchmarking Study
Att E Shelter Diagram 1117


Shelter Zoning Discussion Map: Shelters Currently Only Permitted in the Red (B-3) Zone
DRAFT
AUBURN ST
ALLEN AV
STEVENS AV
Evergreen Cemetery
OCEAN AV
BAXTER BLVD
WASHINGTON AV
VERANDA ST
WOODFORD ST
BRIGHTON AV
FOREST AV
DEERING AV
FALMOUTH ST
PREBLE ST EXT
MARGINAL WY
BEDFORD ST
WESTBROOK ST
FROST ST
CONGRESS ST
ST JOHN ST
PARK AV
VALLEY ST
STATE ST
DANFORTH ST
W COMMERCIAL ST
COMMERCIAL ST
Zones under Discussion for Shelters as Conditional Uses
IH Industrial - High Impact
Industrial - Low Impact
IM Industrial - Moderate Impact
B3* Shelters are currently permitted in this zone
B4 Commercial Business
B5 Urban Commercial Business
0 0.25 0.5 1 1.5 2
Miles

Metro Transit Lines Buffer Map (0.25 Miles)

Date: 2/8/2017



N
W E
S

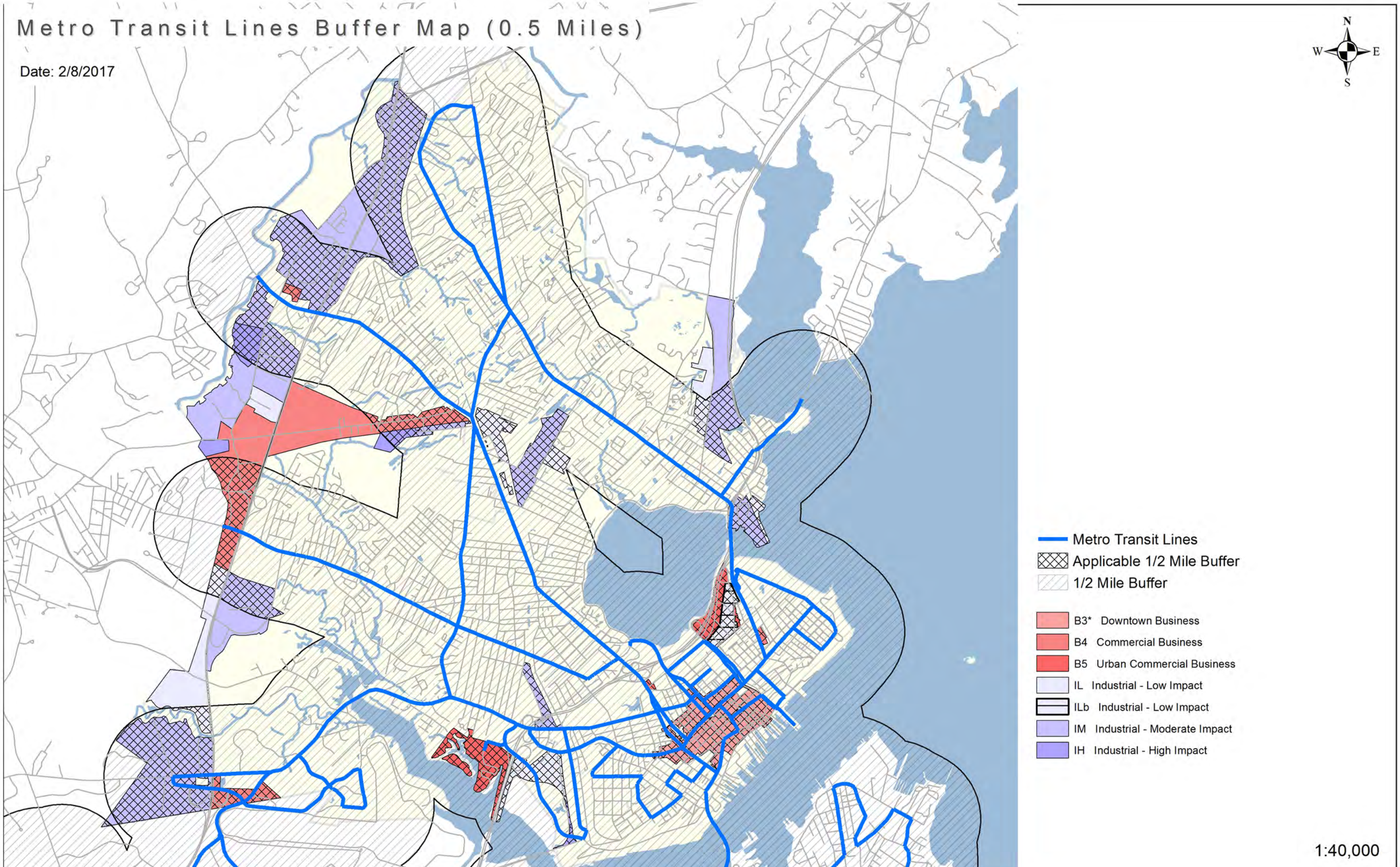
Metro Transit Lines
1/4 Mile Applicable Buffer
1/4 Mile Buffer

B3* Downtown Business
B4 Commercial Business
B5 Urban Commercial Business
IL Industrial - Low Impact
ILb Industrial - Low Impact
IM Industrial - Moderate Impact
IH Industrial - High Impact

1:40,000

Metro Transit Lines Buffer Map (0.5 Miles)

Date: 2/8/2017



PROPOSED TEXT AMENDMENTS FOR EMERGENCY SHELTERS

DIVISION 12. B-3, B-3b AND B-3c DOWNTOWN BUSINESS ZONES*

Sec. 14-218. Conditional uses.

(b) The following uses are permitted as provided in section 14-474 (conditional uses), provided that, notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority:

4. Emergency shelters, subject to the following conditions, in addition to the provisions of section 14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

~~a. The facility shall be in compliance with the city's current Comprehensive Housing Assistance Plan, a copy of which is on file in the department of planning and urban development, or, if there is no current edition of the Comprehensive Housing Assistance Plan, with a determination of need by the director of the department of health and human services.~~

~~a. The facility shall be registered with the City of Portland Department of Health and Human Services.~~

a. The facility shall provide adequate space for conducting security searches and other assessments;

b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

i. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all

shelter guests day shelter, as well as implement strategies to help residents utilize transit;

ii. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs;

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

DIVISION 12.5. B-4 COMMERCIAL CORRIDOR ZONE

Sec. 14-229.11.1. Conditional uses.

The following use shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses), and any special provisions, standards or requirements specified below:

(b) Emergency shelters, subject to the following conditions, in addition to the provisions of section 14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

a. The facility shall provide adequate space for conducting security searches and other assessments;

b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

i. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit;

ii. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs;

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

DIVISION 12.6. B-5 URBAN COMMERCIAL MIXED USE ZONE

Sec. 14-230.2. Conditional uses.

(a) The following uses shall be permitted as conditional uses in the B-5 and B-5b urban commercial mixed use zones, provided that, notwithstanding section 14-471(c), section 14-474(a), or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority, and further provided that, in addition to the provisions of section 14-474(c)(2), they shall also meet the requirements set forth below:

5. Emergency shelters, excluding B-5b, subject to the following conditions, in addition to the provisions of section 14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

a. The facility shall provide adequate space for conducting security searches and other assessments;

b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

i. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all

shelter guests day shelter, as well as implement strategies to help residents utilize transit;

ii. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs;

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

DIVISION 13. I-L AND I-Lb INDUSTRIAL ZONES*

Sec. 14-232.1. Conditional uses.

The following use shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses), and any special provisions, standards or requirements specified below:

(b) Emergency shelters, subject to the following conditions, in addition to the provisions of section 14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

a. The facility shall provide adequate space for conducting security searches and other assessments;

b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

i. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all

shelter guests day shelter, as well as implement strategies to help residents utilize transit;

ii. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs;

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

DIVISION 14. I-M, I-Ma AND I-Mb INDUSTRIAL ZONES*
Sec. 14-248.1. Conditional uses.

The following use shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses), and any special provisions, standards or requirements specified below:

(b) Emergency shelters, subject to the following conditions, in addition to the provisions of section 14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

a. The facility shall provide adequate space for conducting security searches and other assessments;

b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

i. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit;

ii. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs;

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

DIVISION 15. I-H AND I-Hb INDUSTRIAL ZONES*

Sec. 14-262.1. Conditional uses.

The following use shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses), and any special provisions, standards or requirements specified below:

(b) Emergency shelters, subject to the following conditions, in addition to the provisions of section 14-474. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

a. The facility shall provide adequate space for conducting security searches and other assessments;

b. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

c. A Management Plan adequately outlining the following areas shall be provided: Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

i. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit;

ii. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, or other programs;

d. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

~~a.~~e. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

SHELTER Best Practice – findings

Shelter/Multi-service Center

1. Year-Round Emergency Shelter and Multi-service center Cost Model Report (Orange County, CA) 2013- National review of options for cities in the county: recommends multiservice center/shelters in each.
2. Comparative Analysis of Homeless Facilities and programs in selected Cities and Counties (Virginia Beach, VA) 2011- Reviews practices and models in a number of cities including some as best practices: Recommends consolidation of shelter and services into one site: speds of access and connections and saves many calls to providers and city-
3. Examples – Columbus OH, Hennipin mN.
4. Recent smaller city models: Tallahassee –Kearny Center (others looking to duplicate)
   San Luis Obispo (mult-service and populations in one site with architectural awards)
   Santa Cruz CA.

Single Point of Entry/ Assessment Center/ coordination at entry

USICH-HUD

Denver Shelter Assessment by NAEH in 2011- (led by norm Suchar current HUD Homeless)
Recommends consolidation and single site for each population (Adults, families, youth) in this city to coordinate and refer.

Virginia Beach recommendation

Harm Reduction/low barrier

HUD/USICH- accessible

Current work in San Francisco and Seattle on new model – Navigation centers- Open sites to get off the street-can bring pets and partners- (more extreme based on need) -

24 hours for working individuals and those ill:

Many include a respite area or program that is not always medically staffed for individuals who are ill or need some attention. Other include accommodation/level for those working that need flexibility in hours.

Storage

Huge issue nationally and viewed as an impediment to housing and especially employment for many: examples of options at shelter or in community: Portland Oregon: large containers;

San Diego: 300 bins -Transitional Storage Center

L.A two Storage Centers

Outside Space

Campus Models: Dallas, San Antonio, others

Navigation Centers and others: interior courtyard

Louisville Shelter has on site recovery program: (but higher barrier)

Comparative Analysis of Homeless Facilities and Programs in Selected U.S. Cities and Counties

Prepared by:
City of Virginia Beach
Department of Housing and Neighborhood Preservation

Andrew Friedman – Director, Housing and Neighborhood Preservation
Sharon Prescott – Housing Development Administrator
Natalie Anderson – Principal Author

September 19, 2011

Disclaimer:
This report contains descriptions of a variety of strategies and approaches to addressing the issue of homelessness. These strategies are presented for the purpose of sharing information. The City of Virginia Beach and the Department of Housing and Neighborhood Preservation neither endorse nor oppose any of the homeless assistance models described in the report.

Conclusions

In terms of number of facilities, the level of assistance offered to the homeless population is similar among East Coast resort cities, including Virginia Beach. The majority of profiled oceanfront cities offer essentially one shelter for each type of demographic group: one shelter for single adults, one shelter for families (or women with children), and one shelter for youth. An exception is Ocean City, MD where there is only one shelter serving the tri-county homeless population. However, the Ocean City shelter serves each of these homeless demographic groups within the same shelter. In terms of the number of homeless individuals who can find overnight accommodation within the shelter system, the capacity of each city varies.

On the high end, Broward County Partnership in Florida and Union Mission in Norfolk each can accommodate 200 or more persons per night. On the lower end of the spectrum, Diakonia shelter in Ocean City, MD can accommodate between 35 – 45 persons per night. In Virginia Beach, JCOC provides 50 beds for overnight emergency shelter that are available year-round. From October through April, a minimum of 62 additional beds are available through a consortium of faith-based community facilities within Virginia Beach.

Services that were common to the majority of shelters profiled in this report are basic necessities: bathrooms, showers, laundry, meals, limited to full-time case management, limited-term medical care through an outside agency, and substance abuse counseling. A common constraint among most of the shelters was the reality of operating with small budgets and limited staff. As such, most shelters offer ancillary services on an ad hoc basis, services which expand or contract in relation to current staff and funding resources. The most common ancillary services were employment assistance, life-skills training and transportation assistance (bus passes and bicycles).

Sources

City of Minneapolis Commission to End Homelessness, (December, 2006). Heading Home Hennepin: The 10-year Plan to End Homelessness in Minneapolis and Hennepin County.

Department of Housing and Urban Development, Office of Policy Development and Research (May, 2002). Evaluation of Continuums of Care For Homeless People: Final Report.

National Alliance to End Homelessness, Solutions Brief (September 28, 2010). Beyond Planning: Minneapolis and Hennepin County.

U.S. Department of Housing and Urban Development Homeless Reports. Accessed July, 2011 from: www.hudhre.info/index.cfm?do=viewHomelessRpts

Norfolk Homeless Consortium website. Accessed August, 2011 from: www.norfolkhomelessconsortium.org

Individual shelter websites (listed in shelter profiles)

Maps

City of Daytona Beach zoning map. Accessed July, 2011 from: http://gis.codb.us/Freeance/Client/PublicAccess1/index.html?appconfig=CityMap

City of Fort Lauderdale zoning map. Accessed July, 2011 from: http://ci.ftlaud.fl.us/gis/files/maps/Zoning%20Map.pdf

City of Key West zoning map. Accessed July, 2011 from: www.keywestcity.com/egov/docs/1161957236_949066.pdf

City of Myrtle Beach zoning map. Accessed July, 2011 from: www.cityofmyrtlebeach.com/PDF%20Forms/Zoning%20Map.pdf

City of Norfolk zoning map. Accessed August, 2011 from: http://gisapp2.norfolk.gov/zoning_mapper/viewer.htm

City of San Diego zoning map (grid 15). Accessed July, 2011 from: www.sandiego.gov/development-services/zoning/pdf/maps/grid15.pdf

City of Virginia Beach zoning map (grids L06 and L07). Accessed August, 2011 from:
www.vbgov.com/file_source/dept/planning/ZoningGridReferenceMap.pdf

Worcester County, MD land use map. Accessed July, 2011 from:
www.co.worcester.md.us/cp/images/Adopted_LUP_11x17_3-14-06.jpg

Att. B

Comparative Analysis of Homeless Facilities and Programs in Selected U.S. Cities and Counties

Prepared by:
City of Virginia Beach
Department of Housing and Neighborhood Preservation

Andrew Friedman – Director, Housing and Neighborhood Preservation
Sharon Prescott – Housing Development Administrator
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September 19, 2011

Disclaimer:
This report contains descriptions of a variety of strategies and approaches to addressing the issue of homelessness. These strategies are presented for the purpose of sharing information. The City of Virginia Beach and the Department of Housing and Neighborhood Preservation neither endorse nor oppose any of the homeless assistance models described in the report.

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Introduction – the Cost of Homelessness

Homelessness is an issue that all cities face. Even when one doesn't see a conspicuous contingent of people sleeping on park benches or wandering the downtown streets, there is often an invisible homeless population moving from shelter to shelter or couch to couch, trying to steer themselves back into a permanent housing situation.

For a large portion of the homeless population, being homeless is not a lifestyle choice. It is a situation into which any of us could fall. The disparity between wages and housing costs requires that many families spend the majority of their household income on rent, leaving little to no disposable income for emergency savings. The sudden loss of a job or a medical emergency can push a family over the brink into homelessness.

Homelessness is not something that goes away by ignoring it. To the contrary, taking a do-nothing stance can be a costly alternative. Police enforcement and arrests, court hearings, overnight stays in detention or detox centers, ambulance rides and emergency medical care for the homeless often cost local governments and other organizations millions of dollars annually.

In 2007, Hennepin County, MN examined homeless shelter rolls, emergency facility logs, and court and jail registers to identify cross-over clients. The analysis revealed that there was a group of 266 people who, over a five year period, cost the city $4.2 million through repeated use of services.[1] The city of Reno, NV provided over $1 million in services to a man called Murray, during the decade he spent in a state of homelessness.[2] Comprehensive homeless prevention and rehabilitation programs can provide the best value to the city as a whole, over the long-run.

[1] Ten Broeke, Cathy (August 1, 2011). Fighting homelessness: The cost of homelessness, The Downtown Journal.
[2] Gladwell, Malcolm (February 13, 2006). Million-Dollar Murray, The New Yorker.

Executive Summary

This report profiles homeless shelters in a selection of coastal cities, including Virginia Beach. The shelter profiles include information gathered from discussions with shelter directors and from online resources. Each profile includes a brief snapshot of each city – demographic information, the characteristics of the homeless population, and the approach being taken at the city-wide level to address homelessness.

The report also includes profiles of two Midwest counties and the approach that these counties are taking to address homelessness. Franklin County (including Columbus, OH) and Hennepin County (including Minneapolis, MN) were chosen to be featured in the report based on recognition that both counties have received, at a national level, for the innovative models they have developed.

Scope: This report focuses primarily on emergency shelter and "day service" facilities in coastal United States cities. The report does not attempt to catalogue the full spectrum of services, nor those temporary or permanent supportive housing facilities, available to the homeless population within any of the cities that were selected for inclusion in the report. Specifically in the case of Virginia Beach, the report describes a limited subset of the services and shelter opportunities that are currently available to the single-adult homeless population.

Purpose: The purpose of this report is to provide city and community leaders in Virginia Beach with examples of the practices that selected cities and counties across the country are currently using to address the issue of homelessness. The information contained in this report is intended to support the decision-making process related to relocation of the Lighthouse homeless services day center in Virginia Beach.

Audience: This report is intended primarily for review by members of the Lighthouse Site Options Committee, and by participants in the public meeting series: Community Dialogue on Homelessness in Virginia Beach. City staff will be presenting portions of this report to these two groups as the basis for discussion. In addition, the report will be made available in its entirety to any interested person or organization via the Virginia Beach Department of Housing and Neighborhood Preservation website.

Summary of Findings

1) There is a trend toward consolidating a full spectrum of services (meals, case management, counseling, healthcare, training, etc.) and overnight shelter for the homeless into one location. This improves opportunities for the homeless to make connections to critical services and to make more effective use of their time to improve their situation. In addition, consolidating

services geographically reduces the call volumes that participating agencies must field from persons seeking assistance.

2) Homeless-serving facilities located in coastal cities can successfully be located away from the beach/resort area; but this may require transportation services as well as an overnight shelter component to insure that the facility is utilized. Of the East Coast resort cities profiled in this report, the average distance from a shelter to the nearest point on the oceanfront is **1.43 miles.**[3]

3) Operational standards and requirements placed on those receiving services can be key components of a successful shelter facility or homeless assistance system. Both shelter-level and "system-wide" standards are important in governing accountability among city administration, providers, and homeless clients.

4) Homeless-serving facilities are located in a wide variety of land-use settings. The acceptance of the facility by neighboring residents and businesses is related to both who came first and to the operational policies and standards that are employed at the facility.

5) The number of homeless people as a percentage of the total population is very low in the City of Virginia Beach, as compared to all other Continuum-of-Care areas featured in this report. We have used HUD-required Point in Time count data so as to make a valid comparison. See **Table 1** below.

6) It was beyond the scope of this report to include specific figures for shelter operating costs and funding streams, as these figures can be prohibitively time consuming to uncover. However, the research revealed that the current budget for Lighthouse Center operations is far lower than either the originally proposed new Lighthouse Center or many of the other more comprehensive programs in other cities.

[3] Average among all profiled shelters in selected East Coast resort cities (Daytona Beach, Fort Lauderdale, Myrtle Beach, Virginia Beach, Ocean City). Key West shelters were excluded in the average since Key West is an island city and all points within the city have relative proximity to the oceanfront.

Table 1

Continuum of Care	Homeless Persons Per 1,000 Population
FL-604 – Monroe County (includes **Key West, FL**)	14.05
FL-504 **Daytona Beach**/Flagler Counties	3.72
CA-601 **San Diego, CA**	3.49
SC-503 **Myrtle Beach**/Sumter City & County	3.04
VA-501 **Norfolk, VA**	2.36
FL-601 **Ft Lauderdale**/Broward County	1.83
MD-513 Wicomico/Somerset/Worcester (includes **Ocean City, MD**)	1.43
VA-503 **Virginia Beach, VA**	1.19

*The smallest geographic area for which HUD provides homeless population data (via the annual January Point-in-Time count) is the Continuum of Care administrative boundary. In the case of Norfolk, San Diego and Virginia Beach, the Continuum of Care boundary aligns with the city boundary. In all other cases listed in the table above, the Continuum of Care geography covers one or more counties. The proportion of homeless individuals to the general population has been arrived at using the population within the entire Continuum of Care boundary as the denominator.

Summary of Best Practices

Below is a compilation of best practices related to homeless shelter operations as well as area-wide approaches to planning for homeless services. The list is based on strategies that have been implemented by the various shelters profiled in the report, as well as ancillary research that was conducted for the report.

1) Implementation of a centralized, city-wide or cooperative region-wide homeless intake and assessment process in an accessible location that is served by public transit. The intake process serves both individuals and families.

2) Development of a sophisticated, region-wide homeless services organizing agency that fulfills the following functions:
    - Builds relationships and coordinates communications among existing and potential main-stream service providers, non-profits, faith-based communities, private business partners, homeless clients and the public.
    - Is a repository for information regarding system-wide homeless services.
    - Maintains an easily navigable public website where comprehensive descriptions of existing services, data on local homeless demographics, service evaluation reports, and evolving best practices are available for the public at large.
    - Conducts periodic assessments to identify gaps or duplications in system-wide service provision and evaluates program effectiveness.
    - Facilitates ongoing community participation and input into the long-range planning process for programs related to homelessness.

3) Collecting long-term program outcomes as part of a standard data management process. In this way future resources can be dedicated to programs and service methods that have proven to be effective. Providing robust data on outcomes also improves competitiveness in applications for private-sector grants.

4) Provision of a shelter dedicated to full-time, comprehensive substance abuse rehabilitation (available to those who are currently homeless and may have little to no income).

5) Intensive programming support for individuals transitioning from the mental health, corrections, and foster care systems, as well as the military, into main-stream society and conventional housing.

6) For those exiting the corrections system, immediate training opportunities to build job skills and develop healthy relationships.

7) A shelter model where clients are not allowed to walk up to the shelter. Outreach teams pick up homeless clients and drop them off at the shelter during designated hours. This eliminates loitering around the facility.

8) Expand and increase support for affordable housing opportunities (rent/mortgage payments no higher than 30% of household income).

9) Ongoing advocacy at the state and national level in order to support opportunities at the local level.

10) Flexible public funding streams with renewed funding based on performance / outcomes rather than service methods.

It was beyond the scope of this report to complete an exhaustive investigation into the most current policy literature, related to best practices for homeless assistance system models. The Hennepin County, Minnesota 10-year plan to end homelessness includes a well-researched compendium of "proven strategies" to reduce the incidence of homelessness. The best practices from an appendix to the Hennepin County 10-year plan to end homelessness are summarized below.

- **One-time cash assistance** for rent or utilities, to keep a household from falling into homelessness in the first place.

- **"One-stop shop" prevention services.** Consolidating a comprehensive set of services into one location/facility so that clients do not have to waste time or meager resources traveling from place to place, simply to fulfill their daily needs.

- **Adequate transition planning** for individuals re-entering society from the corrections system or mental health institutions, as well as for those exiting the foster care system.

- Ensuring **a viable spectrum of affordable housing options** are available to the public at large.

- Providing a **permanent supportive housing** option for those who experience multiple barriers to housing stability, such as those with permanent mental and/or physical disabilities.

- **Rapid-exit from shelter** and **rapid re-housing**. Well-trained case managers use a standardized assessment tool to accurately identify the barriers that keep a family from permanent housing. Case managers link the family with the appropriate set of social services that will help the family overcome their housing barriers.

- Taking a **Housing first** approach. This approach assumes that finding stable housing for a household should be the first priority in the series of social services that will set a family back on the path toward self-sufficiency.

- **"Every door is the right door" approach**, meaning that no matter which service facility a person approaches, s/he will experience the same intake process and can be referred to the same set of appropriate system-wide services.

- **Promoting family preservation and reunification**. The priority should be to keep families together. As a practice, children should not be placed in foster care solely based on the fact that their family is homeless.

- **Wrap-around case management teams** for individuals or families who experience multiple barriers to housing.

- **Develop a household's capacity to increase income and assets**, including education, financial literacy, and job training and placement services.

- Creating **innovative partnerships**, which entails both recruiting new partners and improving coordination and communication among existing partners.

- Identifying at-risk groups and **developing programs specific to the unique needs of those at-risk groups**.

- **Effective data management** allows localities to accurately diagnose system design or implementation problems and also to measure progress against the goals of the long-range plan for homeless prevention.

- **Advocacy and leadership**. A successful homeless prevention and rehabilitation system requires the consistent support of champions in city government, and in the local residential and business communities.

- Ongoing **community planning and response**. In order to make a positive impact on the incidence of homelessness in the city, community members must:
    - Be in open communication with service providers and the homeless,
    - Capitalize on existing community resources and spend time volunteering in order to increase service capacity, and
    - Be willing to engage in fund-raising efforts to fill programming gaps.

Background

The City of Virginia Beach continues to make progress toward the goals set forth in the 2008 Resort Area Strategic Action Plan (RASAP). One of the priorities listed in the RASAP plan is the development of a Convention Center Hotel. The Lighthouse homeless day center is currently situated on the proposed site of the Convention Center Hotel.

The day center helps the homeless endure and survive the challenges of homelessness as well as progress out of it. The key goals of the program are to support survival, to connect people to services, and to help people obtain and maintain employment. This is done by allowing them the opportunity to conduct activities that non-homeless people take for granted but which are critical – including showers, laundry, phones, completing paperwork, receiving mail, etc. As a key element of the City's Ten Year Plan to End Homelessness, it is necessary to relocate the Lighthouse Center so that it can continue to fulfill its functions.

In the first half of 2011, DHNP facilitated a public dialogue process to collect input about where the new Lighthouse day center should be located. During the course of the public dialogue process, it became apparent that there existed a need for 1) detailed data about the demographics of the homeless population in Virginia Beach, 2) additional site options aside from those previously proposed, and 3) information about models that other cities across the country are using to best address the issue of homelessness.

Purpose

The current study was developed in response to part three of this need for information. The city and shelter profiles in this report are intended to:

1) **Provide a baseline** which will allow readers to draw conclusions about where the City of Virginia Beach falls within the spectrum of existing approaches to alleviate homelessness,

2) **Share effective models and techniques** which can **inform future decisions** that city staff and leadership will make in planning for the needs of the homeless population and affected residents of Virginia Beach.

Methods

The scope of the report has been limited to an analysis of shelter facilities, as well as services offered within those shelters. The report does not attempt to catalogue the full spectrum of independent services available to the homeless population within any of the cities that were selected for inclusion in the report.

The initial approach to the research was to compare service models among homeless day service centers. Because shelters that offer exclusively day services are far more rare than shelters which offer overnight accommodations, the scope of the report was expanded to include emergency overnight shelters for the adult population, including families (adults with children).

It should be noted that the jurisdictions featured in this report do have additional shelter facilities, including those facilities dedicated exclusively to the youth population. The reader should also note that the featured cities in the report offer many additional temporary and permanent supportive housing opportunities, even though the report did not feature these facilities.

The city profiles in this report were developed using data from the Housing and Urban Development Point-in-Time homeless census counts as well as data from the Census Bureau. Complete data from the 2010 United States census was not available at the time this report was written. Alternately, data was collected from the most recent five-year American Communities Survey.

The shelter profiles in this report include anecdotal information, which was collected through telephone interviews with managers/directors from the profiled shelters and related non-profits. The profiles also draw upon information from shelter websites (in cases where a shelter website existed). For cities that can be classified as resort or oceanfront cities, the profile includes details about the most well-established shelter or shelters within the city.

In order to provide some examples of well-respected, national-level best practices, two Midwestern counties were selected for inclusion in the report. Both Franklin County (includes Columbus, OH) and Hennepin County (includes Minneapolis, MN) have developed a reputation for having implemented a highly effective region-wide model for addressing homelessness. County profiles include a summary of the region-wide homeless prevention and rehabilitation strategy, rather than including details about a specific shelter or shelters.

Virginia Beach
Virginia

Profile

Virginia Beach, VA

City Profile

Population	434,922
Median Household Income	$63,370
Per Capita Income*	$30,415
Median Gross Rent	$1,101
Median Gross Rent as % of HH Income	29.8%

Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): VA-503 Virginia Beach

	2010			
	Emergency	**Transitional**	**Unsheltered**	**Total**
Individual homeless persons	129	40	82	251
Persons in households with adults and children	102	164	0	266
Total homeless persons	231	204	82	517
Total General Population of Geography Included in CoC			434,922 (same as city population)	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		39	36	75
Severely mentally ill		24	18	42
Chronic substance abuse		44	23	67
Veterans		*	*	*
Persons with HIV / AIDS		3	0	3
Victims of domestic abuse		40	20	60
Unaccompanied youth (under 18 years)		10	0	10

*not documented in 2010 Point-in-Time (PIT) count

Source: HUD Homeless Resource Exchange Online Report

Virginia Beach, VA

Citywide centralized homeless intake: no

The City of Virginia Beach employs a number of methods to facilitate the initial connection between existing resources and those who are at-risk or homeless.

> Connection Point is a hotline that families may call when they are experiencing a housing crisis to determine if they qualify for emergency assistance. The hotline – (757) 227-5932 – is available Monday through Friday, from 7 a.m. to 11 p.m.
>
> Program for Assistance in Transition from Homelessness (PATH) provides street outreach services to individuals who are homeless and experience mental illness and/or substance abuse issues. Case manager(s) from the Department of Human Services, Mental Health/Substance Abuse Division attempt to engage this hard-to-serve population and connect them to housing and services.
>
> The City of Virginia Beach produces the Pocket Pal. This wallet-sized directory lists phone numbers for a variety of shelters, meal programs, social services, employment and other resources. The Pocket Pal is distributed through PATH Outreach, police personnel, and the faith community.

In addition to the shelters included in this profile that serve the single adult population, shelter for families is also available in the city. Samaritan House offers shelter and services for victims of domestic violence and their children. Samaritan House manages eleven, 2 to 3 bedroom townhomes at various locations in Virginia Beach, which serve as emergency housing. The Virginia Beach Community Development Corporation manages one townhome which can house one large or two smaller families in need of emergency shelter.

Virginia Beach, VA

Lighthouse Center

825 18th Street: Virginia Beach, Virginia 23451
www.voaches.org/Services/Homeless-Services/Lighthouse-Center

Profile

- Shelter type: day center
- Population served: anyone in need, primarily single adults
- Tenure at current location: more than 10 years
- Allow sex offenders in shelter: anyone is allowed to spend time in the facility. The center does not screen all clients for sex/violent offenses. If a client engages in disruptive behavior at the shelter, staff may run a background check and potentially ban the client from the premises.
- Utilize HUD mandated HMIS database system: yes

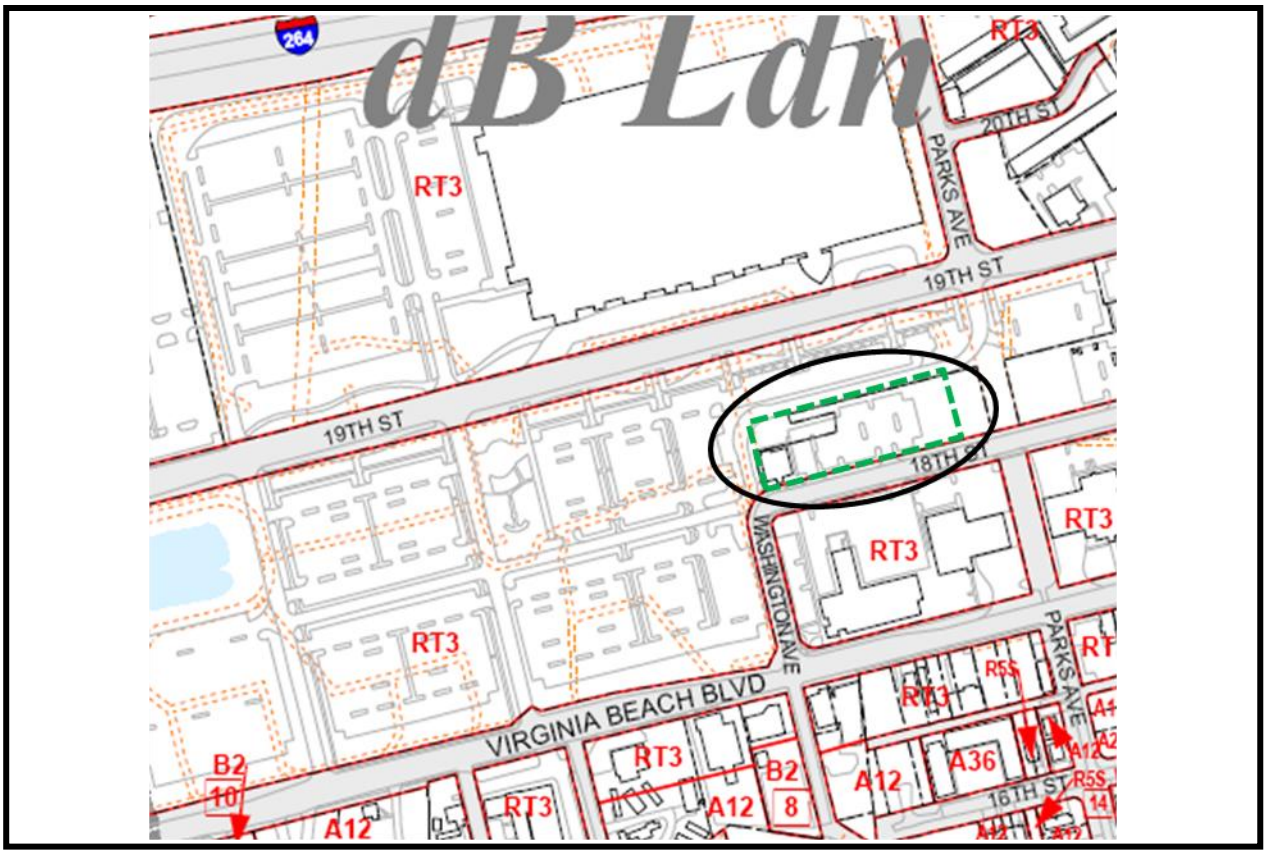
Available Services

- Bathroom/shower
- Laundry
- Mail/messages
- Case management for a sub-set of clients
- Coordination of winter shelter program
- Referrals to a variety of social services and assistance programs
- Art therapy program

Virginia Beach, VA

Zoning

The site and surrounding land uses are zoned RT3.



Source: Adapted from City of Virginia Beach Zoning Map

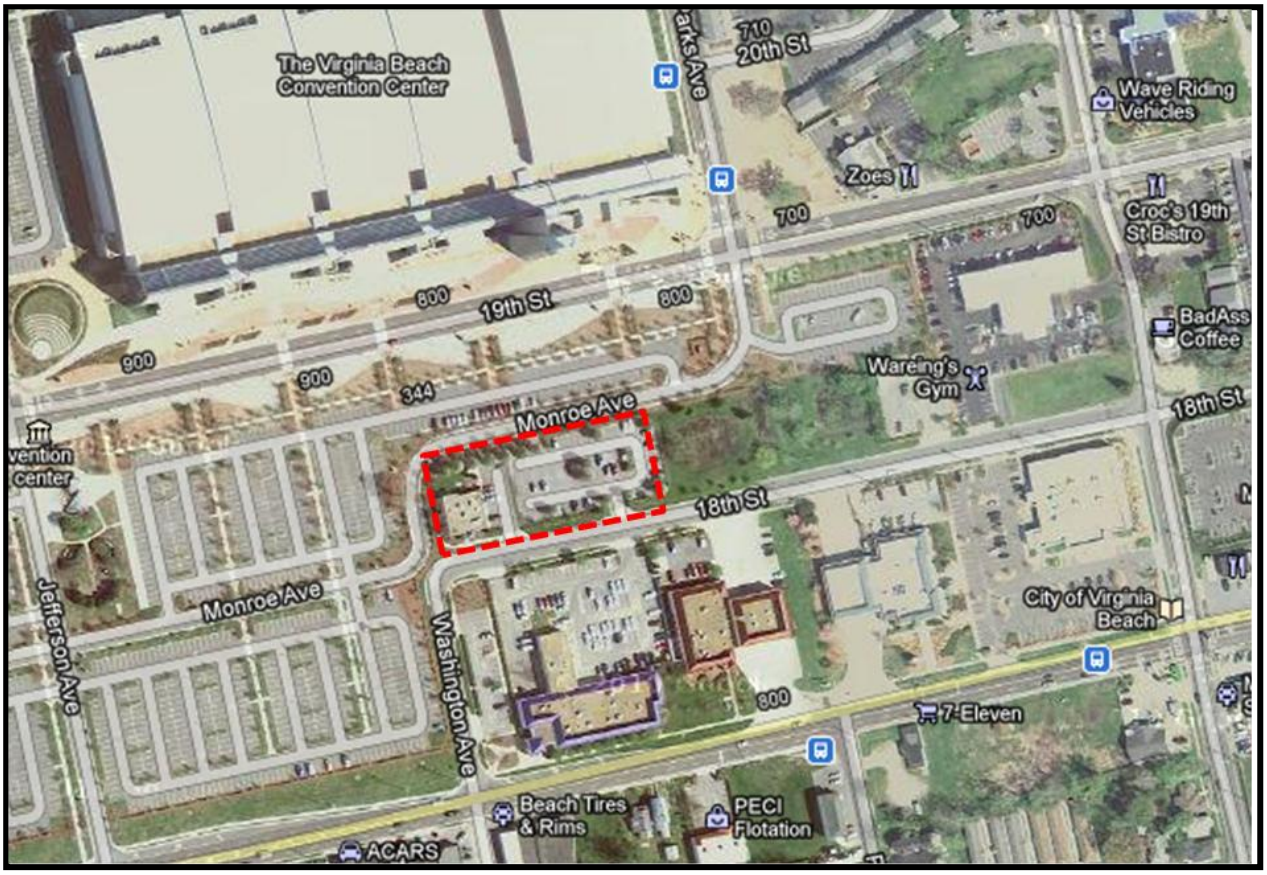
Zoning Legend

A12	Apartment District - Multi Family
A18	Apartment District - Multi Family
A24	Apartment District - Multi Family (24 units/acre)
A36	Apartment District - Multi Family (36 units/acre)
B2	Community Business District
RT3	Resort Tourist District - Mixed Use

Virginia Beach, VA

Surrounding Land Use Examples

- Virginia Beach Convention Center and parking lots
- Virginia Beach Police Department 2nd Precinct
- Virginia Beach Library - Oceanfront Branch
- Fitness Center



Source: Adapted from Google - Map Data 2011

Virginia Beach, VA

Judeo Christian Outreach Center (JCOC)

1053 Virginia Beach Boulevard, Virginia Beach, VA 23451
www.jcoc.org

Profile

- Shelter type: emergency overnight
- Population served: single adults (men and women)
- Total overnight capacity: 50
- Tenure at current location: 25 years
- Maximum stay: 6 months
- Allow sex offenders to reside in shelter: no
- Utilize HUD mandated HMIS database system: yes

Available Services

- Bathroom/shower
- Sleeping facilities
- Laundry
- Mail/messages
- Case management
- Computer lab
- AA meetings
- Meals (for residents and non-residents)
- Food pantry for non-residents
- Work readiness classes
- Day labor opportunities
- Referrals for social services and full-time substance abuse treatment programs
- Referrals to educational resources

Virginia Beach, VA

Summary

Although JCOC is an emergency shelter, it is typically filled to capacity. Homeless individuals must sign up for a waiting list and make a phone call to JCOC daily before they are allowed to stay at the shelter. Shelter staff run a criminal background check on applicants before accepting them as residents.

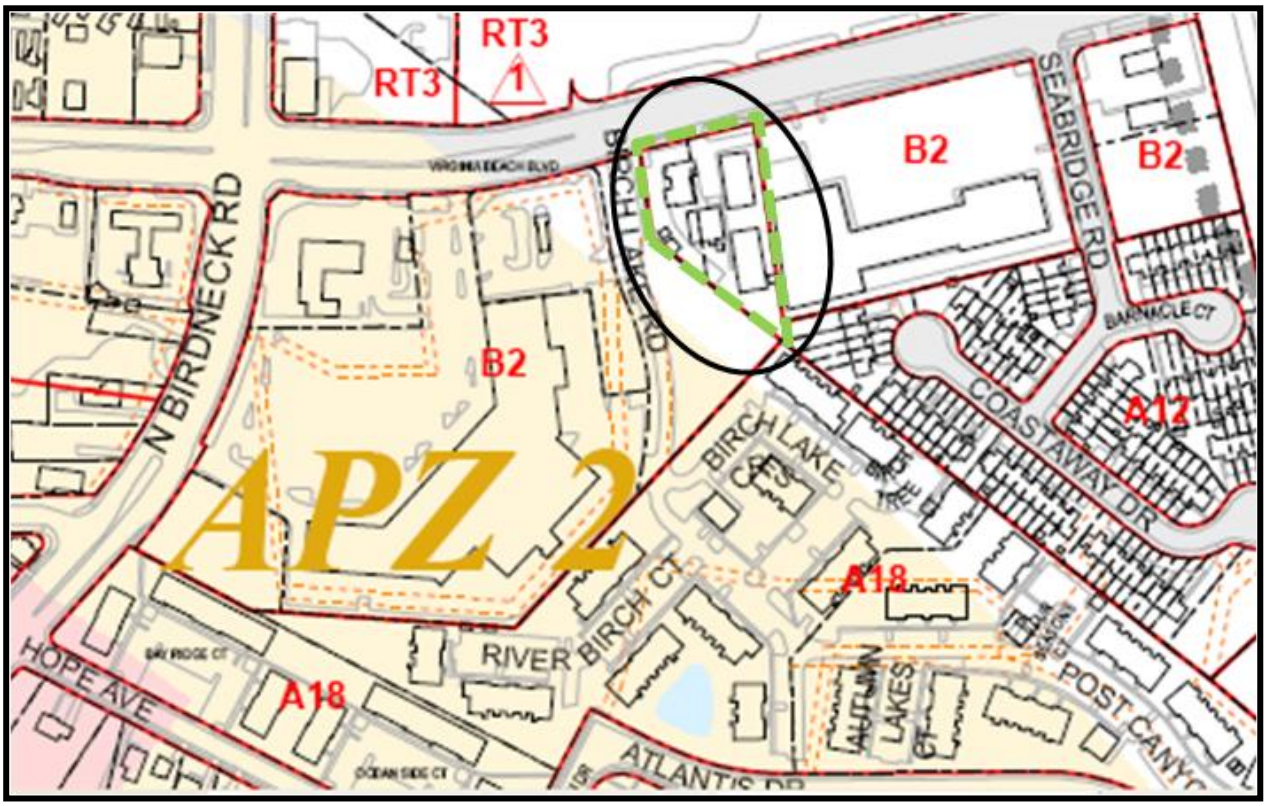
Once an individual becomes a resident, s/he is assigned a case manager. With the assistance of the case manager, the resident completes an initial assessment to identify job skills and interests. The case manager helps the resident develop an independent living plan, and refers the resident to appropriate social services that will support him/her in achieving the goals set forth in the independent living plan.

Each resident must assist with the operations of the JCOC facility and is assigned daily chores. Once a resident is stabilized and in a substance abuse program, he or she must fulfill certain obligations. Residents are required to obtain either full or part-time employment, maintain a personal savings account, and begin repaying debts, fines, or other obligations he or she may have. The center imposes a curfew for those who are not at work.

Virginia Beach, VA

Zoning

Site: A12
To the north: RT3
To the east: B2 and A12
To the south: A18
To the west: B2



Source: Adapted from City of Virginia Beach Zoning Map

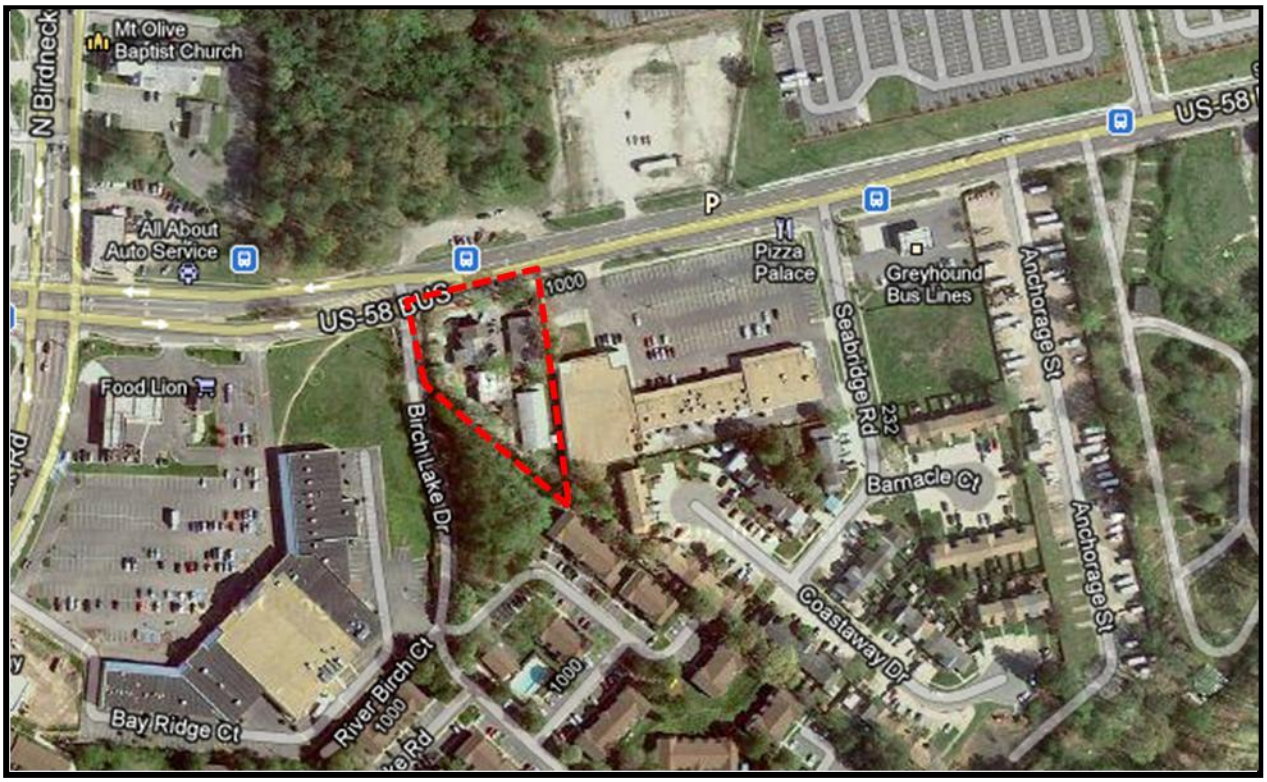
Zoning Legend

A12	Apartment District - Multi Family
A18	Apartment District - Multi Family
B2	Community Business District
RT3	Resort Tourist District - Mixed Use

Virginia Beach, VA

Surrounding Land Use Examples

- Open space, vacant lot
- Strip commercial – grocery store, Dollar General
- Gas station
- Multi-family residential

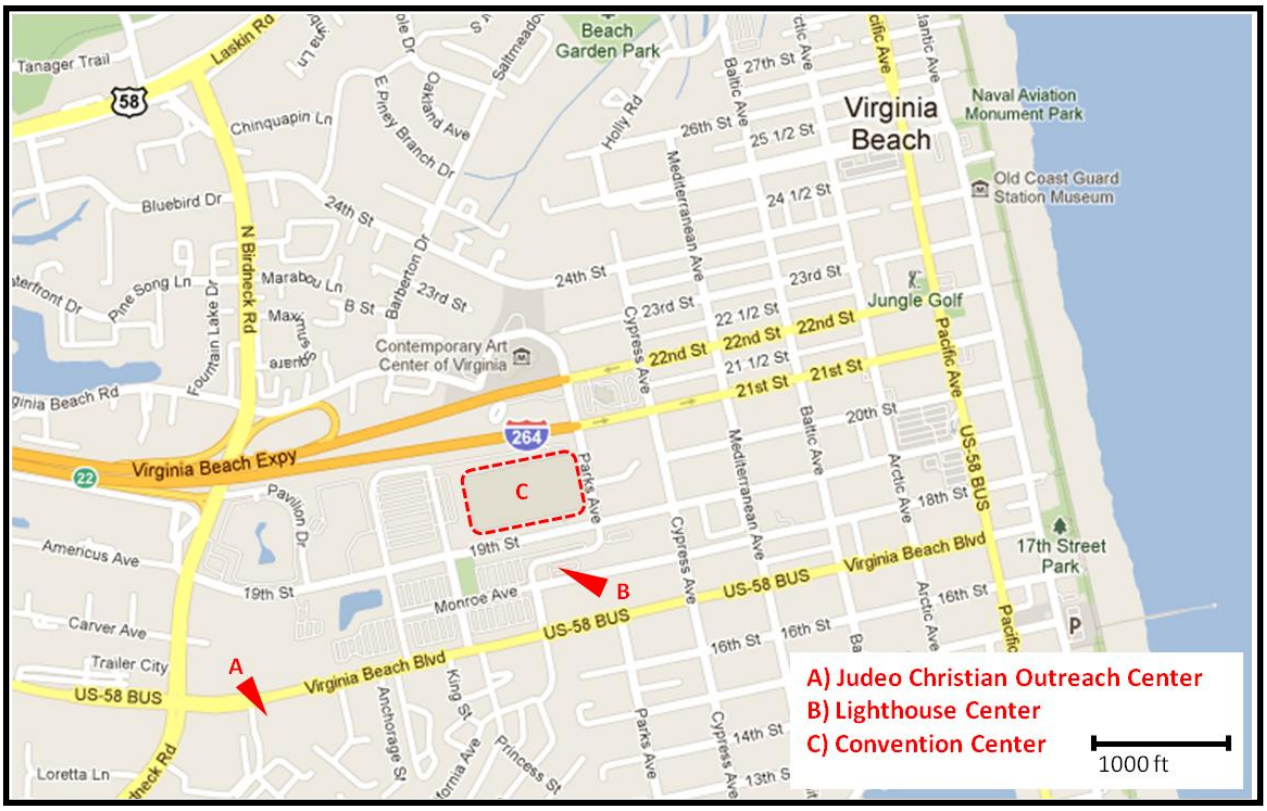


Source: Adapted from Google - Map Data 2011

Virginia Beach, VA

Location

The Lighthouse Day Center is a 0.7 mile walk from the oceanfront and is adjacent to the Convention Center. The Judeo Christian Outreach Center is a 1.2 mile walk from the oceanfront and is a 0.4 mile walk from the Convention Center.



Source: Adapted from Google - Map Data 2011

Norfolk Virginia

Profile

Norfolk, VA

City Profile

Population	236,071
Median Household Income	$41,739
Per Capita Income*	$23,294
Median Gross Rent	$811
Median Gross Rent as % of HH Income	31.2%

Continuum of Care (CoC): VA-501 Norfolk

	2010			
	Emergency Shelter	**Transitional Shelter**	**Unsheltered**	**Total**
Individual homeless persons	285	59	56	400
Persons in households with adults and children	96	60	0	156
Total homeless persons	381	119	56	556
Total General Population of Geography Included in CoC			236,071 (same as city population)	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		70	19	89
Severely mentally ill		54	0	54
Chronic substance abuse		111	0	111
Veterans		*	*	*
Persons with HIV / AIDS		26	0	26
Victims of domestic abuse		39	0	39
Unaccompanied youth (under 18 years)		0	0	0

*not documented in 2010 Point-in-Time (PIT) count

Source: HUD Homeless Resource Exchange Online Report

Norfolk, VA

Citywide centralized homeless intake: yes for families

The City of Norfolk offers a help line to connect homeless families to a variety of assistance services. The hotline, (757) 664-6083, is available 24 hours per day, seven days per week. Families at risk of homelessness may apply for the shelter waiting list at the Department of Human Services, Child and Family Services office at 741 Monticello Avenue.

There is no city-wide centralized intake for single adults. The intake process is completed on-site at each shelter. Single adults can find shelter at the Union Mission and the Salvation Army. Victims of domestic violence can find shelter opportunities through the YWCA of South Hampton Roads.

Since 2007, the Homeless Action and Response Team (HART) has acted as the central intake for families experiencing a housing crisis. The HART team (comprised of social workers and case workers) uses a formalized Structured Decision Making tool to assess the extent of the barriers preventing the family from accessing housing. Using the results of the assessment, the HART team is able to direct the family to the appropriate service/assistance track. Some families will only require short-term or one-time assistance. The HART team may place families with greater barriers into shelter. The HART team may direct Families with a very high level of housing barriers directly into permanent supportive housing. The key components of this system are an accurate assessment from well trained case workers and a personalized package of services, rather than a one-size-fits-all solution. In 2007, the HART team served 888 families. Of those families, only 26 requested shelter assistance a second time, within a 17 month period.

The City of Norfolk takes a housing-first approach, which assumes that the best way to reduce homelessness is to find housing for homeless individuals and provide the services that are necessary to keep those individuals in housing. In line with this approach, the Norfolk Homeless Consortium coordinated development of a program called My Own Place. There are no applications for the program. Instead, the Projects for Assistance in Transition from Homelessness (PATH) team recruits chronically homeless individuals who experience severe mental illness to participate in the program. These individuals are moved into subsidized apartments. Then the Assertive Community Treatment (ACT) team (including a psychiatrist, nurse, case manager and peer mentor) provide intensive services at the client's apartment.

Norfolk, VA

City-Wide Homeless Services Organization

Since 1993, the Norfolk Homeless Consortium has managed the VA-501 Norfolk continuum of care, which is eligible to receive various forms of federal funding including Community Development Block Grants and annual HUD allocations. Over twenty agencies participate as part of the Consortium – including shelters, service providers, healthcare organizations, city departments and other organizations. Consortium members attend regular meetings and are active on a number of taskforces and committees aimed at developing and maintaining a comprehensive continuum of care.

The Consortium goals for 2011 -2012 are to end homelessness by:

- Increasing system wide utilization of HMIS for programs, activities, events and organizations.
- Increasing community awareness and education on strategies to end homelessness.
- Increasing opportunities for homeless persons to exit homeless assistance programs by increasing their income.
- Aligning expectations for performance, standards and outcomes across all programs within the Continuum of Care.
- Increasing the focus on ex-offenders and veterans through targeted efforts in all the Consortium committees.

In 2004, the Norfolk City Council appointed a Commission to End Homelessness and assigned the Commission with the task of finding a way to end homelessness in the city. Through the work of five sub committees – support services, mental health/substance abuse, resources and awareness, prevention and elimination, and housing – and community input, the Commission generated a 10-Year Plan to End Homelessness.

Once the 10-year Plan was complete, the City of Norfolk established the Office to End Homelessness to oversee implementation of the Plan. The Office serves several key functions. One is to facilitate public involvement in both the planning and implementation of strategies to end homelessness. Secondly, the Office develops policies for the city, related to ending homelessness. A third function of the Office is to assess existing programs and identify gaps or areas for improvement. The Office also participates as an active member of the Norfolk Homeless Consortium.

Norfolk, VA

Union Mission

5100 E. Virginia Beach Blvd, Norfolk, VA 23502
www.unionmissionministries.org

Profile

- Shelter type: emergency and transitional
- Populations served: Single males, women, children, seniors
- Overnight capacity:
  - Men
    - Guest program: 102 beds
    - Single room occupancy (SRO): 30 beds
    - Discipleship & training program: 25 beds
  - Women: 33 beds (includes beds for mothers)
  - Children: 16 beds
- Years in current location: since 2009. At previous location for over 100 years.
- Shelter size:
  - Men's shelter: 29,000 sq. ft.
  - Women and family shelter: 10,000 sq. ft.
- Screen for sex/violent offences at intake: yes
- Allow sex offenders to reside in shelter: no
- Allow previous violent offenders to reside in shelter: yes, only in cases where an appropriate plan for placement has been completed prior to arrival.
- Utilize HUD mandated HMIS database system: no. Instead, utilize Human Services Evaluation and Reporting Tools (H.E.A.R.T.) and do cooperate with the Office to End Homelessness in sharing data.

Available Services

- Bathroom/shower
- Sleeping facilities
- Meals
- Laundry
- Mail/messages
- Computer lab
- Case management
- Substance abuse counseling
- Job skills training
- Assistance with ID and birth certificate applications
- Assistance securing permanent housing
- Donations of furniture and household goods for use in permanent housing
- Referrals to veterans services, Legal Aid and other community services

Norfolk, VA

Summary

The Union Mission became established in downtown Norfolk over a century ago. In 2009, the Mission purchased a property formerly owned by Virginia Natural Gas, near Military Circle shopping center and began transitioning operations out of the downtown. The Mission renovated two buildings on the new site to serve as shelter facilities. They also constructed two new buildings to house a thrift store and homeless day services center. Moving the shelter operations out of the downtown area did have the effect of reducing the overall downtown homeless population.

Union Mission also manages the Hope Haven – a 54 acre rural campus in Virginia Beach. At Hope Haven there is a children's shelter as well as a senior assisted living facility. The configuration of the campus facilitates a relationship of mutual care between the seniors and the children. The seniors are able to share their knowledge and life experience with the children, while benefitting from the children's energy and joy.

The children live in cottages (8 – 10 children per cottage) with a set of houseparents who give the children the same love and guidance that a parent would give. Some children stay at Hope Haven for a short time; most stay until they have completed high school. Since 1965, over 350 children have grown up at Hope Haven.

The assisted living facility is for seniors who have not saved for retirement or have no family to take them in. Union Mission coordinates grant funding so that many of the seniors are able to stay at the facility for a deeply reduced rate.

Community Relationships

Before occupying the property near Military Circle, Union Mission staff met with various neighborhood associations to address any concerns that residents might have about the project. After the new facility was in operation, Union Mission staff invited the neighborhood associations to attend various luncheons and tours of the facility. The Norfolk police force's PACE program, which reports to surrounding neighborhoods, is located on the Union Mission property. Police presence on the property has provided a sense of security for both Union Mission residents and the surrounding community.

Norfolk, VA

Union Mission Wellness Program

The shelter has set aside a limited number of rooms to house those who have just been released from the hospital or who may have contagious illnesses such as influenza. Union Mission staff have developed partnerships with a number of local healthcare related organizations. The shelter has become a destination for various community medical fairs. Access Partnership periodically brings two Navy dental care vans on-site[4]. The Lions Club brings equipment on-site to perform vision and hearing tests. The Lions Club also provides glasses and hearing aid prescriptions. The Bon Secours Caravan locates on-site one day per month to offer medical care to residents as well as to the general public. First Baptist Church of Norfolk periodically holds a medical fair on-site as well.

Union Mission staff will also refer residents to medical services when appropriate. Through a grant from the Sentara Health Foundation, the Union Mission Wellness Program is able to provide transportation for residents to and from doctors' offices and medical facilities.

Transportation Assistance

Union Mission has access to a passenger van that is used to transport primarily women's shelter clients, but also men's shelter clients who may need assistance. Staff provide a limited number of local bus passes as well as occasional bus fare for people who need to travel out of state to visit their families.

Future Plans

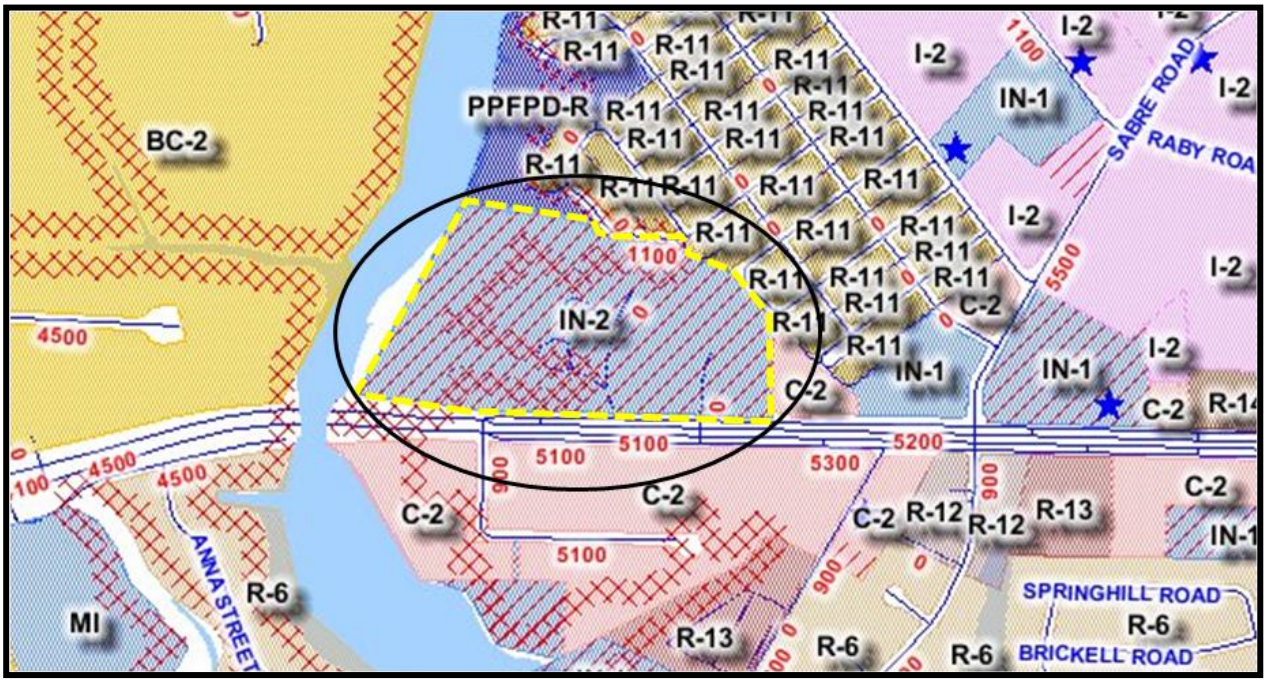
Once adequate funding can be secured, Union Mission plans to build an additional building on their main campus near Military Circle, to expand overnight shelter capacity.

[4] The dentists and dental technicians are not from the Navy

Norfolk, VA

Zoning

Site: IN-2
To the north: R-11
To the east: R-11 and C-2
To the south: C-2
To the west: Elizabeth River inlet and BC-2



Source: Adapted from City of Norfolk Zoning Map

Zoning Legend

BC-2	Business and Commerce Park
C-2	Corridor Commercial
I-2	Light Industrial
IN-1	Institutional (special purpose district)
IN-2	Institutional Campus (special purpose district)
PPFPD-R	(definition not available)
R-6	Low Density Single-Family (5.81 du/acre)
R-11	Moderate Density Multiple-Family (15.02 du/acre)
R-13	Moderately High Density Multiple-Family (24.2 du/acre)

Norfolk, VA

Surrounding Land Use Examples

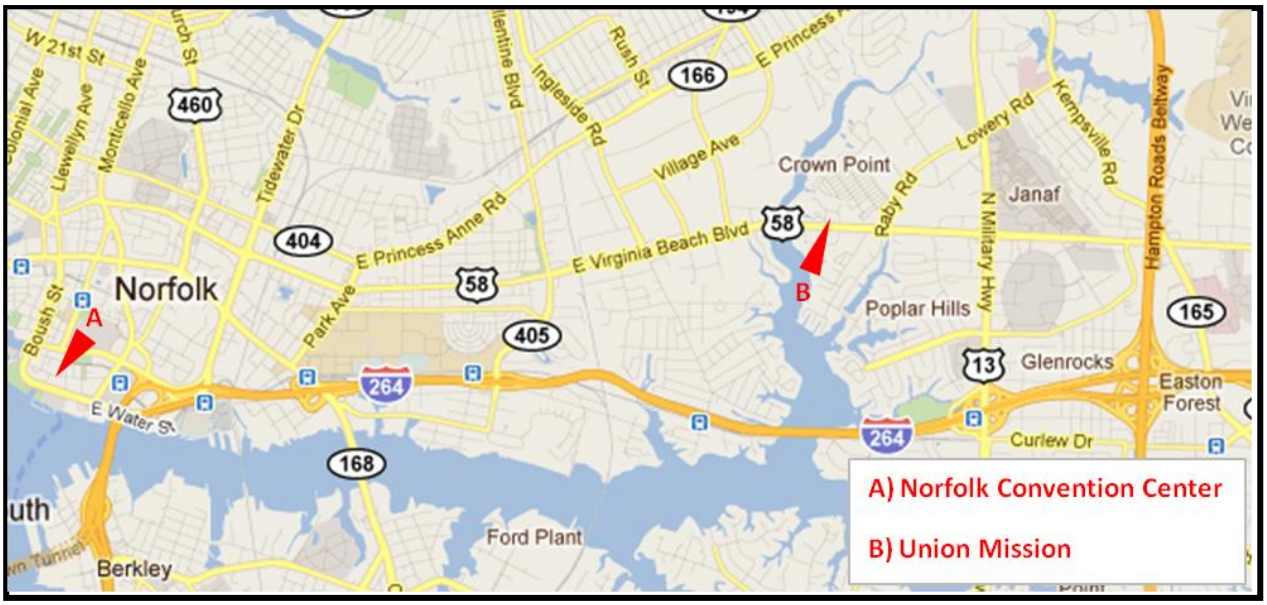
- Moderate density residential
- Commercial corridor
- Auto maintenance shop
- Virginia employment commission
- Appliance repair
- Commercial Printing
- Open space and river inlet

Source: Adapted from Google - Map Data 2011

Norfolk, VA

Location

Union Mission is located east of the Norfolk downtown. It is a 4.3 mile walk from the main Union Mission campus to the Norfolk Convention Center and Visitor's Bureau.



Source: Adapted from Google - Map Data 2011

Norfolk, VA

F.O.R.kids, Inc.

4200 Colley Avenue Suite A, Norfolk, VA 23508
www.homesforkids.org

Profile

- Housing type: emergency shelter, transitional shelter, and permanent supportive housing
- Populations served: families with children
- Overnight capacity:
  - Emergency: 20 families with up to 40 children
  - Transitional: 12 families with up to 24 children
  - Supportive housing: 10 families with up to 20 children
- Maximum length of stay: 120 days
- Years in current location: the oldest of ForKids' multiple shelter locations came into operation in 1991
- Screen for sex/violent offenses: yes
- Utilize HUD mandated HMIS database system: yes

Available Services

- Sleeping facilities
- Showers
- Laundry
- Kitchen
- Case management
- Life-skills training
- Transportation assistance
- Assistance searching for employment
- In-home housing stabilization case management for families at-risk of homelessness
- Referrals to appropriate mental and physical health care resources for adults and children
- Youth enrichment programs including homework assistance

Norfolk, VA

Summary

ForKids operates a collection of small-scale emergency, transitional and permanent supportive housing facilities throughout the City of Norfolk. These shelter facilities are summarized below.

Emergency Shelter

- Haven House (131 D View Ave.): capacity for 10 families.

At the emergency shelter, residents share kitchen, laundry and shower facilities. Each family does have a small fridge in their room.

Transitional Housing

- Morgan Place (7th Bay Street): two apartment buildings which house 7 families.
- Elizabeth Place (West 38th Street): 5 units of housing, as well as program space.

Permanent Supportive Housing

- Dillon Place (819 38th Street): capacity for 6 families. For families in which a family member experiences a chronic physical disability.
- An additional four units of permanent supportive housing have been located in the city.

Program Facilities

- ForKids Family Resource Center (4000 Colley Avenue): houses a library and classrooms.

Norfolk, VA

As the name implies, ForKids offers a rich assortment of programs for children of all ages, from pre-school to high school. Enrichment programs are available on-site at most shelter locations, as well as off-site in other areas of the city. Children have access to homework assistance/tutoring, art and music programs, sports activities, summer camps, and periodic field trips. ForKids provides referrals for parents to access daycare subsidies or other types of child care support. ForKids also offers referrals to comprehensive mental and physical healthcare services for children who need them.

ForKids provides clients with passenger van transportation to important appointments such as those for healthcare, job interviews or social services. Access to van transportation is granted at the discretion of the case manager. Case managers may at times also distribute a limited number of bus passes to clients.

ForKids offers an aftercare program. Everyone who has been housed in a ForKids housing facility has the option to continue case management for six months after transitioning out of ForKids shelter. Case managers provide assistance with household budgeting, crisis management, and other life-skills in order to support the family's transition into permanent housing. During the transitional period, children also have access to the same set of enrichment and tutoring programs.

ForKids continues to expand services and shelter capacity. The organization plans to implement a program to offer one-time grants for rent or utilities assistance to clients. There are also plans to develop 11 new units of permanent supportive housing in the near future. There will be nine units of housing in Norfolk and two units in Chesapeake.

Zoning and Surrounding Land Uses

Because ForKids shelters are located in multiple facilities around the City of Norfolk, zoning and surrounding land use information has not been included in the report.

Ocean City Maryland

Profile

Ocean City, MD

City Profile

Population	49,081
Median Household Income	$52,600
Per Capita Income	$31,626
Median Gross Rent	$816
Median Gross Rent as % of HH Income	29.7%

Above data is presented for Worcester County, MD, in which Ocean City, MD lies
Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): MD-513 Wicomico/Somerset/Worcester

(The tri-county CoC includes the unincorporated area of West Ocean City as well as Ocean City, MD)

	2010			
	Emergency	**Transitional**	**Unsheltered**	**Total**
Individual homeless persons	125	7	43	175
Persons in households with adults and children	27	28	0	65
Total homeless persons	162	35	43	240
Total General Population of Geography Included in CoC			167,857	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		32	18	50
Severely mentally ill		16	27	43
Chronic substance abuse		20	24	44
Veterans		*	*	*
Persons with HIV / AIDS		0	0	0
Victims of domestic abuse		19	2	21
Unaccompanied youth (under 18 years)		0	0	0

*not documented in 2010 Point-in-Time (PIT) count
Source: HUD Homeless Resource Exchange Online Report

Ocean City, MD

Citywide centralized homeless intake: no

The tri-county area (Wicomico/Somerset/Worcester) is primarily rural. According to the shelter director interviewed for this report, cases of homelessness in Ocean City are those that are characteristic for a rural area. There are fewer cases of chronic, urban homelessness than one might expect to find in a resort city. In the majority of cases, individuals became homeless as a result of low-income status or substance abuse.

Ocean City, MD

Diakonia Emergency Shelter and Food Pantry

12747 Old Bridge Road, West Ocean City, MD
http://diakoniaoc.org

Profile

- Shelter type: emergency overnight (EOS) and temporary housing.
- Population served: single adults as well as families with children
- Total overnight capacity (EOS + temporary housing): 35 - 45 persons
- Tenure at current location: since 1972
- Allow sex offenders in shelter: no
- Utilize HUD mandated HMIS database system: yes

Available Services

- Bathroom/shower
- Sleeping facilities
- Meals (57,000 annually)
- Laundry
- Mail/messages
- Case management
- Substance abuse counseling
- Counseling for those at-risk of becoming homeless
- Food pantry
- Thrift store

Ocean City, MD

Summary

Diakonia is the only homeless shelter serving the Ocean City community. The shelter's current location on the mainland is a desirable one for a number of reasons. The shelter serves the tri-county area and is more accessible on the mainland. Having a location on the island / within the resort district would not generate any greater advantages for the shelter. At the same time, overhead costs for space would be much higher in the resort district in the event that the shelter planned to expand.

Diakonia owns the property on which the two shelter buildings are located. The shelter came to occupy an existing structure in 1972. Even as recently as the early 2000's, the building was surrounded by open space and sparse development. Since then, the shelter has come to be surrounded by a very eclectic neighborhood that includes a family resort and multi-million dollar homes. The shelter works vigilantly to maintain the good relationship it has with neighborhood residents and the larger community. Even major businesses in the resort area were not aware, in the past, of the shelter or the services Diakonia provides. The shelter continues to conduct outreach to advertise itself and build relationships with these entities.

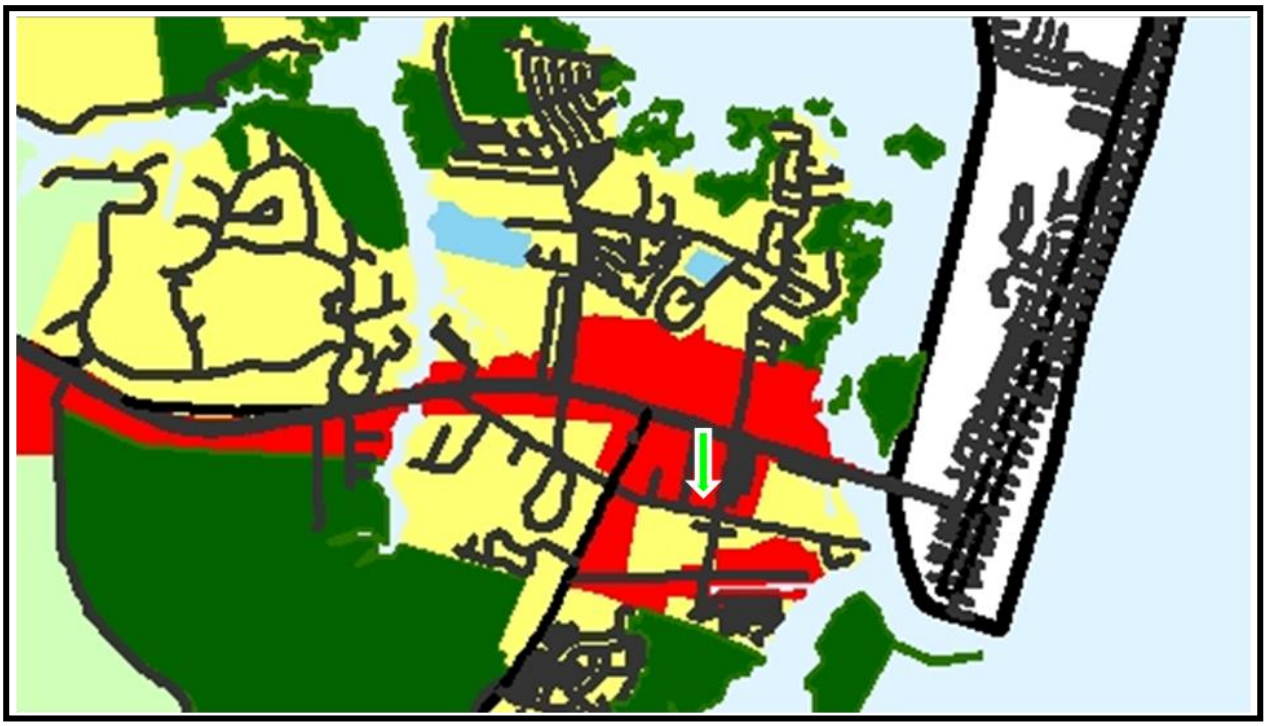
Although there is a tri-county continuum of care, the counties do not have a strong relationship. Often, homeless clients are unable to access public services because agencies are slow to respond. As such, Diakonia conducts its own client intake. Case managers assist clients in assessing needs and developing a service plan. If clients choose not to adhere to the plan and meet goals that have been agreed upon, the client must leave the shelter.

There is a bus stop 0.5 miles from the shelter. In addition, Diakonia owns and operates one passenger van. Shelter staff use the van to transport residents to appointments, at the discretion of the case manager.

Ocean City, MD

Zoning

Site: Commercial center
To the north, east, and west: commercial center
To the south: existing developed area



Source: Adapted from Worcester County Land Use Map

Zoning Legend

- agriculture
- commercial center
- existing developed areas
- green infrastructure
- industry
- institutional

Ocean City, MD

Surrounding Land Use Examples

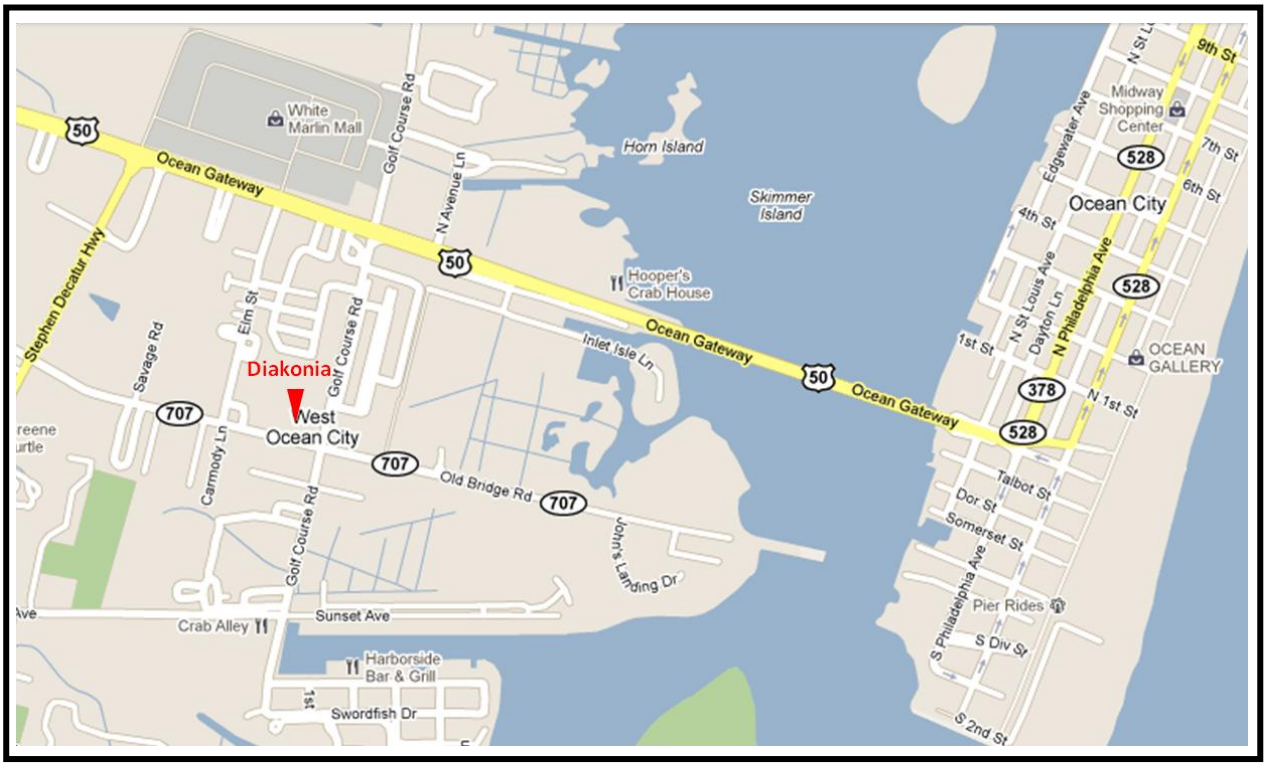
- Neighborhood surrounding the shelter is mixed use and very eclectic
- Single family residential, including multi-million dollar homes
- Art framing shop
- Open space
- Marina (to the east)
- West Ocean City Park-n-Ride
- Francis Scott Key Family Resort
  (picnic pavilion and indoor pool are adjacent to the north side of the shelter)
- Just north of the Francis Scott Key Family Resort is an outlet mall

Source: Adapted from Google - Map Data 2011

Ocean City, MD

Location

Lies on the mainland, 1.5 miles from the beach front. The shelter is segregated from the resort / beach barrier island by Isle of Wight Bay inlet. The shelter lies within the unincorporated territory of West Ocean City, MD in Worcester County. The shelter is located approximately 0.5 miles from a public transit stop (West Ocean City Park-n-Ride lot).



Source: Adapted from Google - Map Data 2011

Myrtle Beach
South Carolina

Profile

Myrtle Beach, SC

City Profile

Population	29,945
Median Household Income	$36,839
Per Capita Income	$28,916
Median Gross Rent	$747
Median Gross Rent as % of HH Income	30.8%

Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): SC-503 Myrtle Beach/Sumter City & County

	2010			
	Emergency Shelter	**Transitional Shelter**	**Unsheltered**	**Total**
Individual homeless persons	205	260	646	1,111
Persons in households with adults and children	157	130	127	414
Total homeless persons	362	390	773	1,525
Total General Population of Geography Included in CoC			501,134	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		95	134	229
Severely mentally ill		116	95	211
Chronic substance abuse		102	108	210
Veterans		*	*	*
Persons with HIV / AIDS		3	8	11
Victims of domestic abuse		80	116	196
Unaccompanied youth (under 18 years)		15	14	29

*not documented in 2010 Point-in-Time (PIT) count
Source: HUD Homeless Resource Exchange Online Report

Citywide centralized homeless intake: no

The homeless in Myrtle Beach have access to a homeless assistance hotline (CASA): (843) 448-6206.

Myrtle Beach, SC

Street Reach Ministries Shelter

1005 Osceola Street Myrtle Beach, SC 29577
www.helpstreetreach.com

Profile

- Shelter type: emergency overnight and recovery center
- Population served: single adults only
- Tenure at current location: 3 years
- Previous location: 9th Avenue and Kings Highway (four blocks from beach front)
- Building size: 20,000 sq. ft.
- Number of beds: 90 for full-time recovery program, 55 for emergency shelter
- Screen for sex offenders: no
- Allow sex offenders to reside in shelter: yes
  Police make periodic visits to check on residents who happen to be registered sex offenders
- Utilize HUD mandated HMIS database system: yes
  (also utilize a separate system that is shared by other non-profits in the area)

Available Services

- Bathroom/shower
- Sleeping facilities
- Meals
- Laundry
- Mail/messages
- Case management
- Bible study
- Medical care (Little River Medical Center)
- Work readiness assistance
- Disability application assistance
- Assistance finding permanent housing
- Life-skills classes
- 12-step / substance abuse program

Myrtle Beach, SC

Summary

Clients who enter the Street Reach recovery program begin by setting long-term goals with the help of an assigned case manager. Participants work through a structured series of classes as well as weekly meetings with their case manager. Participants also break out into small groups under the direction of a community mentor.

Residents pay $40 per week for enrollment in the program. All participants must adhere to program rules and expectations. Shelter management maintains a log of the classes and activities that each participant has fulfilled. If a resident fails to complete a program requirement on time, the management keeps a record. Each participant is allowed three strikes for failure to adhere to expectations. After the third strike that person will be removed from the program.

After successfully completing the 15 week program, clients are eligible to graduate. After graduation clients work with the case manager to set short-term goals and next steps for personal and career development.

Shelter staff stated that moving the shelter inland from the beach front did not affect the demand for services. The current location is close to a variety of social services. In addition, having been located closer to the "party" atmosphere of the beach was not advantageous for homeless persons trying to recover from substance abuse.

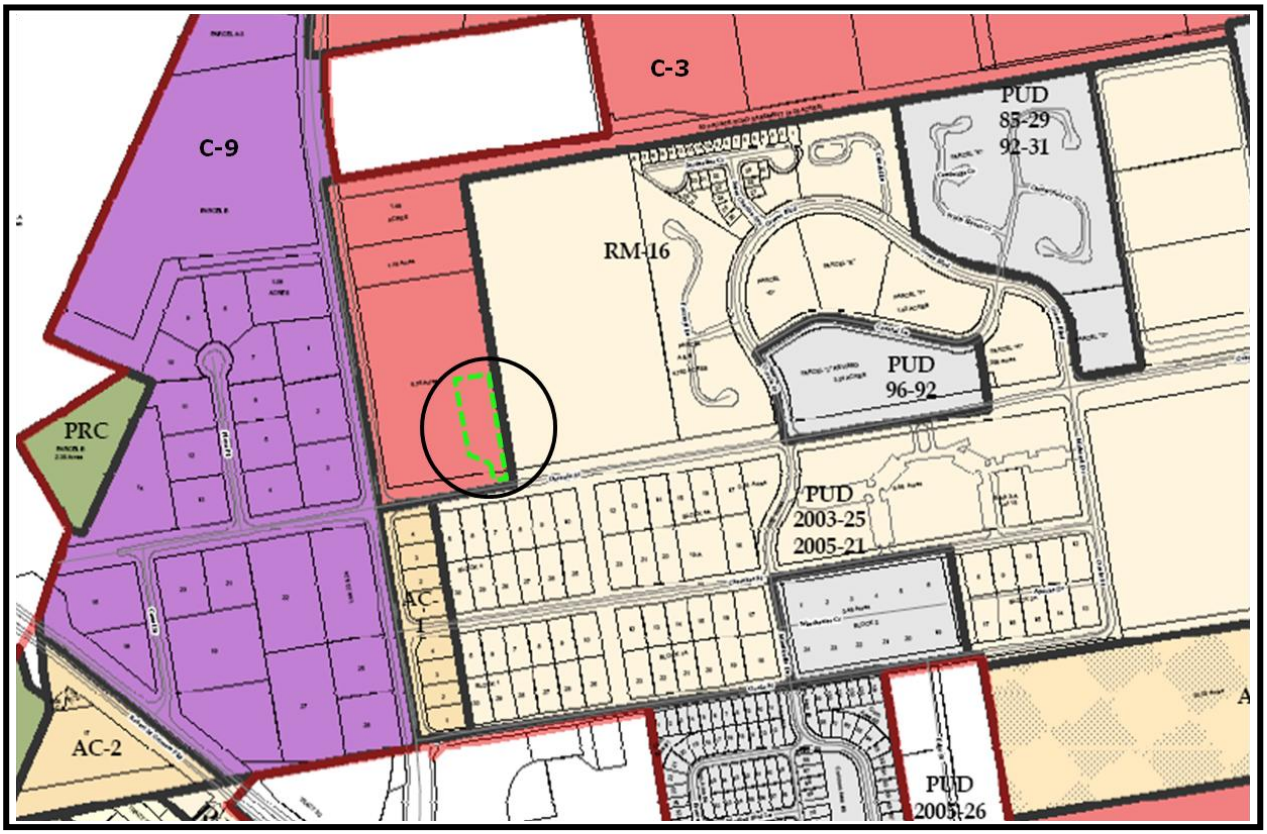
The shelter maintains strong relationships with complementary service providers and the Housing Authority, in order to connect clients with the appropriate services as well as opportunities for permanent housing. The shelter does not have much interaction with surrounding neighbors or neighborhood associations, although the shelter does receive a healthy level of support from local businesses in the form of in-kind donations. Local employers approach shelter residents, periodically, for day-labor opportunities.

The City of Myrtle Beach has recently committed $20,000 to Street Reach Ministries. With these funds the shelter will renovate the second story of its facility, which will add approximately 100 additional beds of shelter capacity.

Myrtle Beach, SC

Zoning

Site: C-3 (general commercial
To the east: RM-16 (medium density/multi-family residential) and PUDs
To the south: PUD and AC-1 (accommodations commercial: transitional residential, office and retail)
To the north and west: C-3



Source: Adapted from City of Myrtle Beach Zoning Map

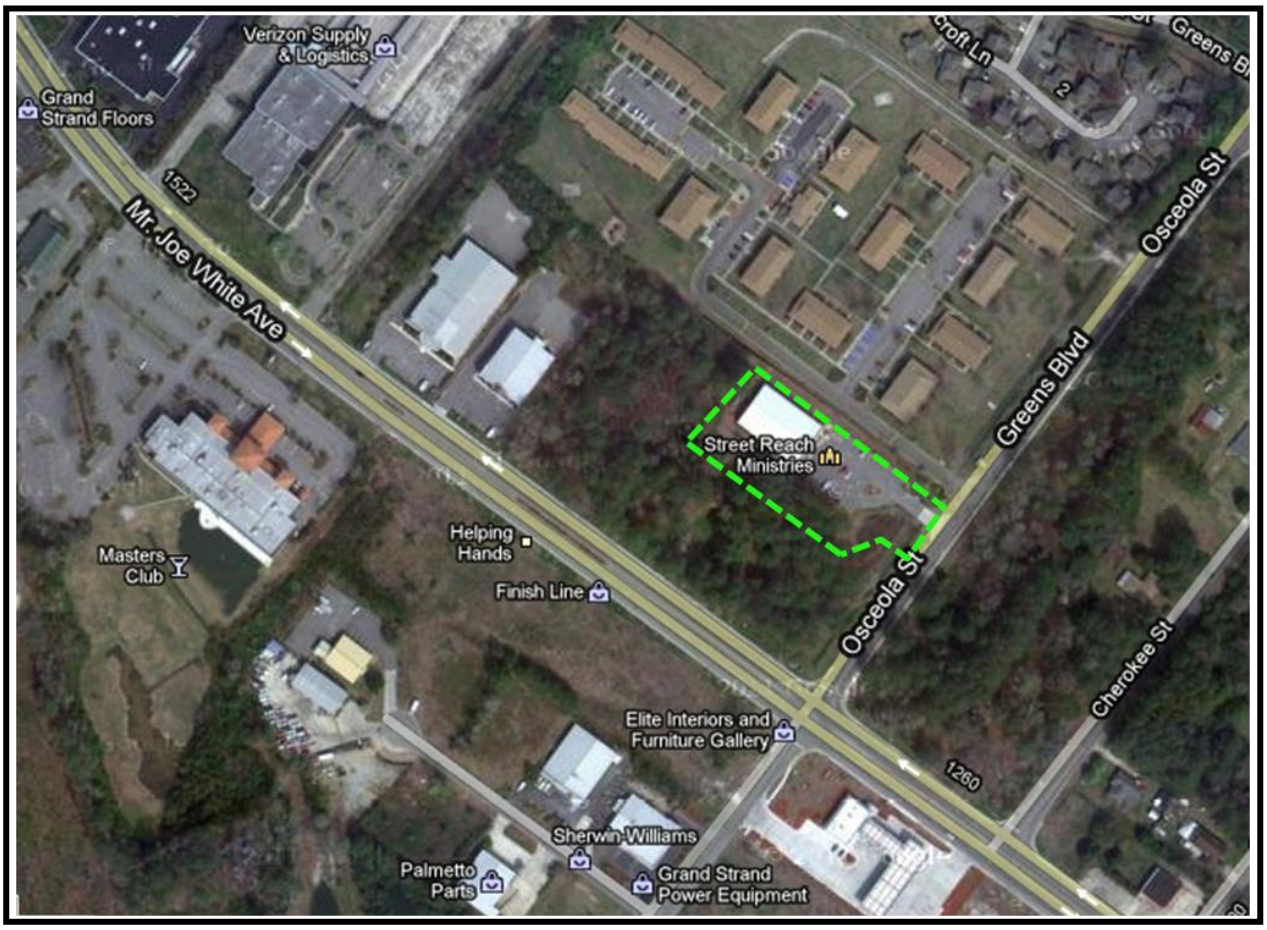
Zoning Legend

AC-1: accommodations commercial (transitional residential, office and retail)
AC-2: accommodations commercial (transitional residential, office and retail)
C-3: general commercial
C-9: commercial trade(manufacturing)
PRC: parks, recreation and conservation
RM-16: medium density/multi-family residential

Myrtle Beach, SC

Surrounding Land Use Examples

- Neighborhood was described as “rough” by interviewee
- Night club
- Forest /open space (utilized by the homeless for camps)
- Furniture gallery
- Verizon warehouse
- Apartment complex and subsidized housing, managed by Grand Strand Housing Authority – Sandy Gate, Monticello and Quail Marsh
- Radio station / tower
- Social services are nearby



Source: Adapted from Google - Map Data 2011

Myrtle Beach, SC

Haven House
975 Campbell Street, Myrtle Beach, SC 29577
www.myrtlebeachhaven.com

Profile

- Shelter type: emergency overnight
- Population served: families with children
- Tenure at current site: 25 years

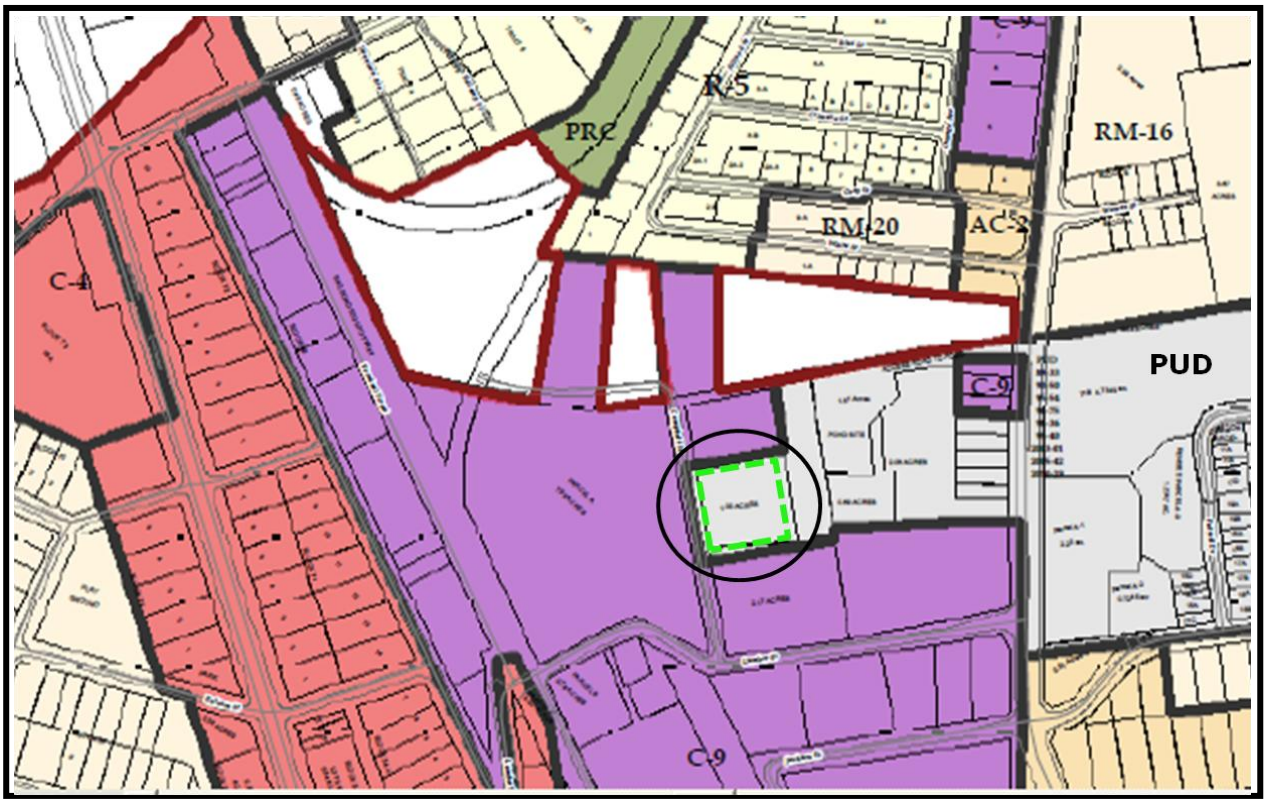
Overnight capacity:
- Single mothers with children: 20 beds
- Men-only dorm: 6 beds
- Cribs for small children: 4
- Total sleeping capacity in family rooms: 12 persons

(at the time this report was published, shelter staff could not be reached for an interview)

Myrtle Beach, SC

Zoning

Site: PUD
To the north, south, and west: C-9 (commercial trade: manufacturing)
and Horry County land, zoned industrial
To the east: PUD



Source: Adapted from City of Myrtle Beach Zoning Map

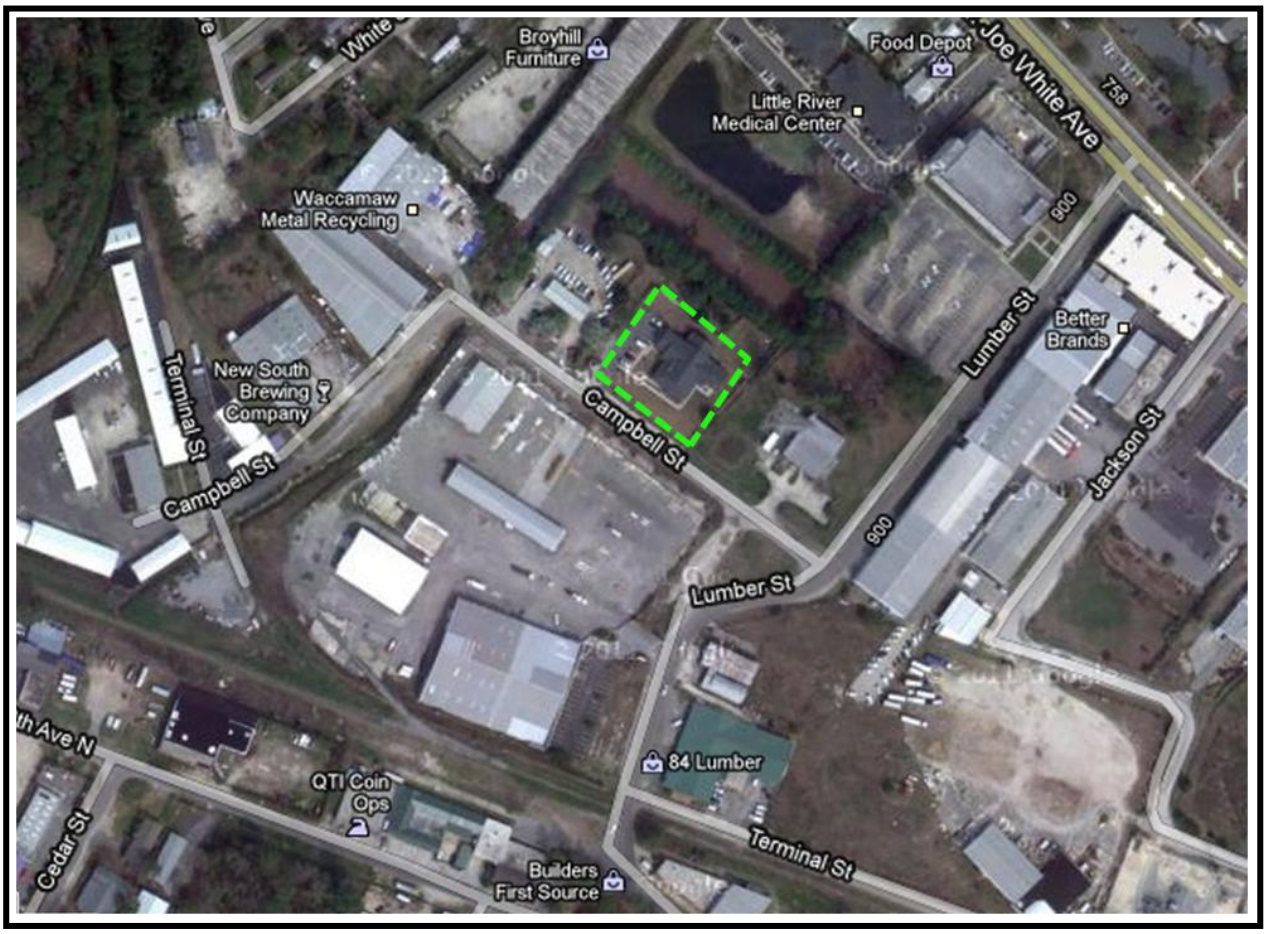
Zoning Legend

AC-2: accommodations commercial (transitional residential, office and retail)
C-4: neighborhood commercial
C-9: commercial trade(manufacturing)
PRC: parks, recreation and conservation
R-5: single-family residential
RM-16: medium density/multi-family residential
RM-20: high-density multifamily residential

Myrtle Beach, SC

Surrounding Land Use Examples

- Lumber yards
- Recycling center
- Laundromat
- Grocery store
- Manufacturing



Source: Adapted from Google - Map Data 2011

Myrtle Beach, SC

Location

The Street Reach Ministries shelter is located 1.3 miles from the beach front and 1.5 miles from the Myrtle Beach Convention Center. Haven House is located 0.7 miles from beach front.

Source: Adapted from Google - Map Data 2011

Daytona Beach Florida

Profile

Daytona Beach, FL

City Profile

Population	63,946
Median Household Income	$30,658
Per Capita Income	$19,054
Median Gross Rent	$756
Median Gross Rent as % of HH Income	37.1%

Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): FL-504 Daytona Beach/Flagler Counties

	2010			
	Emergency	**Transitional**	**Unsheltered**	**Total**
Individual homeless persons	61	164	1,452	1,677
Persons in households with adults and children	39	439	0	478
Total homeless persons	100	603	1,452	2,155
Total General Population of Geography Included in CoC			580,076	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		0	173	173
Severely mentally ill		49	121	170
Chronic substance abuse		117	330	447
Veterans		*	*	*
Persons with HIV / AIDS		15	61	76
Victims of domestic abuse		154	0	154
Unaccompanied youth (under 18 years)		0	0	0

*not documented in 2010 Point-in-Time (PIT) count

Source: HUD Homeless Resource Exchange Online Report

Daytona Beach, FL

Citywide centralized homeless intake: no

There is a city-wide 211 hotline for emergency assistance. Intake assessments are completed on a shelter-by-shelter basis.

According to the shelter directors who were interviewed for this report, the homeless population tends to spend time in the downtown area where a cluster of supportive services is available. The Daytona Beach police force actively pursues the homeless to remove them from the oceanfront, leaving few homeless people in the resort area.

Daytona Beach, FL

Salvation Army Shelter

560 Ballough Rd Daytona Beach, FL 32114

Profile

- Shelter type:
  - Emergency (EOS)
  - Temporary
  - Full-time drug treatment program
  - Day center
- Population served: single adults
- Tenure at current location: Salvation Army has provided general homeless services on the site since the 1930's. The overnight shelter opened in the late 1940's.
- Total overnight capacity: 75 beds
  - EOS: 28 beds (20 men, 8 women)
  - Temporary shelter: 4 beds for women
    - Homeless Veterans: 7 beds
    - HUD Transitional Supportive Housing: 7 beds
  - Full-time drug treatment program: 29 beds
  - When emergency weather conditions arise, the shelter makes an additional four beds available to anyone in the community who needs them.
- Maximum stay:
  - EOS: 2 weeks
  - Streets Team: 6 months
  - Temporary shelter: 2 years
  - Drug treatment: 2 – 6 months
- Sex offender / violent offender screening:
  - For emergency shelter: no
  - For transitional housing: yes
    (sex offenders are not allowed to reside in transitional housing)
- Utilize HUD mandated HMIS database system: yes

Available Services

- Bathroom/shower
- Sleeping facilities
- Meals
- Laundry
- Mail/messages
- Full-time, court-ordered drug rehabilitation program

Daytona Beach, FL

Summary

The approach taken by the Salvation Army is to develop a presence in urban areas based upon demonstrated need for charity services in the area. Likewise, the Salvation Army established a presence in the downtown Daytona area because of a demonstrated need. If there had been a greater demonstrated need for homeless services in the beach-front area, the Salvation Army would have prioritized locating in that area, at the time the shelter was becoming established.

The Salvation Army owns the property on which the shelter operates. They also own an open lot across the street, west of the shelter, which serves as a recreation yard for residents.

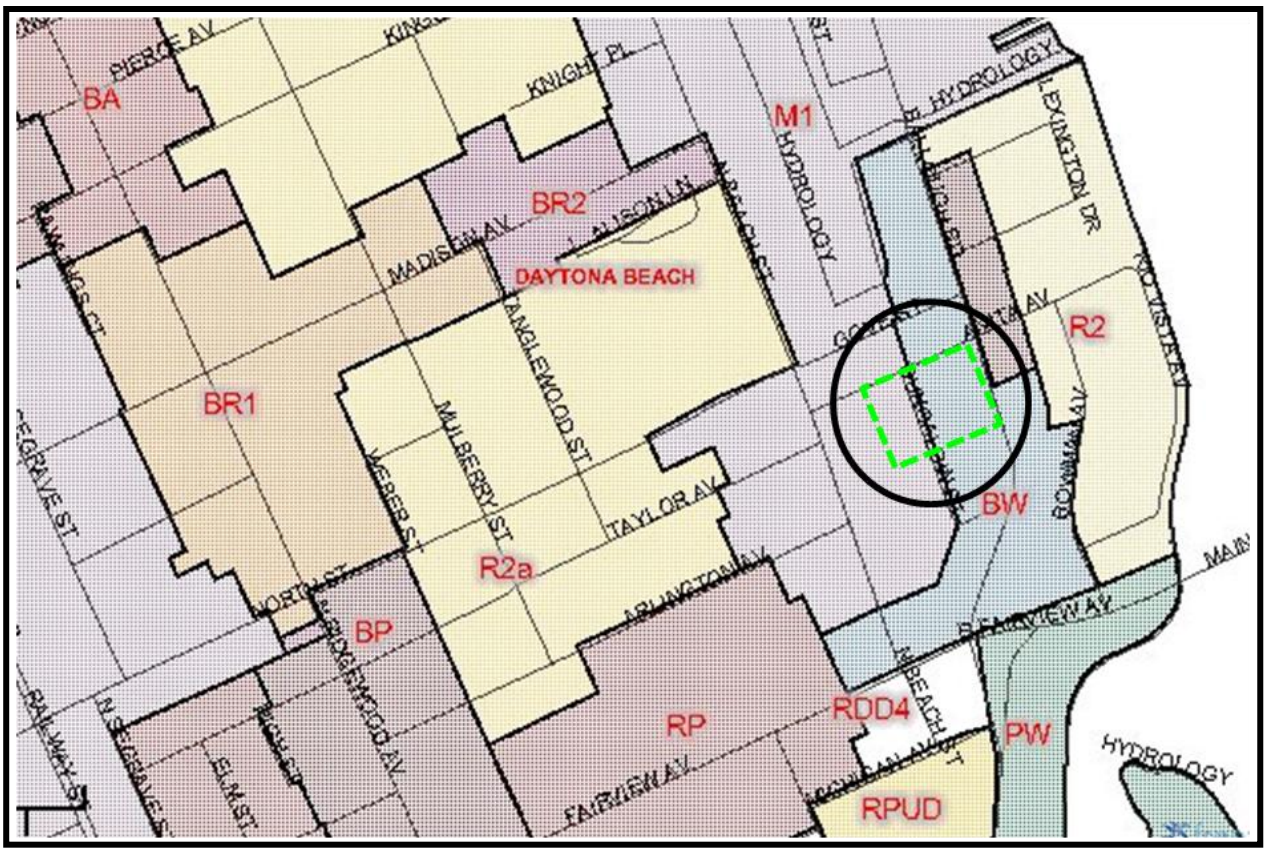
A portion of the clients who are housed on an emergency basis become part of the Streets Team program. The Streets Team is comprised of 10 residents who clean up the streets in the downtown area on a full-time basis.

The shelter does not have a transportation services program. Shelter management has access to a limited number of bus passes, which it distributes among residents who are enrolled in the long-term recovery / transitional program.

Daytona Beach, FL

Zoning

Site: BW (for the shelter), M1 (for the shelter's recreational lot). Site also lies within the Ballough Road Redevelopment Zone.
To the north: M1
To the east: R2, then the Halifax River Lagoon (west of the Daytona Beach barrier island)
To the south: BW and PW
To the west: M1, R2A



Zoning Legend

Source: Adapted from City of Daytona Beach Zoning map

BA	Business Automotive
BP	Business Professional
BR-1	Retail
BR-2	Shopping Center
BW	Business Warehouse
M-1	Local Service Industry

PW	Public waterfront (city owned)
R-2a	Multi-Family Residential
RDD-4	Redevelopment (Business, Motor Vehicle, Mixed-Use)
RP	Residential Professional
RPUD	Residential Planned Unit Development

Daytona Beach, FL

Surrounding Land Use Examples

- Auto services
- Ice cream shop
- Residential
- There is a small neighborhood park to the north west

Source: Adapted from Google - Map Data 2011

Daytona Beach, FL

Star Family Center

340 North Street Daytona Beach FL 32114
www.thestarfamilycenter.org

Profile

- Shelter type: emergency overnight and day center (day services end at 4pm)
- Population served: families with children
- Overnight capacity: 94 beds, including 10 for patients just released from the hospital
- Maximum stay: 6 months
- Year opened: October 2006
- Allow sex offenders and/or those with violent offenses: no
  The shelter performs a complete criminal background check during the intake process
- Utilize HUD mandated HMIS database system: yes

Available Services

- Bathroom/shower
- Sleeping facilities
- Nap area
- Meals
- Laundry
- Clothing distribution
- Mail/messages
- Haircuts
- Computer lab
- Medical clinic
- Case management
- Life-skills classes
- Assistance with various social service applications
- Refurbished bicycle distribution
- Work boots distribution
- Assistance finding permanent housing and employment

Daytona Beach, FL

Summary

The Star Family Center property served as an administrative office for homeless outreach prior to becoming a shelter. The Star Family Center operates as a division of Halifax Urban Ministries and serves both Volusia and Flagler counties.

There are expectations for residents. Each resident must stay on track with his/her case management plan. Each resident is responsible for performing chores, which support the day-to-day operations of the facility. The shelter has a close working relationship with the local police force as well as two major substance abuse treatment centers in the area.

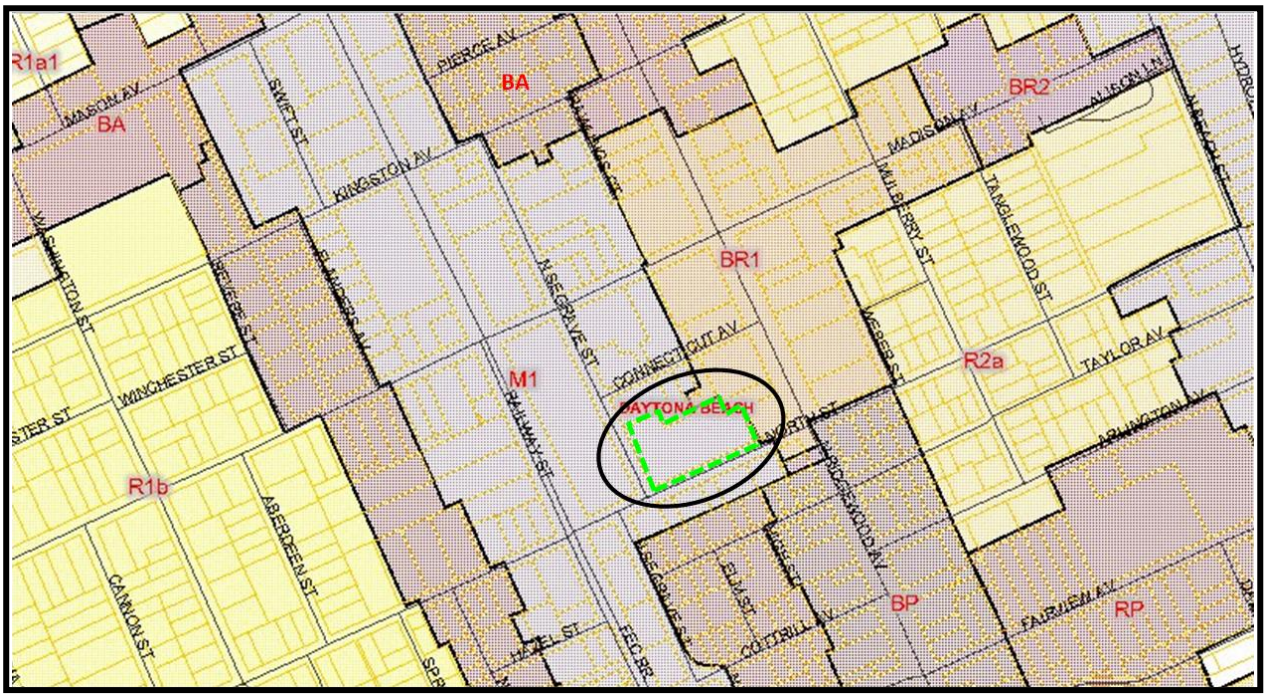
The shelter provides bus passes, gas cards, and bus tickets out of town (to return a client to his/her home city) when funds are available. The shelter has spent $4,000 so far this year on such transportation aids. The shelter benefitted from the recent donation of a 15-passenger van, which is driven by shelter staff members on an as-needed basis.

The Star Family Center is located in a commercial corridor in a fairly "rough" area of the city. Residential neighborhoods lie to the east and west of the commercial corridor. Some Daytona Beach residents have advocated for the shelter to be moved inland near the Volusia County jail. The jail is located 11 miles from the oceanfront and does not have access to public transit.

Daytona Beach, FL

Zoning

Site: M1
To the north: M1
To the east: BR1
To the south: BP
To the west: M1



Source: Adapted from City of Daytona Beach Zoning Map

Zoning Legend

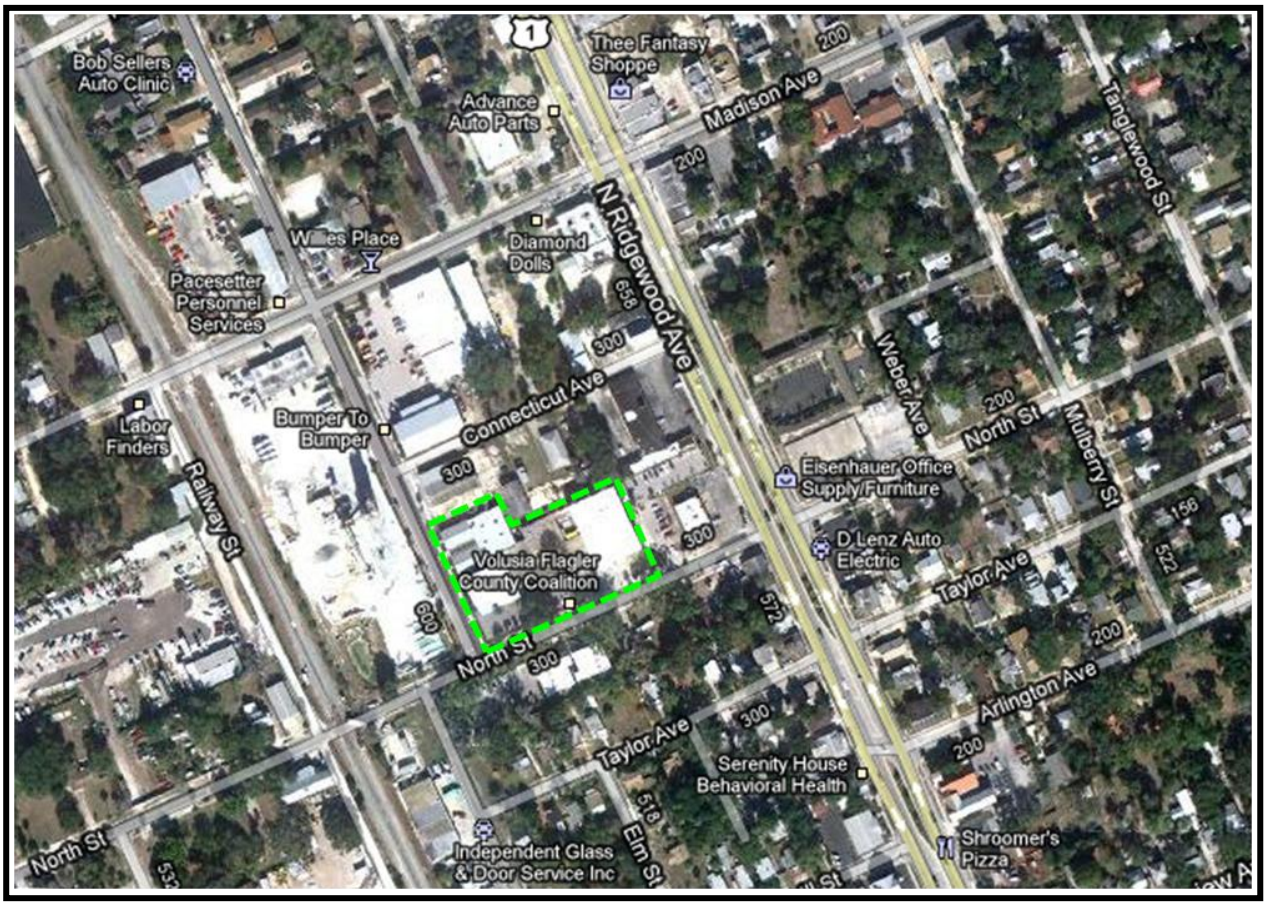
BA	Business Automotive
BP	Business Professional
BR-1	Retail
BR-2	Shopping Center

M-1	Local Service Industry
R-1 a-1	Single-Family Residential
R-2a	Multi-Family Residential
RP	Residential Professional

Daytona Beach, FL

Surrounding Land Use Examples

- Auto towing lot
- Auto glass service
- Adult bookstores
- Haven substance abuse recovery center
- Convenience store (adjacent to the east)
- Employment services

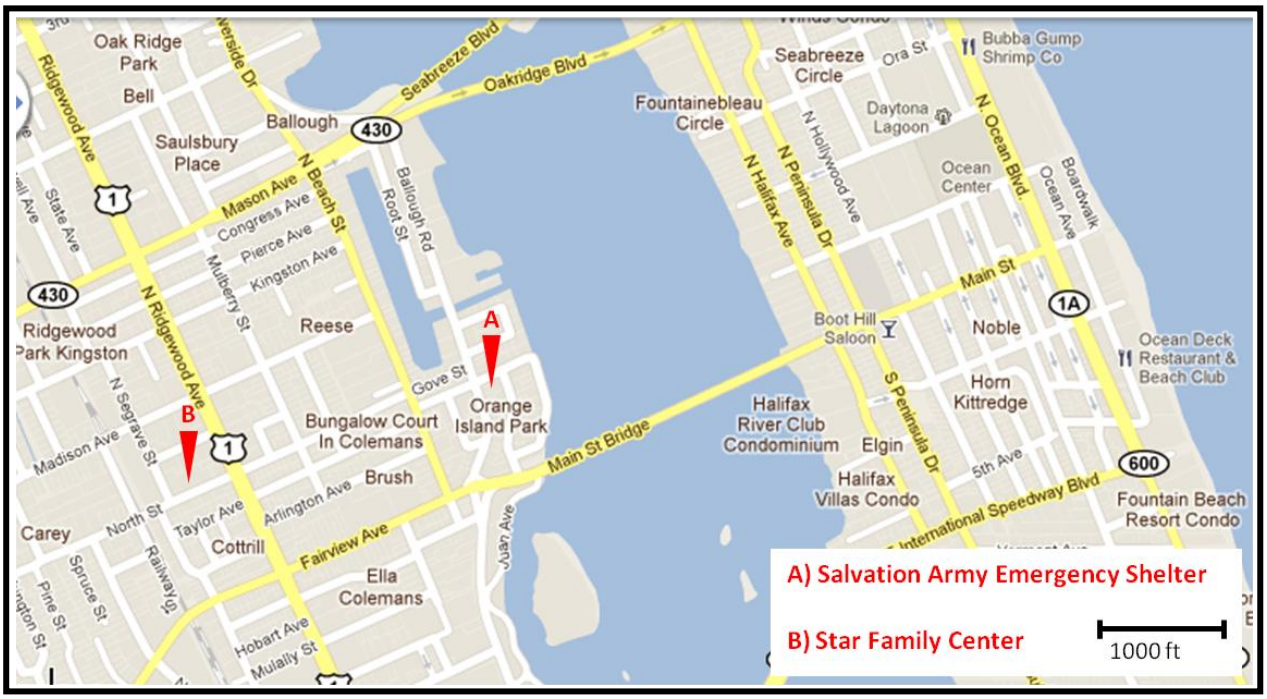


Source: Adapted from Google - Map Data 2011

Daytona Beach, FL

Location

Both shelter sites lie in the downtown area. The Star Family Center is a 1.6 mile walk from the oceanfront and one block from a public transit stop. The Salvation Army shelter is a 1.2 mile walk from the oceanfront.



Source: Adapted from Google - Map Data 2011

Fort Lauderdale
Florida

Profile

Fort Lauderdale, FL

City Profile

Population	183,374
Median Household Income	$50,886
Per Capita Income	$35,867
Median Gross Rent	$972
Median Gross Rent as % of HH Income	33.6%

Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): FL-601 Ft Lauderdale/Broward County

	2009			
	Emergency	**Transitional**	**Unsheltered**	**Total**
Individual homeless persons	658	1,181	736	2,575
Persons in households with adults and children	226	360	64	650
Total homeless persons	884	1,541	800	3,225
Total General Population of Geography Included in CoC			1,759,132	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		171	206	377
Severely mentally ill		848	0	848
Chronic substance abuse		1,067	0	1,067
Veterans		194	0	194
Persons with HIV / AIDS		97	0	97
Victims of domestic abuse		146	0	146
Unaccompanied youth (under 18 years)		25	0	25

Source: HUD Homeless Resource Exchange Online Report (2010 data not available)

Fort Lauderdale, FL

Citywide centralized homeless intake: no

There is a homeless helpline for all of Broward County: (954) 563-4357

There are three major shelters that serve Broward County. The shelters are located in Pompano Beach, Fort Lauderdale and Hollywood, FL. This profile will focus on the shelter in Fort Lauderdale, serving the central county. Homeless pick-up points are listed on the Broward county website. Homeless are allowed to congregate at these points until the mobile outreach unit arrives to escort them to a shelter. For the central county, the pick-up point is at the Salvation Army lodge.

According to an interviewee, the homeless in Fort Lauderdale follow the feeding schedule of local faith-based organizations and charities. There will tend to be a gathering of homeless individuals around the location where a meal is scheduled to provided that day/night. The beach area is very hot and not necessarily a desirable place for the homeless to populate during the day. As in other cities encampments still exist throughout Fort Lauderdale where the homeless can be found on any given day.

Fort Lauderdale, FL

Broward Partnership for the Homeless, Homeless Assistance Center

920 Northwest 7th Ave, Fort Lauderdale, FL 33311
www.bphi.org/index.shtml

Profile

- Shelter type: emergency overnight and day center
- Year opened: 1999
- Building size: 57,000 sq. ft.
- Total overnight capacity: 200
    - Two men's dormitories (120 men)
    - Women's dormitory (40 women)
    - Modular family wing (ten families or 40 family members)
- Average length of stay: 60 days
- Allow sex offenders to reside on premises: no
- Utilize HUD mandated HMIS database system: yes
- In 2010, 53% of the unduplicated persons who went through the intake process achieved the outcome of obtaining transitional or permanent housing.

Available Services

- Bathroom/shower
- Sleeping facilities
- Meals
- Laundry
- Mail/messages
- Library
- Gym
- Hair salon
- Clothing donation center
- Computer classes
- Case management
- Child care
- Parenting education
- Children's learning center classrooms
- Primary medical and dental care
- Mental health diagnosis and treatment
- Support groups and family therapy
- Substance abuse education, prevention, intervention and treatment
- 12-Step programs
- Educational services, including GED attainment
- Vocational assessment
- Job training and placement services
- Life-skills classes

Fort Lauderdale, FL

Summary

Up until the late 1990's there were no homeless shelters in Fort Lauderdale. There were a significant number of homeless encampments in the downtown area. The public was exasperated and wanted something to be done about the encampments. The response from the city and county was to develop an overnight homeless shelter. The county was willing to fund the program. And the city was willing for the shelter to be located within the city as long as the city could place specific restrictions on the use of the site.

The city sends an auditor to the Broward Partnership complex on an annual basis to assess and enforce the shelter's compliance with the city ordinance that guides use on the site. The design of the building has been a key factor in helping the center to blend into the surrounding urban environment. The two-story building is U-shaped. The building exterior, facing the street, is inconspicuous and has no building number or signage. The building entrance is located on the rear side of the building, facing away from the street. The entrance lets out into a court yard, which includes a smoking pavilion and picnic tables.

The homeless are not allowed to walk up to the building, loiter or form queues on the street-facing side of the building. Instead, an outreach team drives to pick-up points within the city to collect homeless individuals and drop them off at the shelter at 5pm daily. The outreach team consists of a police officer, a social worker and a formerly homeless liaison. As of 2003, coordination of the outreach team has been handled by a separate non-profit organization: The Taskforce For Ending Homelessness.

Strategy

Although the Broward County Partnership is an emergency shelter, the goal of its programs is to help residents work through the issues that contributed to the incidence of homelessness in the first place, to rehabilitate residents, to provide ongoing support, and ultimately to prevent the client / family from relapsing into homelessness.

The service program design passes through four phases:

1) assessment, orientation and stabilization
2) development of an individualized case plan
3) implementing various interventions of the case plan
4) preparing for discharge and the provision of ongoing support

The shelter aims to provide a comprehensive set of services so that residents will be able to fulfill a majority, if not all, of their daily needs within the shelter site. This frees up residents'

time so they can focus on becoming rehabilitated, improving their level of education, and/or finding stable employment.

The organizational development process to arrive at this extensive level of service did not happen overnight. The shelter began by offering a basic set of services: showers, laundry, sleeping facilities. With the addition of full-time development staff, the shelter has gained the capacity to apply for program grants and solicit major donations from the private sector. With increasing levels of income the shelter has been able to expand the number and scope of programs it can offer.

Relationship with Local Residents

When the Broward Partnership first came into operation, the shelter staff would hold monthly meetings with a coalition of five adjacent neighborhood associations to gather input and work through issues. The shelter came to run smoothly and without disruption to the surrounding neighborhoods. The neighborhood advisory coalition disbanded over time because there was no longer a need for it. Now that the shelter is considering an expansion, it will reconvene meetings with these neighborhood associations, the city, and other stakeholders, to work through the process collectively.

Employment Program

The shelter has a robust employment program. There is a staff member who continues to develop relationships with local businesses in order to establish paths to channel shelter residents into employment with those businesses.

Early in the intake process, the shelter conducts an assessment of residents' level of job related skills and job-readiness. For those residents who are considered job-ready upon intake, there are opportunities to go on field trips where residents will engage in simulated job interviews or learn how to navigate through other work-related situations.

The shelter tracks clients' employment progress while the client is residing at the shelter, and even for a time after the client leaves the shelter. If a client successfully retains the same job for one year, the shelter provides the client with a free laptop. In 2010, the shelter gave away ten laptops through this incentive program. Former clients often come back to guide and mentor new Broward Partnership clients.

Fort Lauderdale, FL

Transportation

It is not usual for the shelter to provide van transport to current residents. However, at the discretion of the case manager, shelter staff may drive residents to appointments. Typically this transportation option is offered to the mentally or physically disabled, or in cases where a client has a job interview.

The Broward County police force donates all unclaimed bicycles that it collects to the three county shelters. These bicycles are passed on to residents. The Broward Partnership is able to obtain discounted and free bus passes from the local transit authority. Shelter staff offer the passes as incentives or rewards to residents. Employed residents are able to buy the passes outright at a deep discount.

Medical and Dental Care

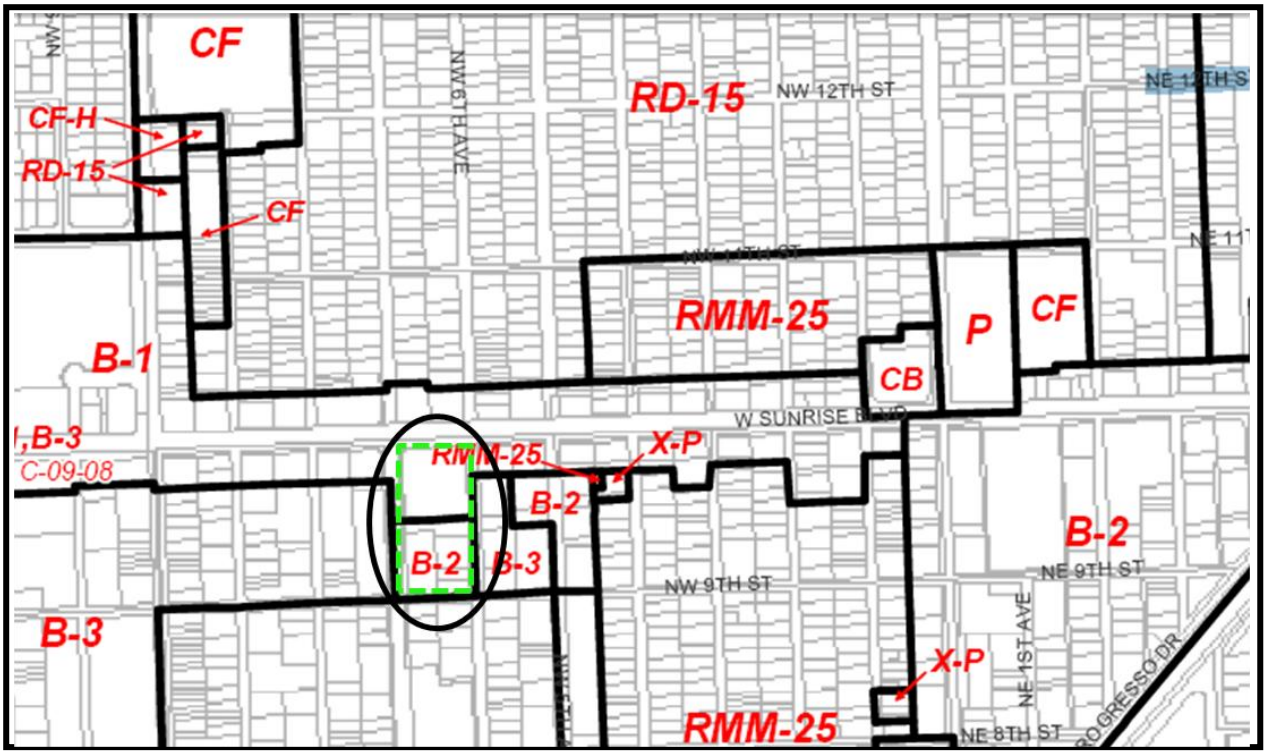
Residents are able to access basic medical care on-site. The shelter is responsible for purchasing the necessary medical equipment. Registered nurses from an outside agency visit the clinic on a regular basis to provide care.

Relying on funding from private contributions, the shelter has been able to offer the Smile Works program. The Smile Works program provides residents in need of major dental reconstruction with a smile that will allow him or her to be confident during job interviews.

Fort Lauderdale, FL

Zoning

Site: B-1 and B-2
To the north: RD-15
To the east: B-1, B-2, B-3
To the south: I
To the west: B-1, B-3



Zoning Legend Source: Adapted from City of Fort Lauderdale Zoning Map

B-1:	Boulevard Business
B-2:	General Business
B-3:	Heavy Commercial / Light Industrial Business
CB:	Community Business
CF:	Community Facility
CF-H:	Community Facility / House of Worship
I:	General Industrial
P:	Parks, Recreation and Open Space
RD-15:	Residential Multi-family / Low Rise / Medium Density
RMM-25:	Residential Multi-family / High Rise / Medium Density
X-P:	Exclusive Use / Parking

Fort Lauderdale, FL

Surrounding Land Use Examples

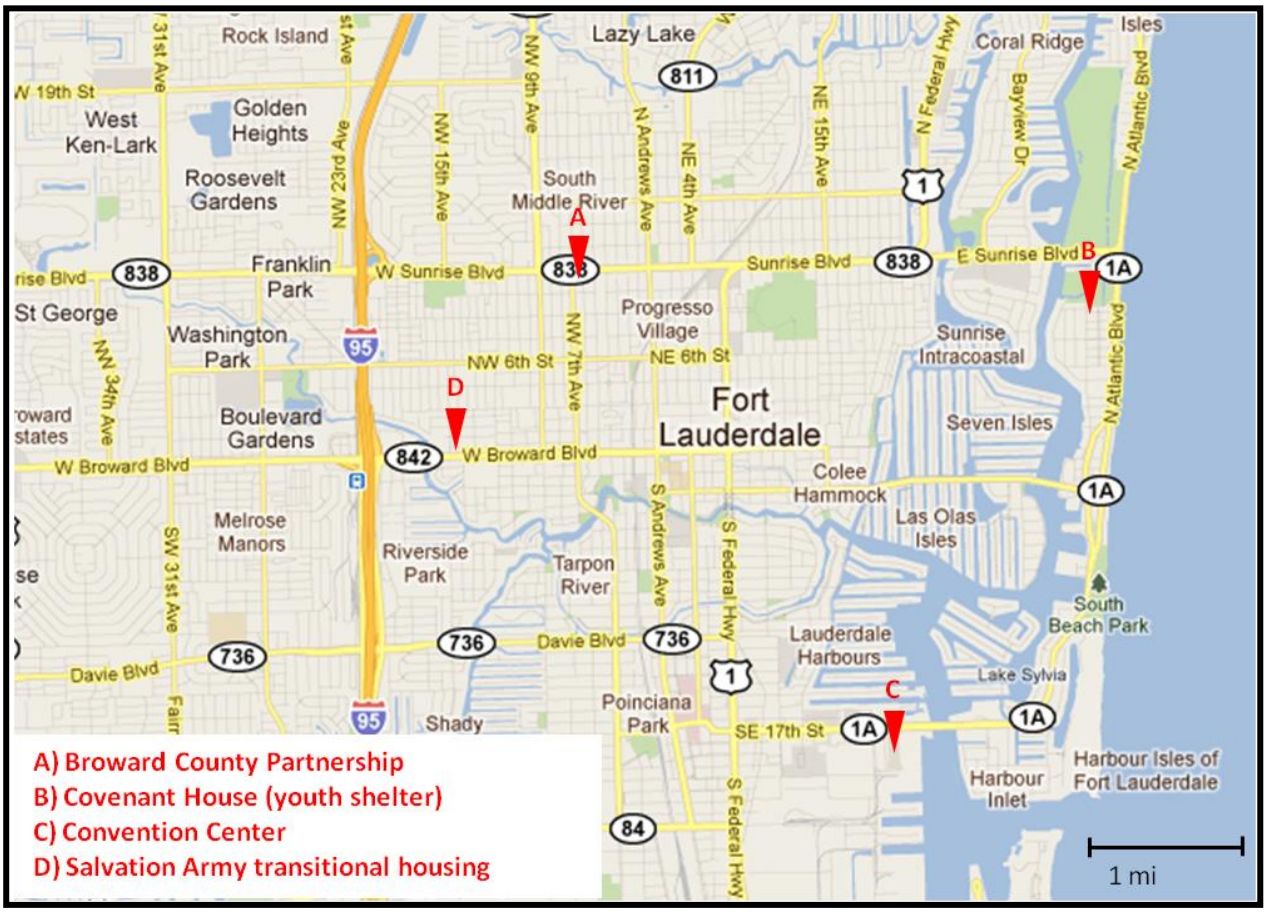
- The BCPC lies in a transitional district between residential and industrial uses.
- Fort Lauderdale housing authority
- A charter high school (new as of 2010-2011 school year)

Source: Adapted from Google - Map Data 2011

Fort Lauderdale, FL

Location

The Broward County Partnership Center (BCPC) is located 3 miles directly inland from the oceanfront. A bus line runs directly in front of the BCPC. It is a four mile walk from the BCPC to the convention center. Additional shelter locations are shown below.



Source: Adapted from Google - Map Data 2011

Key West Florida

Profile

Key West, FL

City Profile

Population	22,914
Median Household Income	$52,004
Per Capita Income*	$30,800
Median Gross Rent	$1,279
Median Gross Rent as % of HH Income	35.1%

Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): FL-604 – Monroe County
(the county CoC includes the city of Key West, FL)

	2009*			
	Emergency	**Transitional**	**Unsheltered**	**Total**
Individual homeless persons	136	90	612	838
Persons in households with adults and children	50	48	104	202
Total homeless persons	186	138	716	1,040
Total General Population of Geography Included in CoC			74,024	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		164	125	289
Severely mentally ill		203	0	203
Chronic substance abuse		176	0	176
Veterans		66	0	66
Persons with HIV / AIDS		164	0	164
Victims of domestic abuse		44	0	44
Unaccompanied youth (under 18 years)		16	0	16

*HUD 2010 Point-in-Time (PIT) count data was not available at the time this report was written
Source: HUD Homeless Resource Exchange Online Report

Key West, FL

Citywide centralized homeless intake: no

The City of Key West has identified the need for a homeless day center. A progress report, coordinated by the Southernmost Homeless Assistance League (SHAL), identified that the local government spends $3.3 million per year to house homeless individuals at the Detention Center, $500,000 per year for ambulance service, and $1 million per month on medical care at the Lower Keys Medical Center (during the winter months) for homeless individuals. Public funds will be better spent through a program that assesses the needs of homeless individuals during intake at a day center and directs homeless individuals to the appropriate services, with an emphasis on prevention and rehabilitation.

SHAL is currently conducting door-to-door outreach surveys with local residents to collect recommendations on where to site a homeless day center. The mayor and the police force are both supportive of the day center project. As part of the day center project, SHAL has recommended dedicating funds for a mobile outreach unit. The unit would consist of a driver and case manager, who would pick up homeless individuals off the street throughout the city and bring them to the day center for an intake assessment.

Key West, FL

Keys Overnight Temporary Shelter (KOTS)

5501 College Rd, Key West, FL 33040
www.fkoc.org/emergency_shelter.html

Profile

- Shelter type: emergency[5]
- Population served: single adults

Available Services

- Bathroom/shower
- Sleeping facilities
- Medical care
- HIV testing

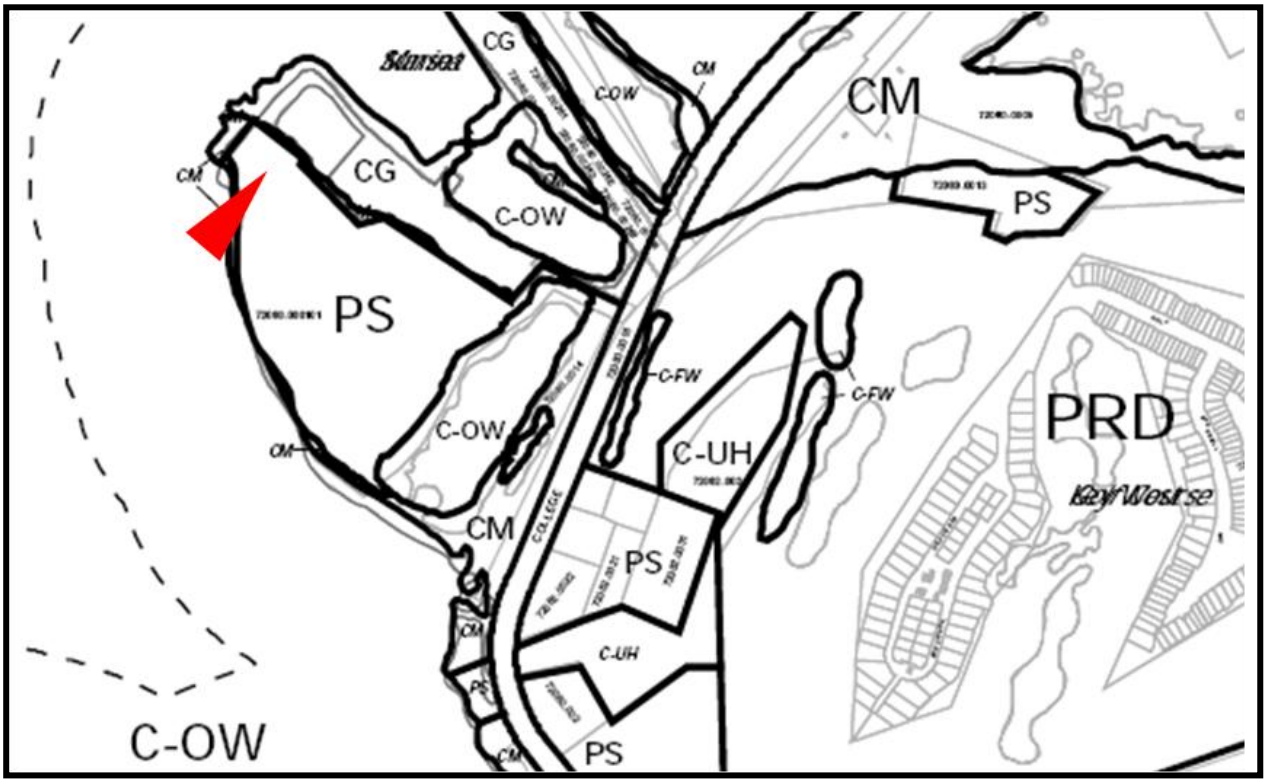
The City of Key West contracts with the Florida Keys Outreach Coalition to manage the emergency shelter.

[5] Despite the word "temporary" in the name, this shelter is an emergency shelter, not a transitional or temporary shelter.

Key West, FL

Zoning

Site: Public services
To the north: General commercial, conservation (ocean)
To the east: Public services, conservation (water inlet)
To the south: Public services, conservation (ocean)
To the west: Conservation (ocean)



Source: Adapted From City of Key West Zoning Map

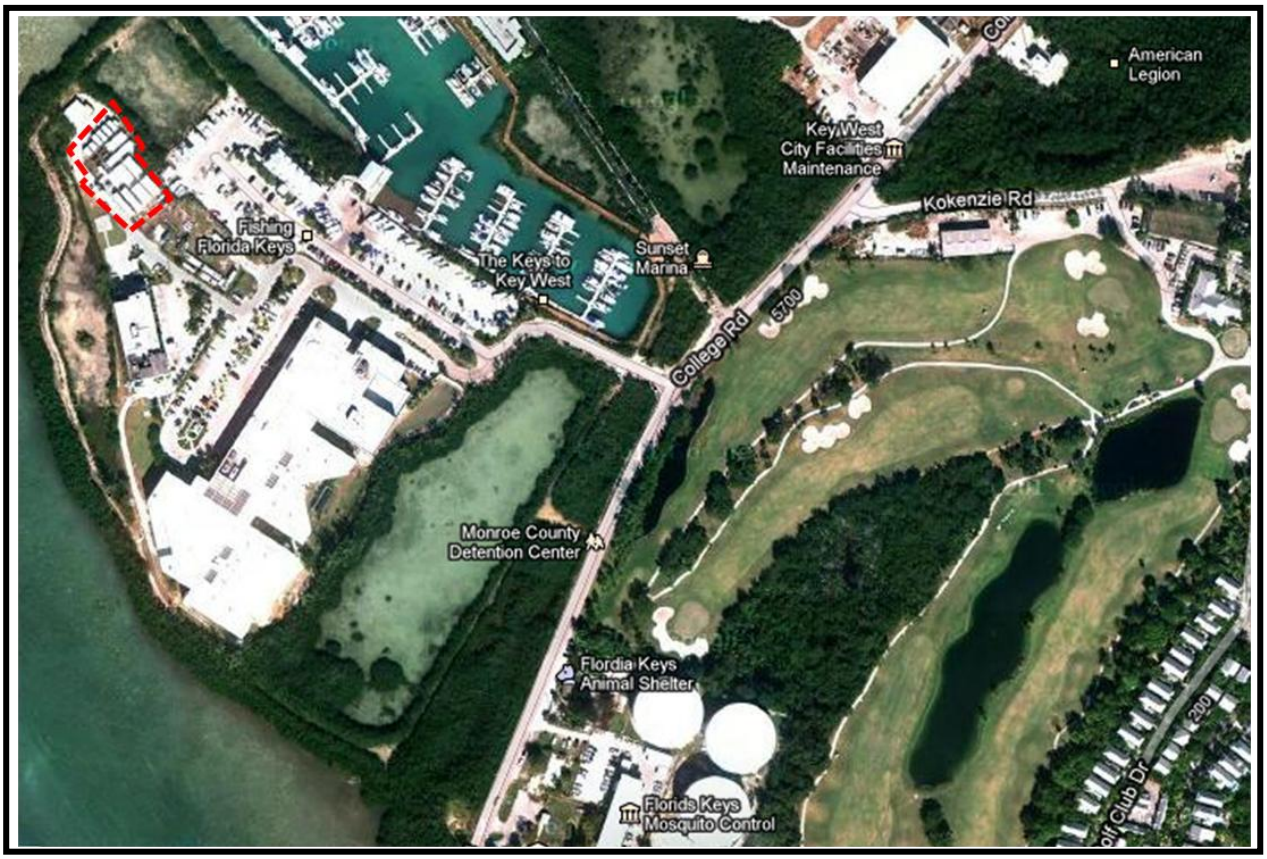
Zoning Legend

CG:	General Commercial
PRD:	Planned Redevelopment and Development District
PS:	Public Services
C-FW:	Conservation- Freshwater Wetlands
CM:	Conservation- Mangrove
C-OW :	Conservation- Outstanding Waters of the State
C-UH:	Conservation- Upland Hammock

Key West, FL

Surrounding Land Use Examples

- Monroe County detention center
- Florida Keys Society for the Prevention of Cruelty to Animals
- Key West Country Club and golf course
- Sunset Marina and Waterfront Residences
- (building now vacant) Monroe County early childhood development center
- Monroe County mosquito control center



Source: Adapted From Google - Map Data 2011

Key West, FL

Florida Keys Outreach Center (FKOC)

2221 Patterson Avenue, Key West, FL 33040 (The William M. Neece Building)
www.fkoc.org/transitional_housing.html

Profile

- Shelter type: transitional housing and recovery center
- Population served: single men, single women, and women with children
- Years in current location: 8 for men's structure, 12 for women's structure
- Overnight capacity: 70 beds for men, 52 beds for women & children, located in separate buildings
- Maximum stay: two years
- Allow sex offenders to reside on the premises: no
- Utilize HUD mandated HMIS database system: yes

Available Services

- Bathroom/shower
- Sleeping facilities
- Meals for residents
- Laundry
- Mail/messages
- Case management
- Full-time substance abuse program (required daily AA meetings)
- Food pantry for non-residents

Key West, FL

Summary

The FKOC rehabilitation program consists of three phases. During the initial phase there is a high degree of oversight by the shelter staff. Rules are enforced to regulate conduct, such as signing in and out in a log when the residents enter or leave the premises. Residents initially room in the Neece building in bunk-style housing with up to 9 roommates. In the second and third phases of the program, restrictions are removed. Residents progressively gain more privileges and freedom. As residents advance through the program, they are allowed to live in accommodations with fewer roommates. By the third phase of the program, each resident will have only one roommate. All clients are responsible for carrying out daily chores during the course of the program.

Residents are required to seek employment or SSI income and/or to volunteer their time. The fee for residency at the shelter is $85 per week. This creates an incentive for residents to secure employment. The shelter director stated that a key factor affecting residents' ability to obtain employment is most often self-esteem, even more so than the resident's work history.

The KOTS emergency shelter is typically filled to capacity, while the FKOC transitional housing program is rarely filled to capacity. One reason for this is that some clients can't handle the structured atmosphere of the substance abuse rehabilitation program. Some clients also have difficulty living inside in closed quarters after having lived for many years on the streets.

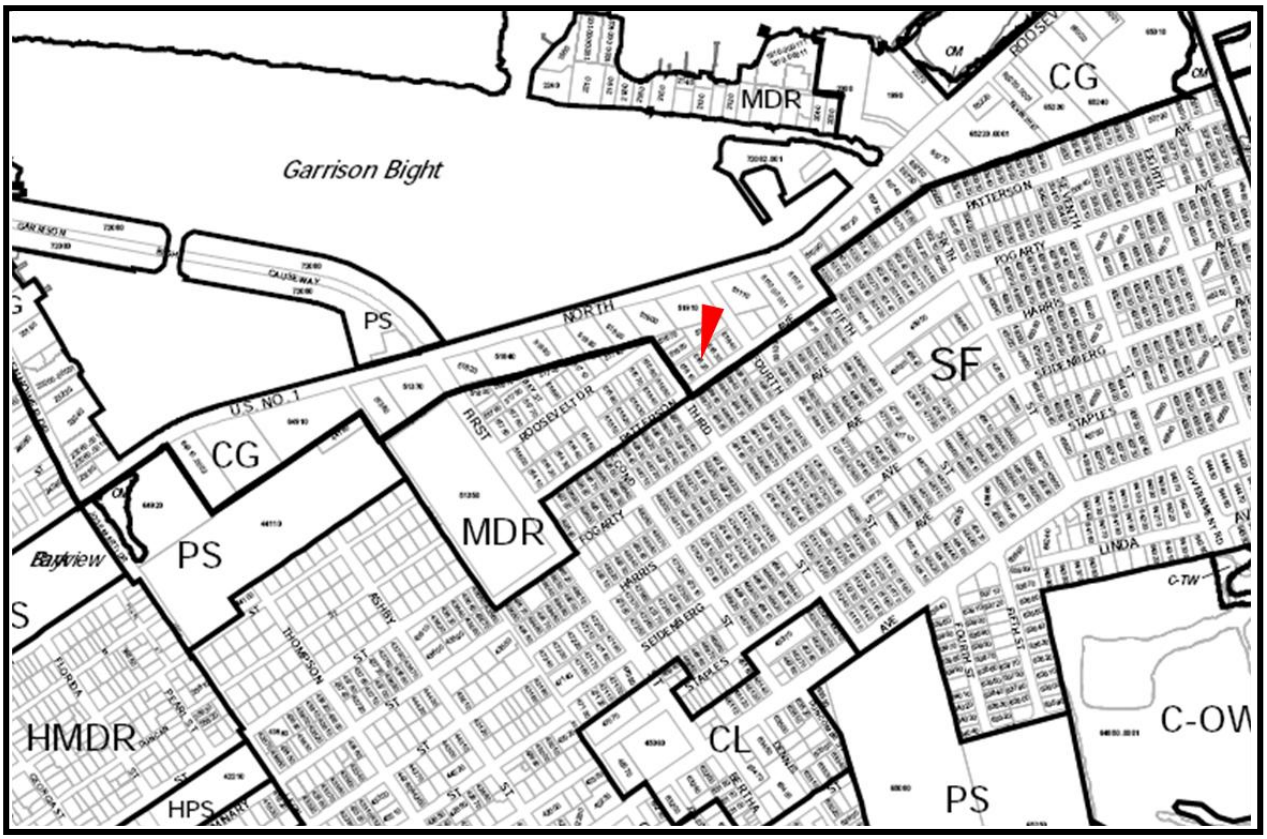
The FKOC structure used to be a shelter for homeless youth. It was then converted into its current use as an adult transitional shelter. Housing for the second and third phases of the rehabilitation program are located about 1 mile away from the Neece building. These additional housing structures were formerly used for military housing and for social services. Homeless individuals are not allowed to congregate outside or in front of the FKOC building. Residents surrounding the Outreach Center are encouraged to contact the shelter with any concerns that may arise from the homeless population that the shelter serves.

The FKOC offers ancillary services as staff resources and budgets permit. The center does not have a transportation program. However, the Salvation Army does periodically provide used bicycles for program participants.

Key West, FL

Zoning

Site: General commercial
To the north: (ocean inlet)
To the east: Single family residential
To the south: Single family residential
To the west: Medium density residential, general commercial



Source: Adapted From City of Key West Zoning Map

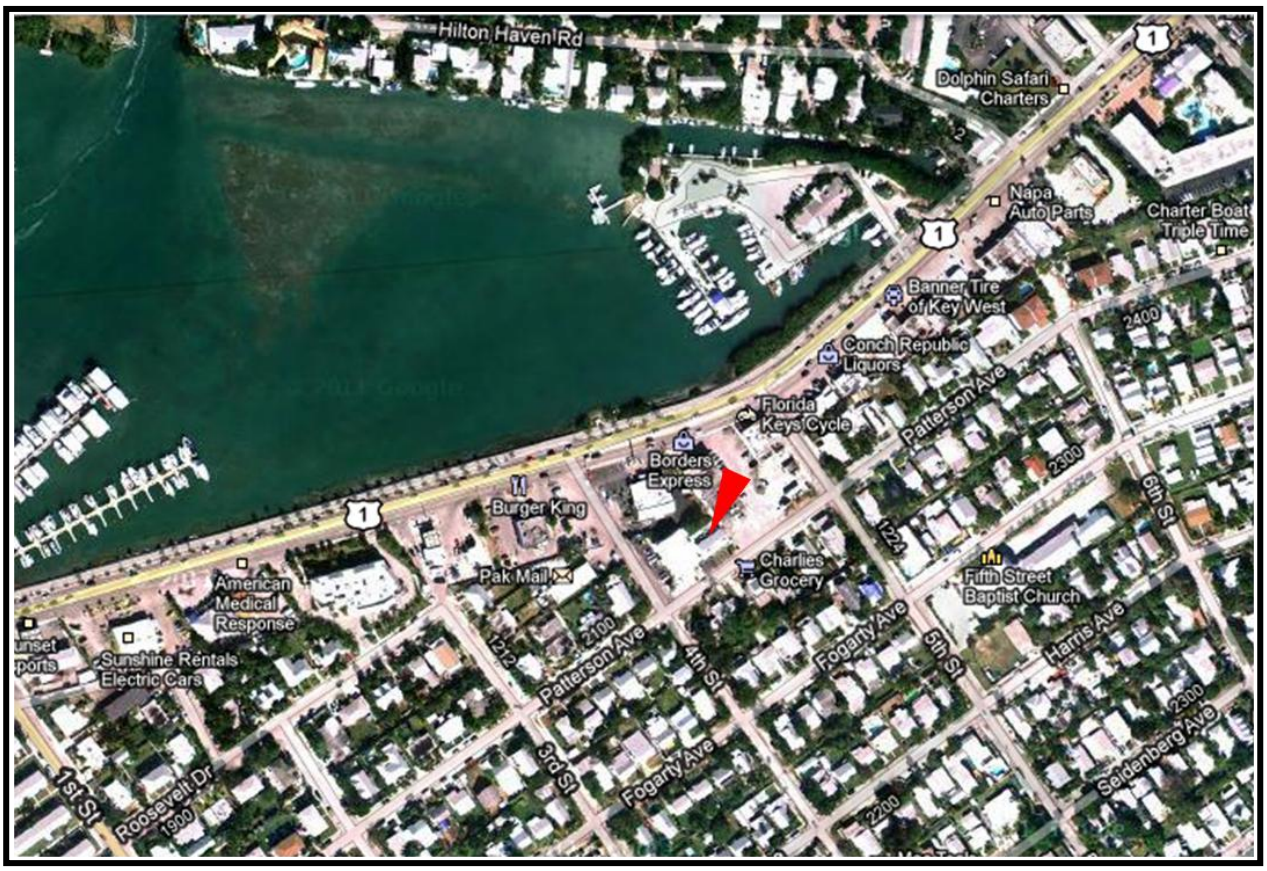
Zoning Legend

C-OW: Conservation - Outstanding Waters of the State
CG: General Commercial
CL: Limited Commercial
MDR-1: Medium Density Residential 1
HMDR: Historic Medium Density Residential
PS: Public Services
SF: Single Family

Key West, FL

Surrounding Land Use Examples

- Mental health care clinic (directly adjacent to shelter)
- Book store
- Bike repair / sales
- Liquor store
- Single family residential
- Church

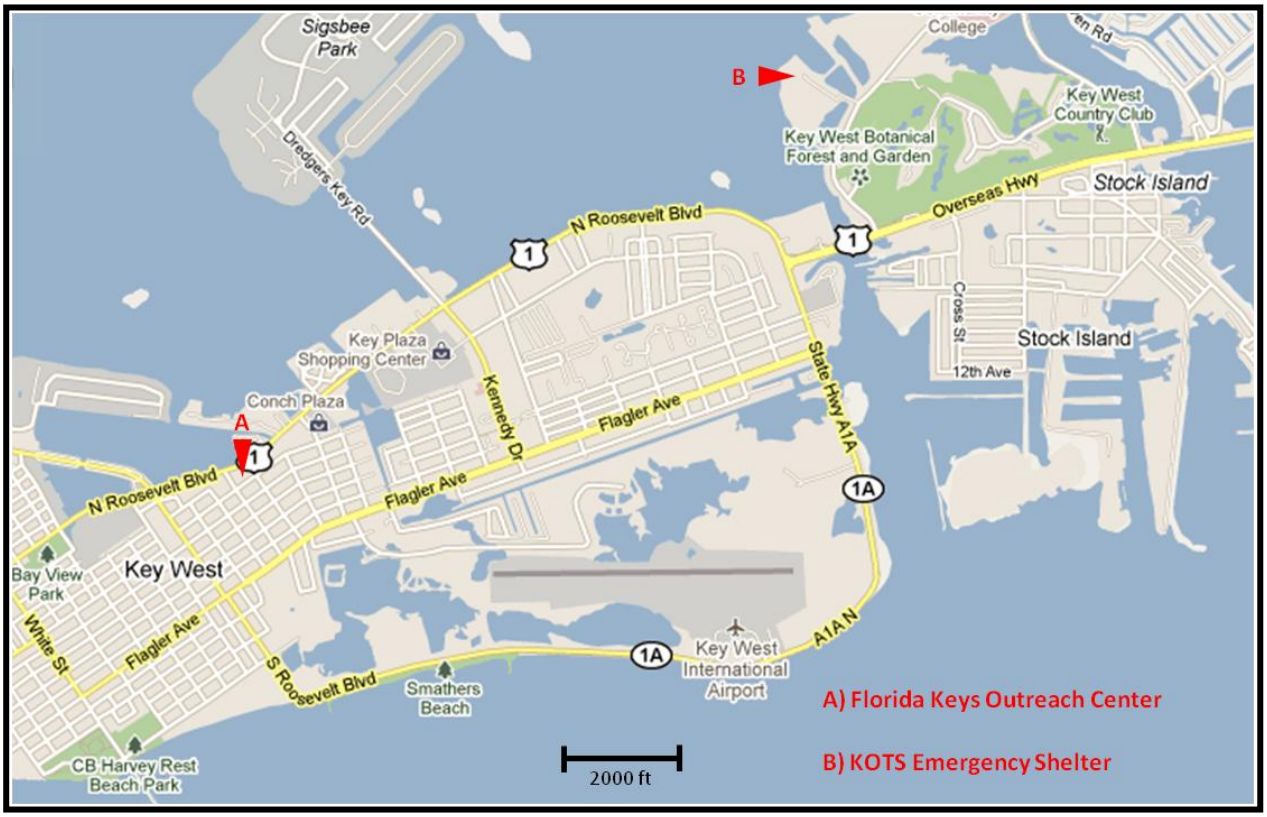


Source: Adapted From Google - Map Data 2011

Key West, FL

Location

Both the outreach center / transitional shelter (A) and the emergency shelter (B) are located in close proximity to the oceanfront. Homeless persons tend to congregate in Bay View and Harvey Parks as well as Smathers Beach. The KOTS emergency shelter is 3.2 miles from Smathers beach, 3.4 miles from Bay View Park and 3.7 miles from Harvey Park.



Source: Adapted From Google – Map Data 2011

San Diego California

Profile

San Diego, CA

City Profile

Population	1,297,618
Median Household Income	$61,962
Per Capita Income*	$32,348
Median Gross Rent	$1,226
Median Gross Rent as % of HH Income	32.1%

Source: U.S. Census, American Community Survey (2005-2009)

Continuum of Care (CoC): CA-601 San Diego (City)

	2010			
	Emergency	**Transitional**	**Unsheltered**	**Total**
Individual homeless persons	500	1,472	2,044	4,016
Persons in households with adults and children	95	410	5	510
Total homeless persons	595	1,882	2,049	4,526
Total General Population of Geography Included in CoC			1,297,618 (same as city population)	
		Sheltered	**Unsheltered**	**Total**
Chronically homeless		300	585	885
Severely mentally ill		703	536	1,239
Chronic substance abuse		885	902	1,787
Veterans		*	*	*
Persons with HIV / AIDS		66	123	189
Victims of domestic abuse		452	133	585
Unaccompanied youth (under 18 years)		40	0	40

*not documented in 2010 Point-in-Time (PIT) count

Source: HUD Homeless Resource Exchange Online Report

San Diego, CA

Citywide centralized homeless intake: no

San Diego currently has a year-round family shelter, which was converted from a motel. Given the current economic climate, the San Diego Housing Commission (SDHC) is looking to develop alternative models, which will lessen reliance upon HUD funding. In working toward this goal, the SDHC has been building a partnership with the local YWCA to explore the development of a new, joint homeless assistance model.

The San Diego Housing Commission is currently negotiating plans to renovate a 9-story historic building in the downtown area, to serve as a year-round shelter for homeless adults. The center would be a "one stop shop" for medical care and other necessary services for the homeless, consolidated into one location. The shelter would have 150 emergency beds and 73 units of permanent supportive housing.

The city of San Diego was included in this report based on its classification as a coastal city, but also because it is one of the few coastal cities with a homeless center that operates exclusively during daytime hours (i.e. no overnight shelter). The report will focus on the day center, but the reader should note that there are other major shelters in San Diego that are not featured in this report. The San Diego Rescue Mission, for example, manages a number of shelter facilities for men, women and children and offers clients an extensive set of services including meals, a substance abuse recovery program, life skills classes, and anger management classes and other services. There is a San Diego chapter of the Salvation Army, which offers emergency shelter among other services.

San Diego, CA

Neil Good Day Center (NGDC)

299 17th Street, San Diego, CA 92101
http://alphaproject.org (parent organization for the NGDC)

Profile

- Shelter type: day center
  Hours: Monday – Friday, 8am – 4pm
- Population served: anyone in need
- Years in current location: since early 1990's
- Screen for sex offenders: no
- Utilize HUD mandated HMIS database system: yes

Available Services

- Showers
- Laundry
- Computer room
- Mail/messages
- Veterans outreach
- Referrals to 12-step recovery programs
- Case management (for a small subset of clients)
- Medical care
  (once per month from outside provider)
- Transportation program (via outside agency)

San Diego, CA

Summary

The Neil Good Day Center is situated on land that is currently owned by CalTrans (the state department of transportation) and leased to the city of San Diego. The city in turn contracts out to a service provider to manage the shelter. The city issues a competitive RFP (request for proposal) to service providers on an annual basis. The NGDC has been managed not only by Alpha Project, but also by the St Vincent De Paul Society during various years. A news report[6] listed the annual budget of the center as $488,841, with a service population of approximately 250 persons per day. Each year, when the city allocates funding for the shelter in the city budget, some city residents typically protest.

The focus of the NGDC is to offer the homeless a safe place to spend time during the day, away from the stresses of the urban environment, including interaction with city police or security staff on private property. The center employs security staff to ensure clients and other staff members feel safe. Although the NGDC does not conduct any type of background check on incoming clients, the center does enforce a three-strikes policy. Clients who engage in violent or disruptive behavior are given three chances before being escorted from the center and prohibited from entering the facility ever again.

The NGDC offers additional services through partner organizations. There is a partner organization that visits the Day Center periodically to offer van transportation to clients.

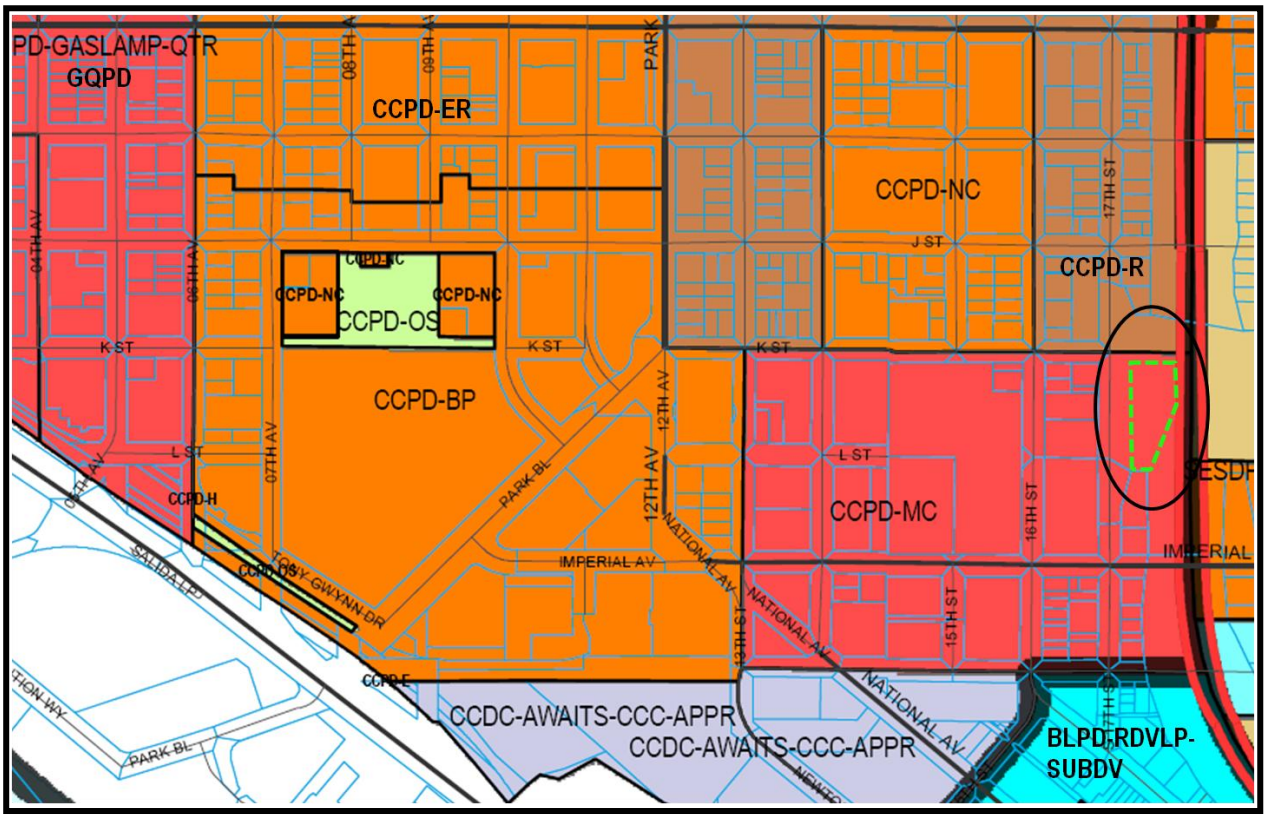
The NGDC manager stated that there is a clear need for day services in the city. However, having a full-time facility with overnight accommodations as well as day services would be preferable to having a facility that offers only day services.

[6] Hall, Matthew T. (May 18, 2011). Neil Good Day Center Gets Funding, Reprieve; San Diego Union-Tribune.

San Diego, CA

Zoning

Site: CCPD-MC
To the north: CCPD-R
To the east: Interstate highway right of way and SESDPD-MF-3000 on the other side of highway
To the south: CCPD-MC and redevelopment zone
To the west: CCPD-MC



Source: Adapted From City of San Diego Zoning Map

(All classifications beginning with "CC" are commercial zones.
Precise zoning classification definitions were not available at the time this report was written.)

San Diego, CA

Surrounding Land Use Examples

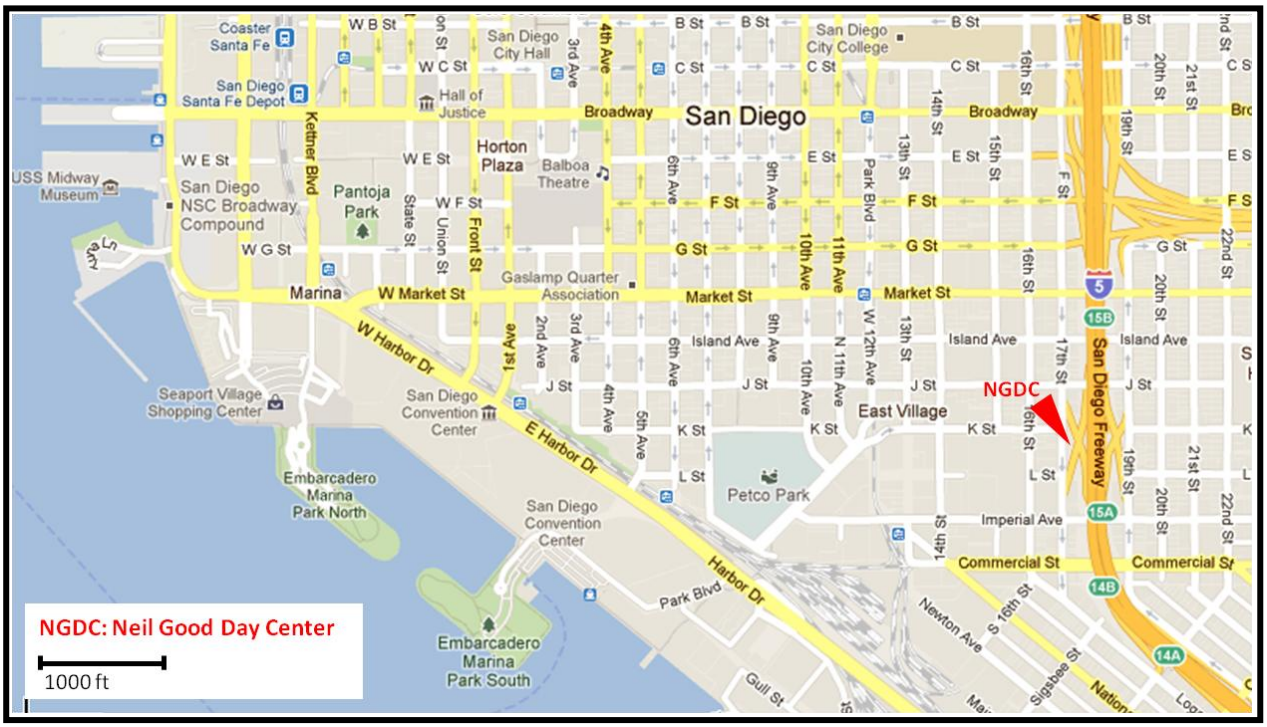
- Multi-family residential (Ballpark Place Apartments) across the street
- Interstate highway 5
- Auto services
- Custom furniture manufacturer
- Tattoo shop
- Liquor store and corner market
- San Diego Metro Transit Facility

Source: Adapted From Google - Map Data 2011

San Diego, CA

Location

The Day Center is situated in the downtown area. It is a 1.2 mile walk from the Day Center to the Convention Center, which is located on the water front.



Source: Adapted From Google - Map Data 2011

National Models

Since 1996, the US Department of Housing and Urban Development (HUD) has used a competitive application process to distribute homeless assistance funds, in an effort to promote the development of the Continuum of Care (CoC) model. According to HUD, every CoC should ideally include a complete spectrum of programs including:

- Homelessness prevention,
- Outreach and assessment,
- Emergency shelter,
- Transitional housing,
- Permanent supportive housing,
- Affordable housing,

as well as supportive services (such as substance abuse treatment, mental health services, independent living skills development, etc.).

In some localities, a continuum of care may exist in name only, with participating organizations engaging in the minimum level of service and mutual cooperation that is necessary in order to obtain continued federal funding.

The localities in the following section of this report have brought an exemplary level of service and an innovative approach to the CoC framework.

Franklin County
Ohio

Profile

Franklin County, OH

County-Wide Comprehensive Model

The homeless prevention and response model in Franklin County, Ohio is well regarded at the national level. For people at risk of homelessness, navigating through what may seem like a random assortment of social services and community resources can be time-consuming, confusing and even daunting. The Community Shelter Board (CSB) of Columbus, Ohio intervenes in this process by linking citizens with a comprehensive set of services that are specific to their needs. CSB acts as a coordinator among existing public and private community service providers throughout Franklin County in order to streamline service provision.[7]

The CSB has implemented a four part model: **Access, Crisis Response, Transition** and **Advocacy**.

Access

CSB seeks to:

- Coordinate between county-wide public and private community service providers
- Connect the homeless and persons at risk of homelessness with appropriate mainstream services quickly and efficiently
- Coordinate and expand client access to employment assistance programs

CSB recognizes that services which support strong families improve the likelihood that children will develop into self-sufficient adults. CSB is implementing a program called the Stable Family Pilot. Goals of this program include:

- Identifying families who are at risk of homelessness and providing them with case management, supportive services and cash assistance, if necessary, in order to keep each family in their existing permanent housing arrangement
- Facilitating homeless children remaining in a stable school situation
- Increasing the capacity of families to appropriately utilize existing community resources

[7] Some information in this section has been extracted directly from published Community Shelter Board resources. The excerpts are used here by permission of the Community Shelter Board.

Crisis Response

CSB has designated the YWCA Family Center as the sole intake point for those in need of homeless crisis assistance. Identifying a single first point of contact produces a number of benefits, it:

1) streamlines the intake process,
2) allows for more comprehensive and consistent documentation of individual cases of homelessness,
3) eliminates the tendency for a homeless individual or family to spend precious time and resources filling out identical applications, one after the next, for separate service agencies, and
4) directs clients to the services that can best meet their needs, thus avoiding unnecessary or duplicative service provision.

The YWCA Family Center is a state-of-the-art facility with case management, childcare, child advocacy services, housing and employment resources, as well as an emergency shelter. The YWCA maintains a strong relationship with each of the existing service providers across the county, in order to direct those experiencing a homeless crisis toward the resources that can best help him/her.

One additional goal of the CSB is to create a collaborative system to better respond to homeless persons who are not seeking out or accessing shelter. Such a system should include a coordinated call and dispatch system, common documentation, and shared outcomes for outreach programs.

Transition

Households and individuals who are cut off from supportive services after a designated maximum service period are at greater risk of falling back into homelessness. Providing supportive services during the transitional period from temporary housing into permanent housing is a key component of a successful homeless rehabilitation program. CSB works with service providers in Franklin County to coordinate provision of short-term supportive services to set clients on a stable path toward self-sufficiency.

Supportive services can include short-term rental assistance, utility deposits, continued mental health counseling, and other interventions. In cases where the client is unable to live independently, due to mental or physical disability, the best service option is to transition the client into permanent supportive housing. CSB intends to work toward expanding the number of units of permanent supportive housing within Franklin County, to meet existing and projected need.

Franklin County, OH

Advocacy

CSB staff meet with local, state, and federal government representatives on an ongoing basis to influence public policy. CSB offers research findings and other information to assist elected officials in developing new programs and policies related to homelessness.

Measuring Outcomes

Data collection and analysis are critical in the process of improving the homeless continuum of care. To the extent possible, the Community Shelter Board of Columbus makes an effort to collect data on program outcomes, rather than simply focusing on the total cost or amount of services expended. In this way, future resources can be dedicated to programs and services that will produce the most significant results. Additionally, in order to access funding from private sources, being able to track and demonstrate progress is essential.

The CSB compiles quarterly reports on system-wide indicators, as well as program-level indicators. The CSB produced a series of specialized reports to evaluate the effectiveness of their recently implemented Stable Families program.

As a result of the Columbus model family homelessness declined 40%; from 1,168 families in 1995 to 696 families in 2004.[8]

[8] Report from Freddie Mac (May, 2006): Promising Strategies to End Family Homelessness.

Hennepin County
Minnesota

Profile

Hennepin County, MN

Hennepin County, MN has implemented a system-wide model that is well regarded at the national level. Some of the key features of the Hennepin County model are: a focus on youth and families; emphasis on rapid-exit from the shelter system / rapid re-housing; and a flexible, results-based, competitive funding mechanism.

The homeless assistance model for Hennepin County begins at the state level. The Minnesota Housing Finance Agency makes homeless program assistance grants9 through the Minnesota Family Homelessness Prevention and Assistance Program (FHPAP). Local jurisdictions apply for funding on a bi-annual basis through a competitive application process. Funding allocations are based on the applicant's track record of generating results, leaving service innovation in the hands of the grantee.

The FHPAP has allowed Hennepin County the financial and administrative flexibility to issue RFPs (Requests for Proposal) to local non-profit service providers, stipulating obligations for performance, rather than precise designs for service provision. Non-profit service providers are tasked with moving families quickly out of the shelter system and into permanent housing.

Hennepin County continues to follow a "shelter all" policy, whereby no family with children will be denied shelter. All families experiencing a housing crisis go through a standardized, comprehensive initial assessment to determine the extent of the family's housing barriers. The roughly 80% of families who experience moderate to moderately serious housing barriers are moved into the Rapid-Exit program. Typically, non-profit contractors are able to find housing for these families in the private market. The non-profit contractors coordinate supportive services for both the family and the landlord for six months, to ensure the family has attained a stable living situation. Families who experience multiple barriers to housing are referred to a separate, more intensive service track.

A number of factors have contributed to the success of the Rapid-Exit program, but two in particular are notable. One factor has been the availability of culturally attuned and well-trained case managers. Many of the case managers who help homeless families may have been single parents, lived in poverty, or even experienced homelessness themselves. The case manager must be able to act as a role model and inspire the client. A second factor has been the non-profit agencies' ability to develop relationships of trust with private-sector landlords.

Over a four year period when the Rapid-Exit program was first being implemented, the total number of "bed nights" that the County purchased, declined by 70%. Between 2007-2008, Hennepin County's Rapid-Exit program helped move more than 1,276 out of the shelter system and into permanent housing. For at least six months or more after their cases were closed, 95

[9] Approximately $14.6 million in state-wide funds are expected to be available for the 2011 – 2013 grant making cycle.

percent of families did not experience a recurrence of homelessness. The cost of the program was an average of approximately $1,100 per family.

The County also provides an array of homeless services specifically for homeless youth. There are four shelters for homeless youth in the County. Just like adults, youth have access to a comprehensive set of social services that are specific to their needs. In addition to other programs, there is a Transition to Independence program, which assists youth who have aged out of the foster care system to find transitional housing, market-rate housing, college dorms, or other appropriate housing situations.

Homeless single adults in the County may apply for shelter at a centralized location in the downtown area or call the shelter coordination team for assistance securing shelter. The three private shelters for single adults hold a coordinated weekly lottery for shelter spaces. There are an additional two major shelters that operate under contract with the city.

Building Relationships with Law Enforcement

The Minneapolis downtown zone has benefited from an innovative street outreach model. St. Stephens Human Services, a local non-profit, employs an outreach team to find homeless individuals on the street and provide those individuals with shelter and services. Street outreach itself is not a new idea. What is different about the St. Stephens outreach model is the unique partnership the outreach team has developed with the Minneapolis Police Department and the City Attorney's Office.

St. Stephens staff has access to the downtown security community's radio communication system. The outreach team can be dispatched in lieu of the police force, in appropriate instances where homeless individuals are involved. This approach has served to shift the response to homelessness from a criminal justice response to a more appropriate social service response. According to police records, between 2008 and 2009, there was a 14 percent reduction in arrests, in the downtown zone, of people with no permanent address.

10-Year Plan to End Homelessness

In 2006, Hennepin County developed Heading Home Hennepin, its 10-year plan to end homelessness. At the same time, the County established the Office to End Homelessness (OEH), a cross-departmental team of Hennepin County and City of Minneapolis employees, in order to coordinate implementation of the plan. The plan, which was developed through an intensive community input process, identifies six major goals and prescribes detailed action steps that must be taken to achieve those goals.

Hennepin County, MN

The six goals of the 10-year plan are:

1) **Prevent Homelessness**
   Keep people in their housing whenever possible and ensure that no one becomes homeless when they leave public institutions such as prisons, hospitals or foster care.

2) **Provide Coordinated Outreach**
   Develop a comprehensive street outreach program to provide housing and resources to people sleeping outside.

3) **Develop Housing Opportunities**
   Create housing opportunities for all individuals and families in need.

4) **Improve Service Delivery**
   Increase access to services so people can obtain and remain in housing.

5) **Build Capacity for Self-Support**
   Assist individuals and families in building their personal income through employment, education, and benefits.

6) **Implement System Improvements**
   Enhance the efficiency and effectiveness of service systems already in place.

Conclusions

In terms of number of facilities, the level of assistance offered to the homeless population is similar among East Coast resort cities, including Virginia Beach. The majority of profiled oceanfront cities offer essentially one shelter for each type of demographic group: one shelter for single adults, one shelter for families (or women with children), and one shelter for youth. An exception is Ocean City, MD where there is only one shelter serving the tri-county homeless population. However, the Ocean City shelter serves each of these homeless demographic groups within the same shelter. In terms of the number of homeless individuals who can find overnight accommodation within the shelter system, the capacity of each city varies.

On the high end, Broward County Partnership in Florida and Union Mission in Norfolk each can accommodate 200 or more persons per night. On the lower end of the spectrum, Diakonia shelter in Ocean City, MD can accommodate between 35 – 45 persons per night. In Virginia Beach, JCOC provides 50 beds for overnight emergency shelter that are available year-round. From October through April, a minimum of 62 additional beds are available through a consortium of faith-based community facilities within Virginia Beach.

Services that were common to the majority of shelters profiled in this report are basic necessities: bathrooms, showers, laundry, meals, limited to full-time case management, limited-term medical care through an outside agency, and substance abuse counseling. A common constraint among most of the shelters was the reality of operating with small budgets and limited staff. As such, most shelters offer ancillary services on an ad hoc basis, services which expand or contract in relation to current staff and funding resources. The most common ancillary services were employment assistance, life-skills training and transportation assistance (bus passes and bicycles).

Sources

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Individual shelter websites (listed in shelter profiles)

Maps

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Salt Lake County Collective Impact on Homelessness
Endorsement of Shared Vision and Outcomes

SALT LAKE COUNTY

RESOLUTION of the COLLECTIVE IMPACT ON HOMELESSNESS STEERING COMMITTEE

WHEREAS, we have a common vision to provide housing and services as quickly as possible to those who are at risk for homelessness or homeless;

WHEREAS, we want everyone in our community to have a safe place to live;

WHEREAS, we want our homeless housing and services solutions to be system-oriented rather than agency oriented, and to promote engagement rather than enablement;

WHEREAS, we use our collective expertise, resources and data to continuously improve our homeless housing and services systems so that they are safe, integrated, efficient, and focused on self-sufficiency,

We agree as follows:

AGREEMENT 1: PURPOSE OF SHARED OUTCOMES

1.1. The Shared Outcomes represent the consensus of the Salt Lake County Collective Impact Steering Committee and serve as a reference and tool for current and future decision makers at the private, local, state, and federal level.

1.2. The intent of the Shared Outcomes is to guide the alignment of efforts and resources to ensure that the services we provide and the solutions we propose to solve the complex issue of homelessness best address our collective community needs.

1.3. The Shared Outcomes signify support for a redesign of the homeless housing and service system that can only be carried out in partnership with the State of Utah, local governments, service providers, businesses, community leaders, private funders and representatives of individuals who are homeless.

1.4. We agree to work diligently and in good faith to realize the Shared Outcomes – collectively and within our respective organizations and jurisdictions.

1.5. We recognize that reaching the Shared Outcomes will require further rigorous analysis and public review of community needs by other state, local, or private decision-making processes.

AGREEMENT 2: ACTIONS TO SUPPORT THE SHARED OUTCOMES

2.1. To achieve the Shared Outcomes, and in recognition of the inherent challenges in doing so across a large number of entities, perspectives, voices and jurisdictions, we agree:

2.1.1. To consider options for continued multi-jurisdictional coordination, collaboration, and communication, including a publically accountable governance structure, to facilitate achieving the Shared Outcomes and adapting them as informed by changing circumstances and data.

2.1.2. To work together to encourage other community members and leaders to align their efforts and resources with the Shared Outcomes, including but not limited to funding and authority necessary to prepare studies and perform work.

2.1.3. To build upon public engagement efforts and to maintain public transparency.

2.1.4. That decisions founded on the Shared Outcomes will be consensus-based and will not supersede the authority of any existing federal, state, and local jurisdictions.

AGREEMENT 3: SHARED OUTCOMES

We recommend these 14 strategically linked outcomes in four key areas of focus as the current priorities for our community:

Outcomes for County Residents Experiencing or At Risk for Homelessness:

1. We recognize and meet the distinct needs of these at risk and homeless populations:

    - Families with children
    - Transitional-aged youth
    - Single men and women
    - Veterans
    - Domestic violence victims
    - Individuals with behavioral health disorders (including mental health and substance use disorders)
    - Individuals who are medically frail/terminally ill
    - Individuals exiting prison or jail
    - Unsheltered homeless

2. We successfully divert individuals and families from emergency shelter whenever possible.
3. We meet the basic needs of those in crisis.
4. We provide individuals and families with stabilization services when they need them.

Outcomes for the County's Homeless Service and Housing Systems:

5. Salt Lake County's homelessness rates decrease over time.
6. Coordinated entry and a common, consistent assessment tool provide appropriate, timely access to services across the system. There is no 'wrong door.'
7. Individuals who are homeless have a relationship with a caseworker or similar individualized support.
8. Individuals who exit homelessness will be employed and/or have increased income/financial stability.

Outcomes to Prevent Homelessness:

9. Salt Lake County's housing supply meets the demand and needs of all residents.
10. People have access to the specific services and supports they need to avoid homelessness.
11. Children, adolescents and adolescents transitioning to adulthood do not experience homelessness.
12. If individuals and families become homeless, we prevent it from happening again.

Outcomes for Communities and Public Spaces:

13. Neighborhoods that host homeless service facilities are welcoming and safe for all who live, visit, work, recreate, receive services, or do business there.
14. Neighborhoods offering services also offer access to employment, job training, and positive activities during the day.

KPMG

cutting through complexity

Public Safety & Security Benchmarking Study

An Analysis of Leading Practices and Challenges Nationwide

November 2015

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Att. D

Background and Methodology

In July 2015, the Downtown Denver Partnership (DDP) and Downtown Denver Business Improvement District (BID) began working with downtown stakeholders and a team from KPMG to develop a Security Action Plan, with the ultimate goal of helping to improve the perception and reality of safety in the downtown Denver area.

KPMG assisted the DDP by gathering feedback from the many downtown stakeholders, reviewing policy, observing behaviors, researching leading practices, and drawing upon the team's law enforcement and security backgrounds to develop the Security Action Plan, comprised of 60 projects and 240 actionable tasks to be carried out over the next 24 months.

To understand the leading practices in place across the country, the team worked with the International Downtown Association (IDA) to solicit input from other cities. Eight cities provided valuable input, which are summarized in this document.

Responding Entities

Eight cities contributed data to this effort as summarized in the table below. Responding cities varied across geographic size, overall budget, security personnel, and population.

City	Organization Type	Budget	Security Personnel	Population (2013)
Houston	DMD	Over $2.5M	0	2,196,000
Phoenix	BID	Over $2.5M	0	1,513,000
San Antonio	PID	Over $2.5M	4	1,409,000
San Diego	Property-Based BID	Over $2.5M	24*	1,356,000
Denver	BID	Over $2.5M	1	649,000
Oklahoma City	BID	Over $2.5M	2	610,000
New Orleans	BID	Over $2.5M	21	379,000
Salt Lake City	BID	Over $2.5M	0	191,000

* Note: security personnel also provide hospitality services.

Safety and Security Concerns

Respondents indicated that their stakeholders voice concerns around a number of issues that impact real and perceived safety. Concerns that were expressed by multiple cities include the following:

- Addressing the issues surrounding **panhandling and homelessness,** specifically as they relate to **mental health issues** were common in each of the eight cities surveyed.
- **Drug dealing and consumption** to include synthetic marijuana and alcohol was reported as a problem particularly related to the homeless population.
- **Lack of foot patrols and/or a security presence** were commonly recognized as a concern held by visitors, stakeholders, and tenants.
- **Lack of enforcement of laws and ordinance** was a prevalent issue, particularly as it relates to sitting and lying on public ways, panhandling and other grey areas such as synthetic marijuana use.

Safety and Security Leading Practices

The practices indicated below have yielded positive results for the cities reporting such information and may be opportunities for other cities to consider implementing. If implemented, these standards should be field tested and researched to help ensure that they align with each entity's needs, considering unique qualities of each community and the commonalities that may be present across organizations.

One leading practice that is transferable across the spectrum of all associations is local partnerships. Businesses, first responders, governments, and local communities can all benefit from the sharing of information and the joint promotion of safety and security. Other leading practices are shown below by city:

Denver: Off-duty police officer patrol program, community re-visioning effort, security action plan development.

New Orleans: Non-commissioned force of safety professionals and off-duty police presence, crime statistics monitored monthly, quarterly, and annually. Escorted walks with safety professionals, crime reporting app in evaluation stage.

Oklahoma City: Use of off-duty officers, private security company patrol efforts in underground tunnel system, inclusion of police department in monthly board meetings.

Phoenix: Work with local non-profits to provide services to homeless.

San Antonio: Previously worked with an urban revitalization and economic consultant to conduct a safety and security assessment. Outreach Ambassador Program to identify chronic panhandlers and in-need and at-risk homeless, partnering with off duty police officers in FY'16.

Salt Lake City: Work actively with city and police department to address safety and drug issues with a focus on homeless services; lobbied for increased funding and staffing for police personnel and private security for homeless services, currently conducting a study to evaluate moving or reconfiguring the current homeless shelter.

San Diego: Safety patrols, partnership with police department, integration of local outreach workers, and escorted walking services.

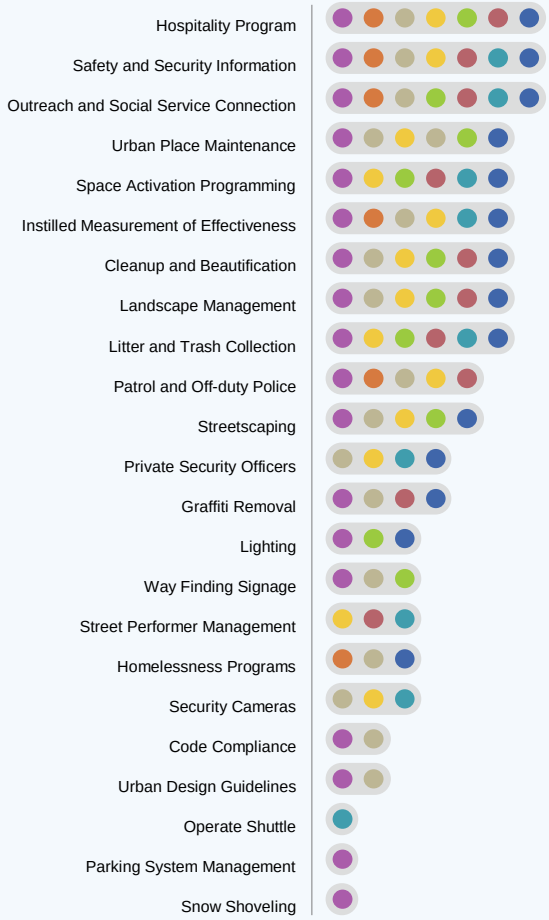
Trends and Takeaways

Community safety challenges can be presented in both real and perceived safety and security concerns, ranging from property and violent crime to the presence of unruly individuals or poorly maintained city infrastructure or building façades. These multifaceted challenges demand multidimensional preventative measures, as communities seek to prioritize crime deterrence strategies, establish methodologies to predict future patterns of crime, navigate local agency and organizational politics, and estimate the costs and benefits of such strategies.

Respondents indicated multiple strategies for addressing safety and security challenges, but the majority did not identify having a cohesive, up-to-date security plan. Many promising practices are in place across the nation, but the next stage in helping to shift the mindset on safety and security involves a collective effort between downtown groups–residents, business owners, property managers, tourists, public safety officers, and many others. Experimentation with apps and other tracking opportunities have shown to be user friendly, modern alternatives to a community watch and while still in field testing status, have provided promising results.

Service Offerings

Core service offerings center around the "clean and safe" mission of many of the responding participants. Hospitality, safety and security information, and social service outreach were the most consistently provided services.



Partnerships

Community, business, and local first responder partnerships and communication efforts act as a force multiplier for safety and security efforts, although respondents indicated varying levels of sophistication and scope. Responding cities identified the following formal or informal partnerships in delivering their services.

Measures of Success

Six of the eight responding cities reported a formalized methodology in measuring the success of their programs and to assist in the justification of continued or expanded funding. Other methods of measurement are listed below by city.

- **San Diego:** San Diego uses the Eponic Network data tracking system to monitor and optimize the performance of Clean & Safe Teams, Hospitality Ambassadors, Maintenance, and Homeless Outreach teams and share these statistics with the community.
- **Salt Lake City:** Salt Lake City conducts regular board and committee meetings.
- **Oklahoma City**, **Houston** & **Denver:** Each city has conducted surveys with the local community and their partners in order to understand their opportunities for growth.
- **New Orleans:** New Orleans evaluates annual crime statistics.

KPMG's Justice and Security Advisory Team

Our Justice & Security (J&S) Advisory team understands the balance organizations must strike between protecting people, places, property, and products from security threats and vulnerabilities while enabling optimal customer service and operating performance. We offer a suite of safety and security advisory capabilities that assist our clients in improving and coordinating organizational performance to achieve a more efficient and effective state of operation.

Our experience spans a diverse base of industry sectors and risk mitigation scenarios, allowing us to leverage our equally diverse skillsets to help your organization identify and mitigate its risks while helping drive corporate performance and shareholder value. Additionally, we draw upon KPMG's worldwide reach, allowing our clients to gain the benefits of global industry best practices implemented by local teams of experienced, passionate professionals.

For more information on KPMG's Justice & Security team, please contact the team members listed below.

This study was conducted in partnership with the Downtown Denver Partnership, Downtown Denver Business Improvement District and the International Downtown Association.

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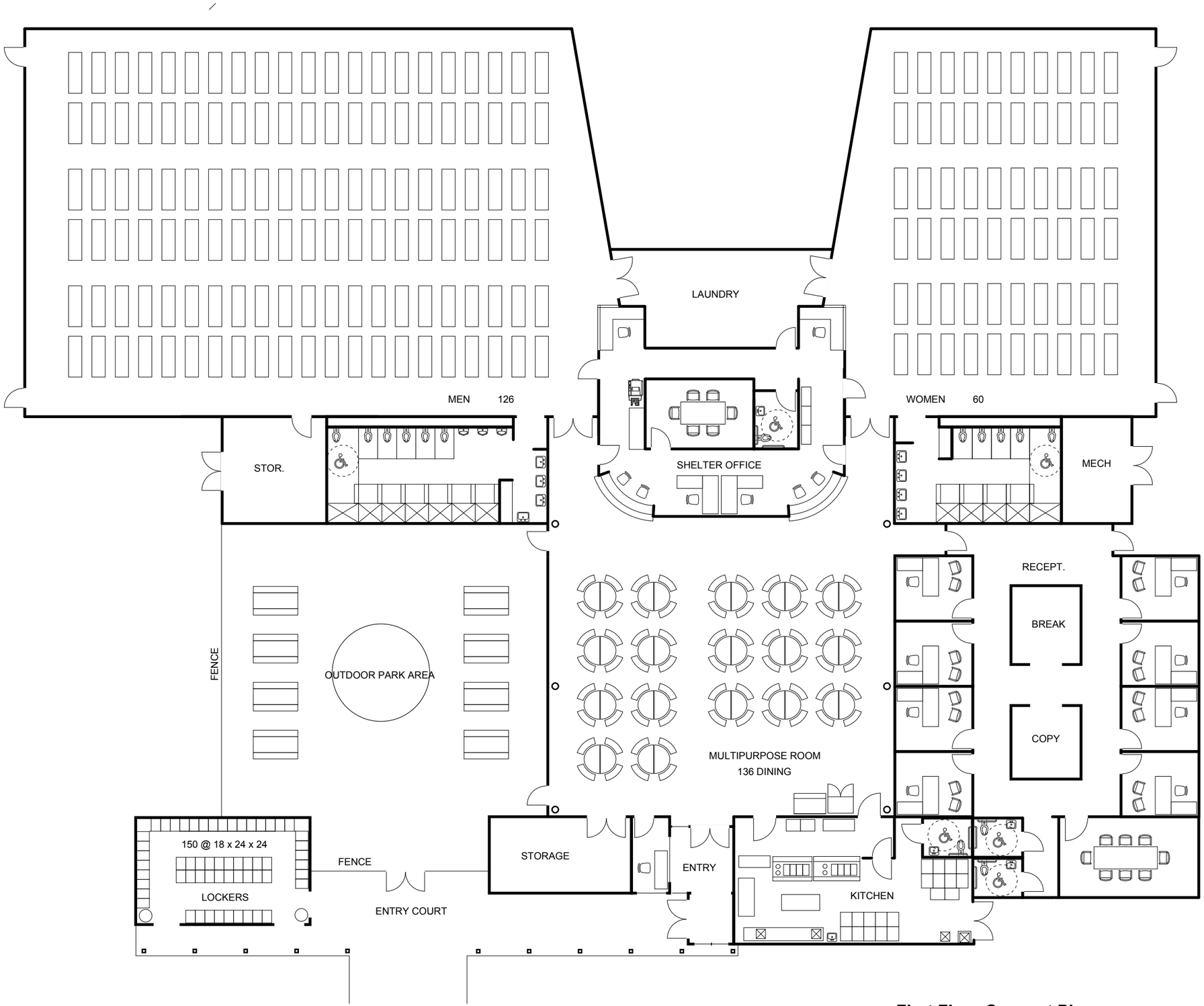
Att. E



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Emergency Shelter

Portland, Maine

First Floor Concept Plan

WINTON SCOTT ARCHITECTS
5 Milk Street
Portland, Maine 04101

Scale: 1" = 16'-0"

When Printed On 11 x 17

A 1

January 18, 2017

Memorandum
Planning and Urban Development Department
Planning Division

To: Chair Boepple and Members of the Portland Planning Board
From: Matthew Grooms, Planner
Date: April 21, 2017
Re: 510 Stevens Avenue rezone
CBLs: 12 I 001001, 005
Meeting Date: April 25, 2017

I. INTRODUCTION

Carroll Associates, on behalf of Stephen and Roberta Cope, is proposing a zoning map amendment for the property at 510 Stevens Avenue, located at the northwest corner of the Stevens Avenue and Hartley Street intersection in Deering Center. The property is currently zoned Residential R-5; the applicant proposes to rezone it to Neighborhood Business B-1b in line with properties located to the south along the west side of Stevens Avenue. The applicant argues that this property forms a logical extension of the Deering Center commercial district and yet appropriate development opportunities at this location are currently restricted by the Residential R-5 zone. The property owners intend to develop a new mixed-use project with commercial uses on the ground floor and residential units above. This site would be developed in conjunction with the previously approved project at 502 Stevens Avenue (2016-290) and would share circulation infrastructure and utility connections.

Figure 1: Existing Single-Family Structure

Figure 2: Aerial View of Property

A legal ad for the Board workshop was posted on the city's web page and appeared in the *Portland Press Herald* on April 17th and April 18th, 2017. Notices were also sent to 183 property owners within 500 feet of the site.

II. BACKGROUND

The proposed project site is located on Stevens Avenue in close proximity to Lincoln Middle School at the intersection of Stevens Avenue and Hartley Street. At present, the site is occupied by a single-family structure. This property is located within a transitional neighborhood, with a mixture of retail and service uses located to the south

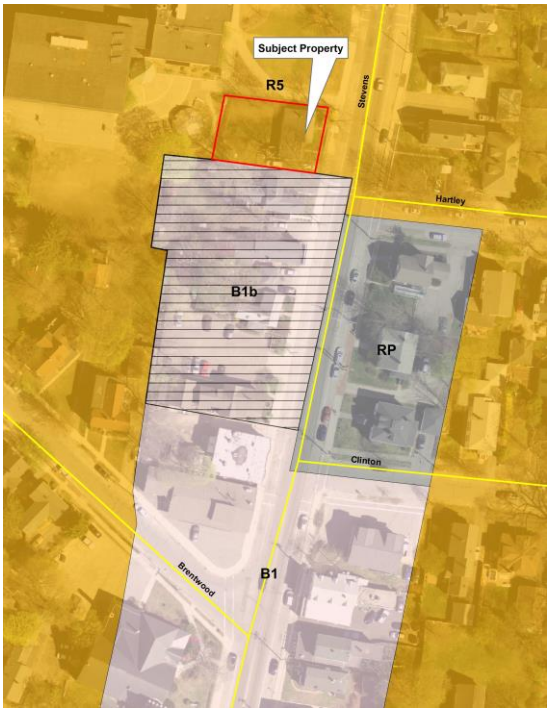

Figure 3: Existing Zoning

of the subject site along Stevens Avenue, Lincoln Middle School is located immediately to the west and north of this site, and the surrounding area away from Stevens Avenue is predominantly single family residential. The project site is located at the northern edge of the Deering Center commercial district.

II. PROPOSED MAP AMENDMENT

Current Zoning: R-5 (Residential)
Proposed Zoning: B-1b (Community Business)
Current Uses: Single-Family Residential
Proposed Uses: Mixed-use with first floor commercial and upper floor residential
Parcel Area: 6,400 SF
Area to be Rezoned: 6,400 SF

III. ZONING ANALYSIS

The applicant is proposing to develop a mixed-use project at this location consisting of a ground floor commercial space with residential units on the upper floors. The underlying zone precludes this plan, however, on at least two counts. The existing R-5 zoning permits the development of either single-family or duplex development and does not accommodate standard multi-family housing developments. Similarly, commercial uses are prohibited within the R-5 zone. For this reason, the applicant has requested a rezoning to B-1b, which would extend the current contiguous area zoned B-1b located immediately to the south of this parcel north. This zone permits multi-family dwelling units above the first floor where there is a commercial unit on the first floor.

City staff considers the Neighborhood Business B-1b zone to be an appropriate map amendment, as this parcel is located adjacent to the B-1b district and the stated proposal for development is congruous with the B-1b purpose statement. Per Section 14-161,

> *The purpose of the B-1b neighborhood business zone is to provide appropriate opportunities for the establishment of small-scale ground floor commercial uses to serve a local market, while preserving residential uses and character above the ground floor of structures.*

Further, in regards to location, it states:

> *Suitable locations for this zone may include street intersections, arterial streets, and sites with existing or traditional neighborhood retail and service uses.*

The applicant intends to develop a small-scale mixed-use project located at the northern edge of the Deering Center commercial district, an area which has historically served as the traditional retail and service center for the Deering Center neighborhood. At present, along the west side of Stevens Avenue, two single-family structures remain between the existing commercial district and Lincoln Middle School, which forms a natural terminus for the commercial district. The property located immediately to the south of this property, 502 Stevens Avenue, was recently approved for a Level III Site Plan and Subdivision plan under which that applicant is proposing to demolish the existing structure and develop a small-scale mixed-use project similar in scope to what is being considered by the property owners at 510 Stevens Avenue. Approval of this map amendment would further define the Deering Center commercial district and would allow for developments complimentary to the surrounding context.

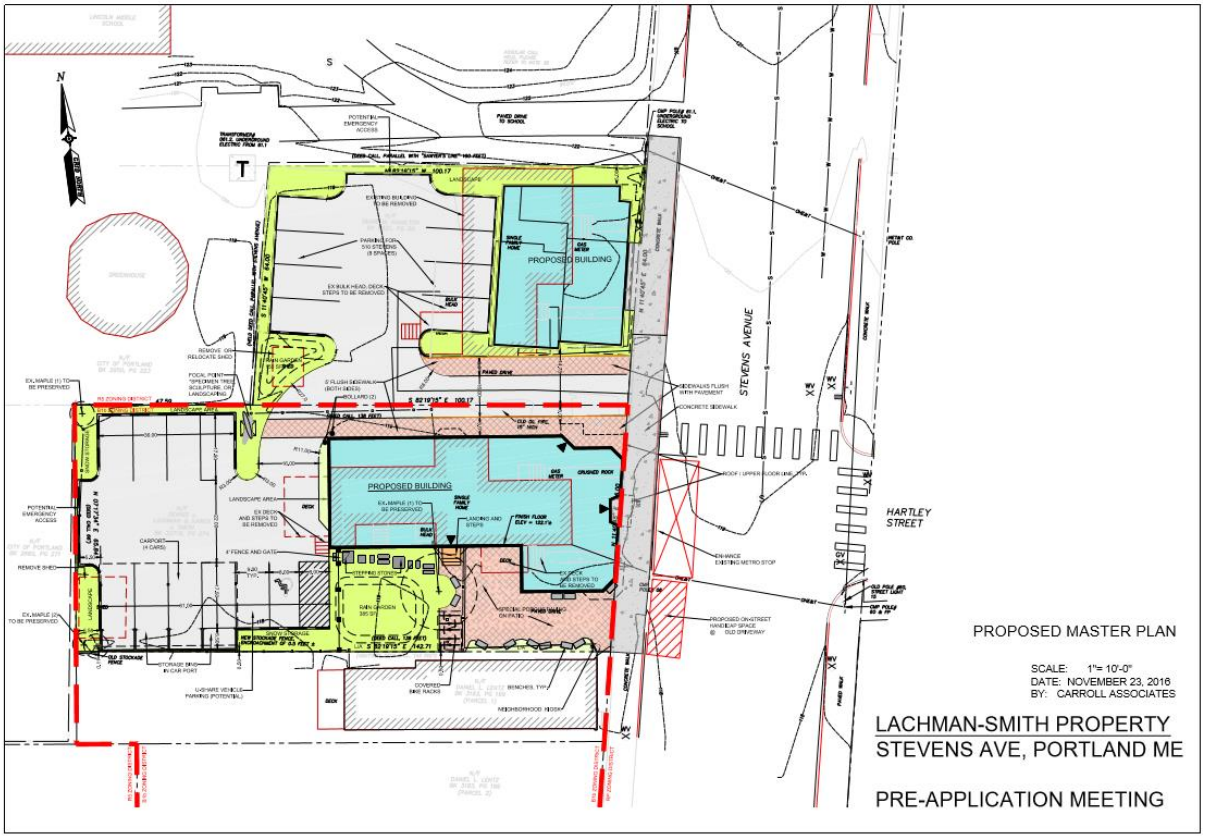

Figure 4: Draft Site Plan

	R-5 Residential	**B-1b**
Purpose	To provide appropriate areas of the city for medium-density residential development characterized by single-family and low-intensity multifamily dwellings on individual lots; to ensure the stability of established medium-density neighborhoods by controlling residential conversions; and to provide for planned residential unit development on substantially sized parcels. Such PRUD development shall respond to the physical qualities of a site and complement the scale, character and style of the surrounding neighborhood	The purpose of the B-1b neighborhood business zone is to provide appropriate opportunities for the establishment of small-scale ground floor commercial uses to serve a local market, while preserving residential uses and character above the ground floor of structures. The zone also provides the opportunity for mixed use and high residential density in on peninsula locations. Building additions are encouraged but not required to meet the maximum setbacks of 14-165(c)(3). Suitable locations for this zone may include street intersections, arterial streets, and sites with existing or traditional neighborhood retail and service uses.

Permitted Uses
The R-5 zone explicitly encourages medium-density housing, and permits either single-family or duplex housing types by right. The R-5 zone does not permit most non-residential uses, and commercial uses are excluded entirely. Some institutional uses are conditionally permitted.

The Neighborhood Business B-1b zone, is a limited-intensity business district intended to foster primarily small-scale traditional development patterns with ground floor commercial and upper-floor residential uses. A host of commercial, institutional, and other establishments are expressly permitted, although trip generation is considered as well, with the intent of prohibiting uses with high trip generation.

Table 2: Permitted and Conditional Uses

			R-5	B-1b
Permitted	Residential	Single-family and two family dwellings	x	x (Permitted if allowable in abutting residential zone)
		Multi-family dwellings	x	
		Planned residential unit development	x	
		Handicapped family unit	x	
		Single-family, multiple component manufactured housing	x	
		Single-family, single component manufactured housing	x	
		Multi-family over ground floor commercial		x
		Combined living/working spaces		x
	Business	Professional, business and general offices		x
		Business services		x
		Personal services		x
		Offices of building tradesman		x
		Retail establishments		x
		Beverage dealers		x
		Studios for artists, photographers and craftspeople		x
		Restaurants		x
	Institutional	Places of religious assembly		x
		Municipal offices	x	x
		Elementary, middle and secondary schools		x
		Nursery schools and kindergarten		x
		Clinics		x
	Other	Lodging houses		x
		Utility substations		x
		Day care facilities or babysitting services		x
		Bed and breakfast		x
		Hostels		x
		Neighborhood center		x
		Wind energy systems	x	x
		Parks and other active and passive noncommercial recreation spaces	x	
		Home occupation businesses	x	
		Municipal uses	x	
		Special needs independent living units	x	
Conditional	Residential	Sheltered care group homes	x	
		Alteration of structure for residential purposes existing and not in residential use as of January 1, 1984	x	
		Conversion of existing two-family or multi-family dwelling to lodging house	x	
		Use of space existing as of September 3, 2008 to accommodate additional dwelling units	x	
	Institutional	Elementary, middle and secondary schools	x	
		Long-term and extended care facilities	x	
		Intermediate care facility for thirteen (13) or more persons	x	
		Places of assembly	x	
		Hospital	x	
		College, university or trade school	x	
	Other	Off-street parking	x	
		Utility substation	x	
		Daycare facilities or home babysitting services	x	
		Temporary wind anemometer towers	x	x
		Wind energy systems	x	x

Dimensional Requirements and Form
The R-5 zoning district provides certain density controls – minimum area per dwelling unit, maximum lot coverages and minimum lot widths,– that limit the buildout of any given parcel and serve to facilitate the development of medium density housing districts. The R-5's basic control for density, the minimum requirement of 3,000 SF of lot area per dwelling unit would limit the residential buildout of the parcel for a two family and a minimum land area of 9,000 SF per unit for a multiplex. The R-5 also poses setback requirements of between 8 and 20 feet, which guarantees that buildings will be separated both from each other and the street.

The city's business zones generally encourage a more dense, urban form. The B-1b zone has no lot coverage limits and the setbacks are considerably smaller. Further, the B-1b allows one dwelling unit for each 435 SF of lot area, or nearly seven times the number of units as allowed under the R-5.

Table 3: Dimensional Requirements

	R-5[1]	B-1b
Min. Lot Size	6,000 SF+ (depending on use)	None; 20,000 SF for schools and 10,000 SF for places of assembly
Min. Lot Area per D.U.	3,000 SF for PRUD 4,800 SF for special needs independent living 3,600 SF for special needs independent living w/ 250 feet of frontage 9,000 SF for Multiplex	435 SF on peninsula or; Lot area of nearest residential zone, except 1,000 SF for multi-family dwellings above first floor
Min. Street Frontage	50 ft.	20 ft.
Min. Lot Width	90 ft. for Multiplex 60 ft. for other uses	None
Min. Front Yard	20 ft.	None
Max. Front yard		10 ft., or the maximum front yard setback shall not exceed the average depth of nearest developed lots if that average depth is less than 10 ft.
Min. Rear Yard	20 ft. (for structures >100SF)	None; 20 ft. if abutting residential zone or use
Min. Side Yard	8 – 14 ft. (based on # of stories)	None; 10 ft. if abutting residential zone or use
Max. Structure Height	35 ft.	35 ft., except where abutting R-6, where max. height shall be the max. height of R-6.
Max. Floor Area		Total maximum first floor area for non-residential uses per structure: 10,000 SF or; Total maximum floor area per retail establishment: 5,000 SF
Max. Lot Coverage	40%	None
Max. Impervious Surface		90%

[1] Additional dimensional requirements apply for small residential lot development, bed and breakfasts, places of assembly

IV. POLICY ANALYSIS

The applicant argues in their cover letter that this site represents that natural terminus of the Deering Center commercial district as to the south of this parcel, properties are zoned Neighborhood Business B-1b and to the north is Lincoln Middle School. According to the applicant's representatives, appropriate development of this site is currently restricted by the Residential R-5 zone. They consider their conceived mixed-use project to be an enhancement to the existing neighborhood and appropriately situated to bolster the existing commercial district.

Generally, the city's housing plan, *Housing: Sustaining Portland's Future,* includes numerous policies which support the development of mixed-used buildings with neighborhood commercial, including the following,

- *Create new housing to support Portland as an employment center and to achieve an improved balance between jobs and housing*
- *Encourage neighborhood business centers throughout the city to reduce dependence on the car and to make neighborhood life without a car more practical*
- *Ensure that an adequate supply of housing is available to meet the needs, preferences, and financial capabilities of all Portland households, now and in the future*
    - *Ensure the construction of a diverse mix of housing types that offers a continuum of options across all income levels, which are both renter and owner-occupied;*
- *Maintain and enhance the livability of Portland's neighborhoods as the city grows and evolves through careful land use regulation, design, and public participation that respects neighborhood integrity*
    - *Support Portland's livable neighborhoods by encouraging a mix of uses that provide goods and services needed and are within walking distance of most residents*

However, it should also be noted that *Housing: Sustaining Portland's Future* also advises against commercial encroachment with policies such as the following,

- *While accommodating needed services and facilities, protect the stability of Portland residential neighborhoods from excessive encroachment by inappropriately scaled and obtrusive commercial, institutional, governmental, and other non-residential uses*

As discussed by the applicant, the proposed development is small in scale and well-integrated with the recently approved mixed-use project at 502 Stevens Avenue, placing less pressure on existing infrastructure and complimenting Deering Center's neighborhood center character. The proposed ground-floor commercial component will likewise provide additional services and or goods to nearby residents. This project would increase local housing density and provide alternative housing opportunities within a predominantly single-family neighborhood.

V. PUBLIC COMMENT/NEIGBHORHOOD MEETING

As of the writing of this memo, the Planning Division has received two public comments that are included in the packet. The Neighborhood meeting was held on April 11, 2017. The neighborhood packet and additional material is included as an attachment. At the neighborhood meeting, attendees asked questions about and raised concerns regarding traffic and on-street parking, in line with the two public comments received by the Planning Division. Other attendees stated that they enjoyed the walkability of this neighborhood and appreciated the potential for another retail business within easy walking distance.

VI. NEXT STEPS

- Provide initial feedback on zone change request
- Schedule a public hearing or a second workshop

VII. ATTACHMENTS

1. Documents
    a. Cover Letter

b. Zoning Map Amendment Application
c. Right, Title & Interest
d. Neighborhood Meeting Certification
e. Neighborhood Meeting Notice
f. Neighborhood Meeting Sign-In Sheet
g. Neighborhood Meeting Minutes

2. Applicant's Plans
    a. Vicinity and Abutter Map
    b. Existing Zoning Map
    c. Proposed Zoning Map
    d. Site Master Plan

3. Public Comment
    a. Caroline and Mark Sprague – 4/4/2017
    b. Nancy Polito – 4/18/2017

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

February 24, 2017

Ms. Barbara Barhydt
City of Portland Planning Authority
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: 510 Stevens Avenue- Requested Zone Map Change

Dear Barbara,

On behalf of Stephen E and Roberta A. Bobbie Cope, we are pleased to submit this Application for Zone Map Change associated with their property at 510 Stevens Avenue. We are proposing that the B1b Zone Boundary be extended along Stevens Avenue to include this property.

This property represents the northern end of the Deering Center Neighborhood between Lincoln Middle School and Brentwood Street. The B1b Zone extends to the south of this parcel, so while it is within the Deering Center neighborhood physically, its current R5 zoning restricts the ability to develop the site in a way that might enhance the surrounding neighborhood. As you are aware, the property directly adjacent to this is currently undergoing Site Plan Review for its redevelopment into a mixed-use project, and a key factor in its design is the ability to share the driveway with this property. In fact, both properties have been designed to work seamlessly with each other with respect to use, shared circulation and utility connections. This is only possible with the requested Map Change, allowing the property at 510 Stevens to be redeveloped in a way that provides an anchor for the neighborhood to the north and provide a respectful neighbor to Lincoln Middle School.

Attached and made part of this Application are the signed Application form, Application Fee, and supporting documents and exhibits. We welcome the opportunity to begin a dialog with the Planning Staff and Planning Board on this project, and look forward to working closely with your office as this proposal moves forward. Please feel free to contact me to discuss any questions or concerns you may have regarding the attached application materials.

Sincerely,
CARROLL ASSOCIATES

Patrick J. Carroll
Principal

Enc.

Cc: Adam Cope

Zoning Map, Text Amendment, Contract or Conditional Rezoning Application Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the review of requests for zoning map amendments, zoning text amendments and contract or conditional re-zoning. The Division also coordinates site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Zone Change.

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	510 Stevens Avenue
Proposed Development Address:	510 Stevens Avenue
Project Description:	New mixed use building
Chart/Block/Lot:	Map 16NE, Lot 135-E008
Right, Title or Interest (*Please identify the status of the applicant's right, title, or interest in the subject property – for example a deed, option or contract to purchase or lease the subject property)* See attached property deed	
Existing Use (*Describe the existing use of the subject property)* Single family residential	
Current Zoning Designation: R5 Zoning District	
Proposed Use of the Property (*Please describe the proposed use of the subject property. If construction or development is proposed, please describe any changes to the physical condition of the property)* New mixed use (residential and retail) building with parking via shared driveway	
Vicinity Map (*Attach a map showing the subject parcel and abutting parcels, labeled as to ownership and/or current use)*	
Site Plan (*On a separate sheet, please provide a site plan of the property showing existing and proposed improvements, including such features as buildings, parking, driveways, walkways, landscape and property boundaries. This may be a professionally drawn plan, or a carefully drawn plan – to scale – by the applicant. (Scale to suit, range from 1' = 10' to 1' = 50'.) Contract and conditional rezoning applications may require additional site plans and written material that address physical development and operation of the property to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood)*	

II. Contact Information (Please enter n/a on those fields that are not applicable)

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BILLING (to whom invoices will be forwarded to)

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City/State:	Portland, Maine
Zip Code:	04104
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Home #:	n/a
Cell #:	n/a
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E-mail:	

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

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Name:	Matthew Phillips, Carroll Associates
E-mail:	mphillips@carroll-assoc.com
Name:	
E-mail:	

III. APPLICATION FEES (check applicable review)

X	**Zoning Map Amendment** from (R5) zone to (B1b) zone	$3,000.00
	Zoning Text Amendment to Section 14- ( ) (For a zoning text amendment, attach on a separate sheet the exact language being proposed, including existing relevant text, in which language to be deleted is depicted as crossed out (~~example~~).	$3,000.00
	Combination Zoning Text Amendment and Zoning Map Amendment	$4,000.00
	Conditional or Contract Zone *(A conditional or contract rezoning may be requested by an applicant in cases where limitations, conditions, or special assurance related to the physical development and operation of the property are needed to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood. Please refer to Division 1.5, Section 14-60-62.)*	$5,000.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) ($.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review ($50.00 hour)
- Legal Review ($75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. SUBMITTING YOUR APPLICATION IN ELECTRONIC FORMAT

Welcome to the Planning & Urban Development's new Electronic Plan Review Process. Below you will find the steps along with tips and guides to help you through uploading and viewing your project electronically during the review process.

All of the following applications shall be submitted electronically to planning@portlandmaine.gov by following the steps below:

Level 1 Site Alteration, Level 2 Site Plan, Level 3 Site Plan, Level 3 Subdivision, Administrative Authorization, Conditional Use, Inclusionary Zoning and Contract/Rezoning Applications.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail (Planning Division, 389 Congress Street, Portland, ME 04102) or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

4. Follow the link below (Applying Online) for step by step instructions on how to do the following:
   - Prepare drawings, documents and photos for uploading;
   - Getting started in e-Plan;
   - Prepare **revised** drawings and documents for uploading.

   Applying Online

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

5. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	
Date:	2/19/17

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	
Date:	2/19/17

MAINE REAL ESTATE TAX PAID

DEED OF SALE BY PERSONAL REPRESENTATIVE (INTESTATE)
Maine Statutory Short Form

Heather Libby and Laura Dibiase, duly acting and appointed Personal Representatives of the Estate of Diane M. Caminiti, deceased (intestate), as shown by the probate records of Cumberland County, Maine, and having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, by the power conferred by the Probate Code, and every other power, for consideration paid, grants to **Steven E. Cope and Roberta S. Cope,** of 172 Concord Street, Portland, ME 04102, as joint tenants the real property in Portland, County of Cumberland, Maine, described as follows: WITH WARRANTY COVENANTS

A certain lot or parcel of land with the buildings thereon situated in Portland, County of Cumberland and State of Maine, on the westerly side of Stevens Avenue, at Deering Center, so-called, bounded and described as follows:

Beginning at the northerly corner of land now formerly of Charles D. Sawyer on the westerly side of Stevens Avenue; thence northerly on said Avenue sixty four (64) feet; thence westerly on a line parallel with said Sawyer's line, one hundred (100) feet to a point; thence southerly parallel with the westerly side of said Avenue and keeping distance of one hundred 100 feet therefrom, sixty four (64) feet to said Sawyer's land; thence easterly by said Sawyer's land, one hundred (100) feet to the point of beginning.

Reference is made to a warranty deed from Edward H. Candelmo et al. to Diane M. Hamilton and Michael F. Caminiti dated 04/22/1982 and recorded at the Cumberland County Registry of Deeds in Book 4947, Page 108 and a deed from Michael F. Caminiti dated 07/10/1989 and recorded at the Cumberland County Registry of Deeds in Book 8821, Page 50. Diane M. Caminiti died on 10/31/2015 intestate, Cumberland Registry of Probate Docket No. 2016-0246.

WITNESS my hands and seal this 29 day of July, ~~19~~ 2016

Estate of Diane M. Caminiti

Wendy Swan
Witness

to both
Witness

(PR)
by: Heather Libby
Personal Representative

PR
by: Laura Dibiase
Personal Representative

State of Maine
County of Cumberland

Personally appeared before me the above named Heather Libby and Laura Dibiase, Personal Representatives as aforesaid and acknowledged the foregoing to be his/her/their free act and deed in their said capacity and the free act and deed of said Estate.

Before me,

Wendy Swan

Notary Public/~~Maine Attorney~~

WENDY L. SWAN
NOTARY PUBLIC - MAINE
My Commission Expires October 13, 2018

Received
Recorded Register of Deeds
Aug 04,2016 02:01:22P
Cumberland County
Nancy A. Lane

Neighborhood Meeting Certification
510 Stevens Avenue Map Amendment

I, Patrick J. Carroll, hereby certify that a neighborhood meeting was held on April 11, 2017 at Siano's Pizzaria at 7:00 pm.

I also certify that on April 1, 2017 invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change.

2. Residents on the "interested parties" list.

3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine .gov and ldobson@portlandmaine .gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

April 20, 2017

_____ _____ (date)

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

April 1, 2017

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for a Zoning Map Amendment for property located at 510 Stevens Avenue in Portland. The purpose of this Map Amendment is to bring the property into conformance with the adjacent zoning district along this portion of Stevens Avenue and allow redevelopment of the property.

Meeting Location:	**Siano's Pizzaria Function Room** 5 Brentwood Street Portland,ME 04103
Meeting Date:	**April 11, 2017**
Meeting Time:	**7:00 PM**

(The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list", be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.)

If you have any questions, please call Adam Cope at 207-939-3326 or Patrick Carroll at 207-772-1552.

Sincerely,

Adam Cope
Patrick Carroll

Note:

Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

510 Stevens Avenue Rezoning
Neighborhood Meeting List of Attendees

Meeting Location: Sianos Pizzaria
Meeting Date: April 11, 2017
Meeting Time: 7:00 PM

Name	Address	Contact email
Jim Rivoli	279 Walton St.	RIVOLIJ@YAHOO.com
Kelly Rivoli	279 Walton St.	TROLLMATES@YAHOO.com
Dick Hall	153 Hartley St	dickhall@maine.rr.com
David Little	142 Brentwood St	dlittle75@earthlink.net
Mikki Jones-Little	142 Brentwood St	
Gordon Gaines	43 Richardson St	
Doug + Betsy Sholl	24 Brentwood	betsysholl@yahoo.com
Candy MacDuffie	166 Hartley St	
John Thibodeau	114 Clinton St	jet627@icloud.com
Kiya Smith	55 Hamblet Ave.	lachsmith@maine.rr.com
Kevin Moquin	29 Bedell St	

Pat Carroll

From: Roberta Cope <bcope@maine.rr.com>
Sent: Thursday, April 13, 2017 11:18 AM
To: Pat Carroll
Cc: Adam ICE; Steven ICE
Subject: minutes of neighborhood meeting

Hi Pat,

Here's what I have for minutes of Tuesday's meeting. Please edit as you see ft.

Thank you.
Bobbi

Project: 510 Stevens Avenue Zoning Map Amendment (R5 to B1b)

Minutes of Neighborhood Meeting April 11, 2017, 7pm, Siano's Restaurant, 5 Brentwood Street, Portland, Maine

There were 20 people in attendance. Sign in sheet was provide and is attached. (per Pat Carroll)

Pat Carroll, Landscape Architect conducted the meeting.

Pat described the project and used visual renderings of the proposal and its synergy with the development with the adjoining property at 502.

A large focus of questions and concerns were about the potential impact of parking and traffic in particular by 3 people who live on Hartley and Clinton very near Stevens Avenue where they already struggle to find street parking. The impact of the UNE parking was described as a large culprit of the existing parking and traffic congestion. There was discussion about possible solutions for parking restrictions such as signage and resident stickers.

Safety concerns were expressed and the elimination of multiple back-out driveways replaced by one, shared, drive-out driveway was well received. The relocation of the crosswalk was well received.

The proposal was well received by neighbors who like the walking neighborhood and welcome another retail/business to be able to walk to.

VICINITY MAP

A. SUBJECT PROPERTY
510 Stevens Ave, 135-E-8, Steven + Roberta Cope, Single Family Residential

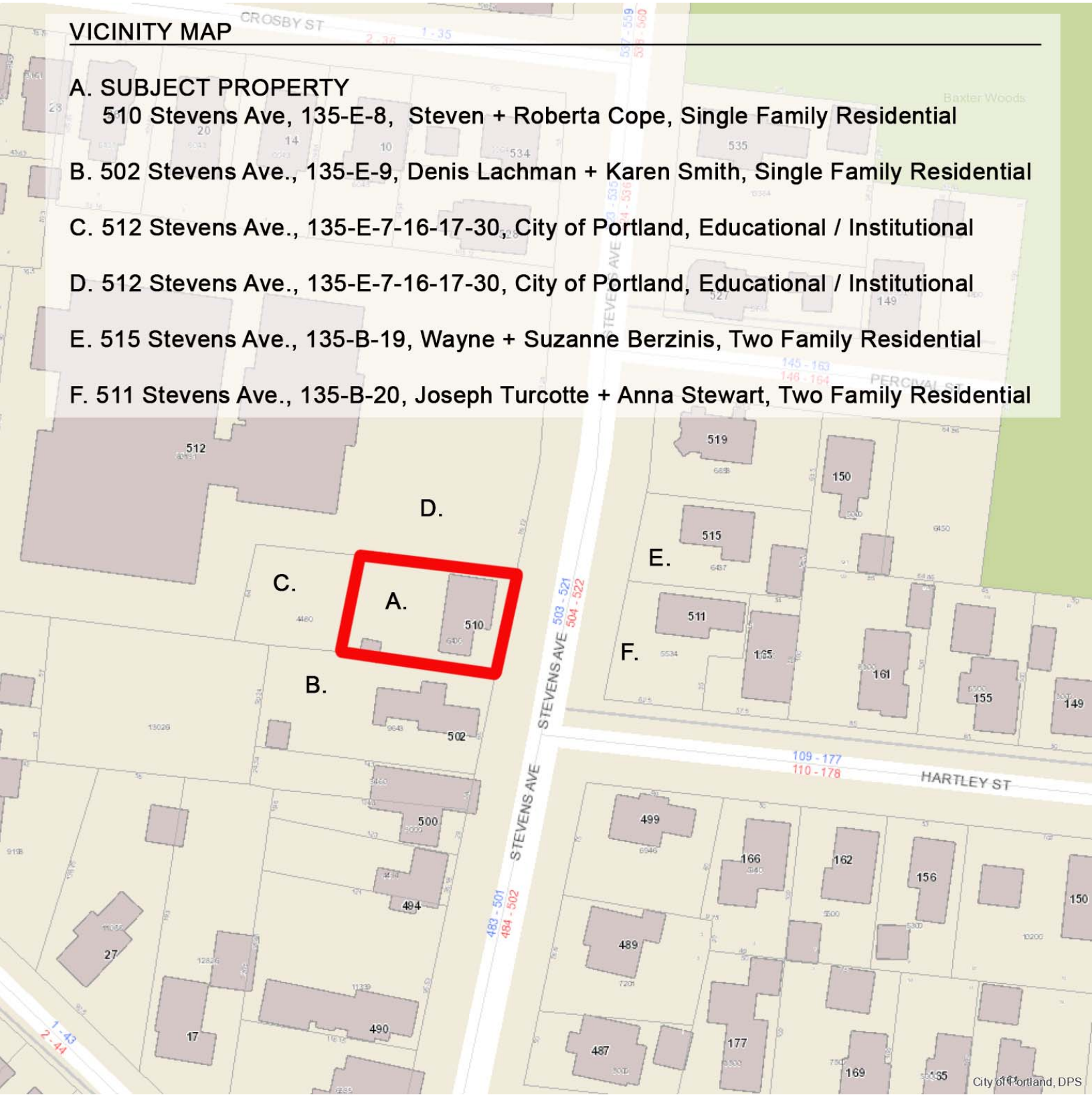
B. 502 Stevens Ave., 135-E-9, Denis Lachman + Karen Smith, Single Family Residential

C. 512 Stevens Ave., 135-E-7-16-17-30, City of Portland, Educational / Institutional

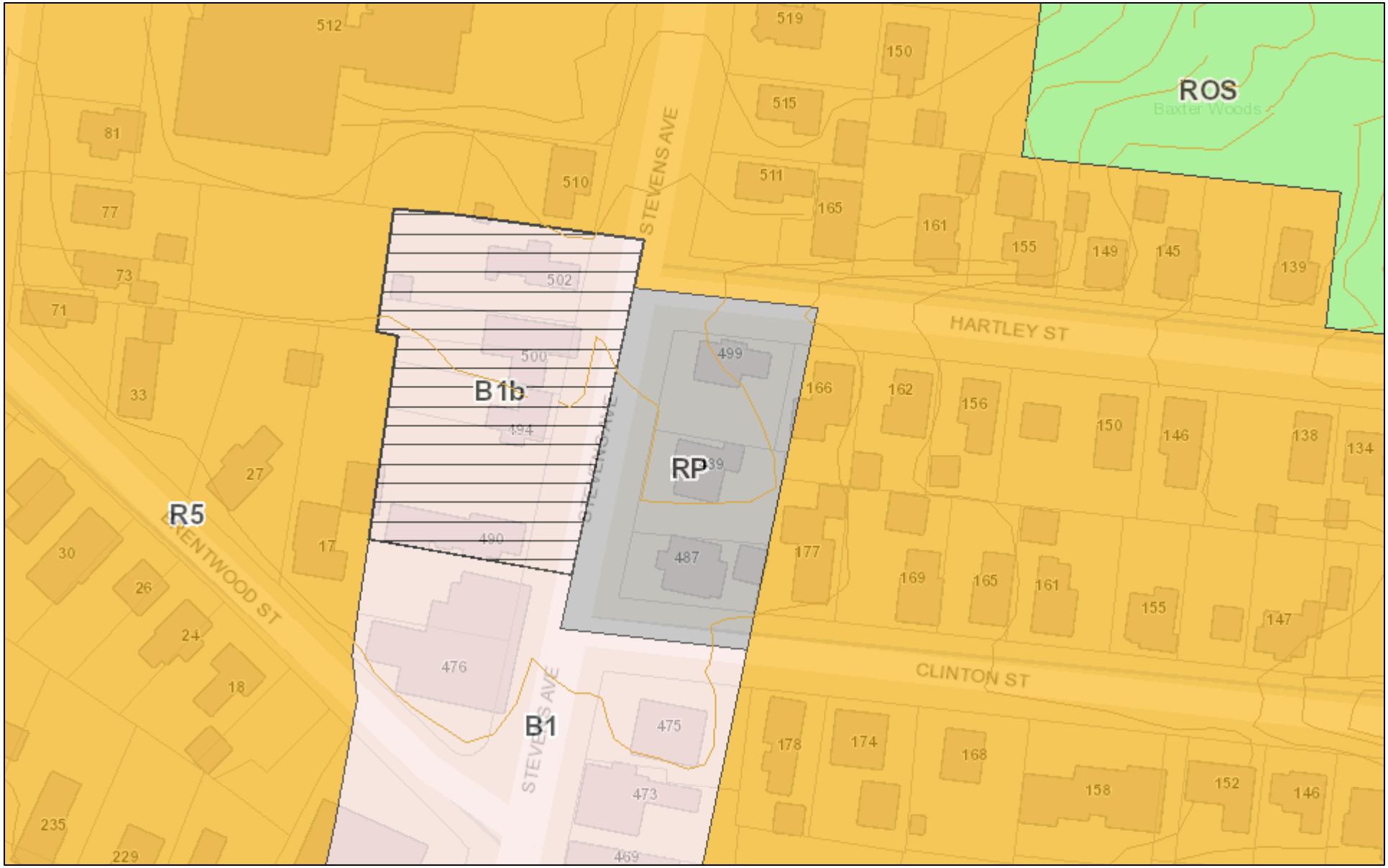
D. 512 Stevens Ave., 135-E-7-16-17-30, City of Portland, Educational / Institutional

E. 515 Stevens Ave., 135-B-19, Wayne + Suzanne Berzinis, Two Family Residential

F. 511 Stevens Ave., 135-B-20, Joseph Turcotte + Anna Stewart, Two Family Residential



ArcGIS Web Map



November 21, 2016

Contours

Coastal Buffer

H - Highly Unstable

U - Unstable

Shoreland Overlay Zone

Stream Overlay Zone

Stream_protection

1:1,216

0 0.01 0.02 0.04 mi

0 0.01 0.02 0.04 km

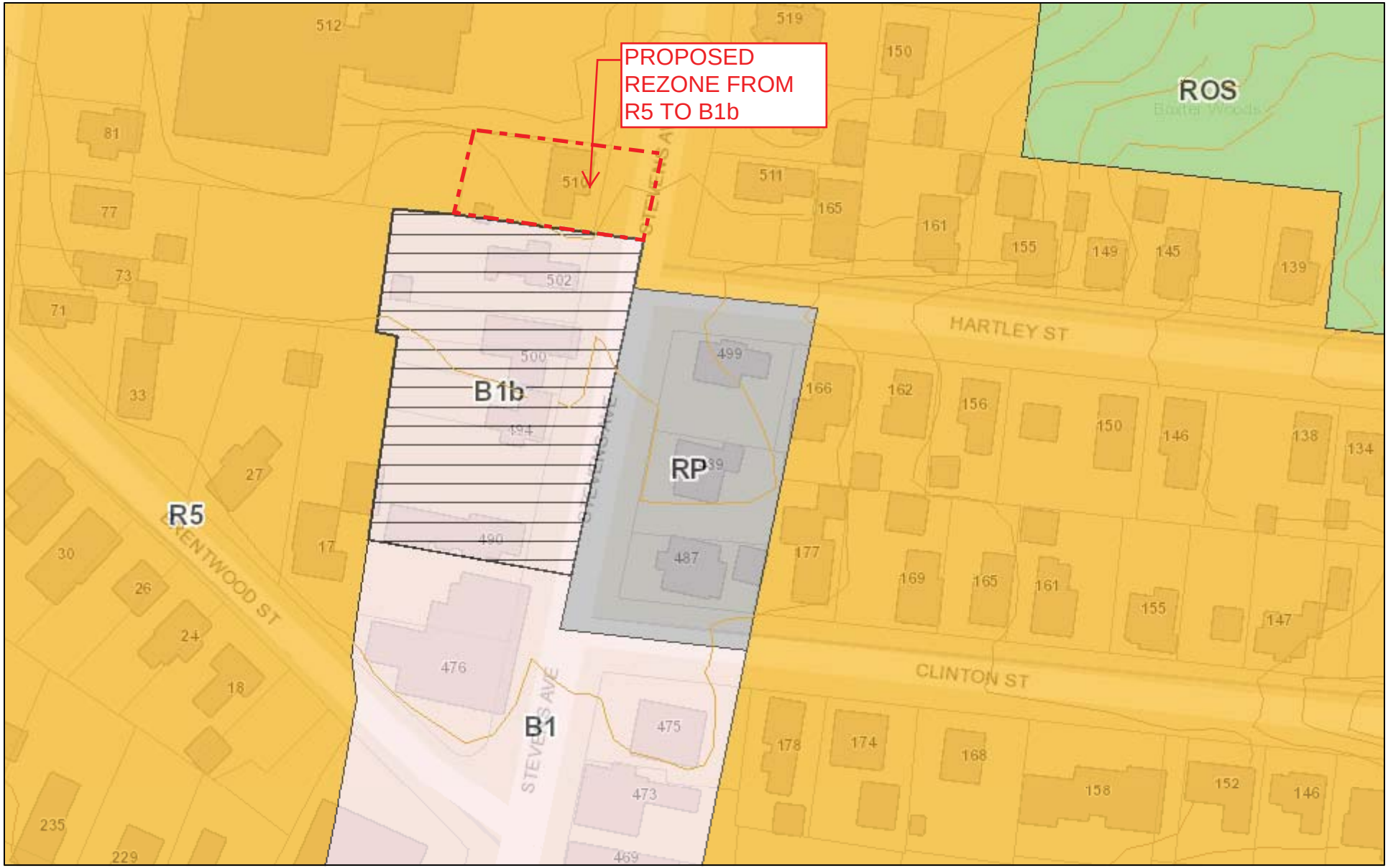
City of Portland, DPS

Web AppBuilder for ArcGIS

City of Portland, DPS | City of Portland |

ArcGIS Web Map

510 STEVENS AVENUE
PROPOSED ZONE MAP CHANGE



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Shoreland Overlay Zone

Stream Overlay Zone

Stream_protection

1:1,216

0 0.01 0.02 0.04 mi

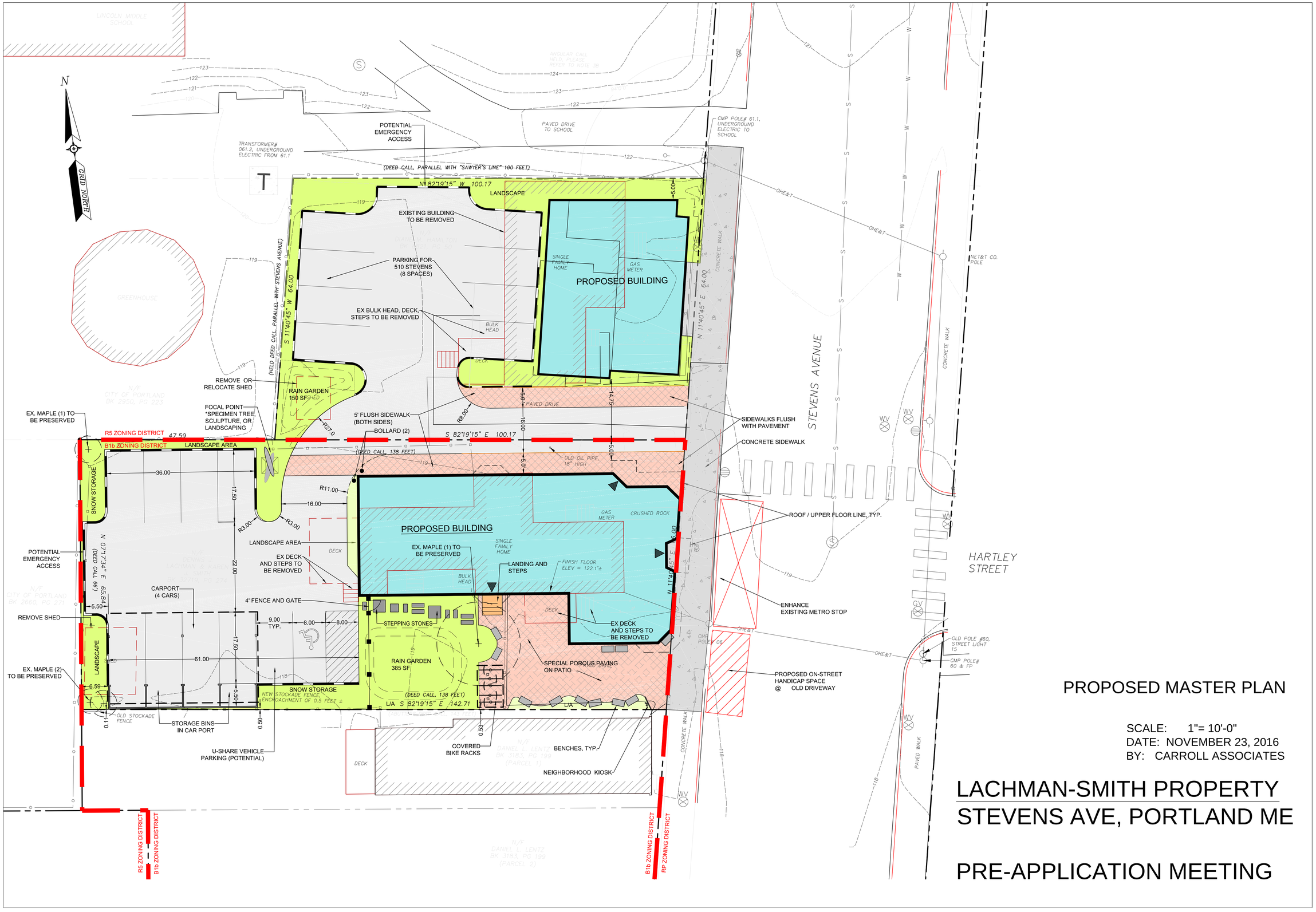
0 0.01 0.02 0.04 km

City of Portland, DPS

BY: CARROLL ASSOCIATES

DATE: FEBRUARY, 2017

Web AppBuilder for ArcGIS
City of Portland, DPS | City of Portland |



PROPOSED MASTER PLAN

SCALE: 1"= 10'-0"
DATE: NOVEMBER 23, 2016
BY: CARROLL ASSOCIATES

LACHMAN-SMITH PROPERTY
STEVENS AVE, PORTLAND ME

PRE-APPLICATION MEETING

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Re: 510 Stevens Ave

1 message

Barbara Barhydt <bab@portlandmaine.gov> Wed, Apr 5, 2017 at 8:51 AM
To: Caroline Sprague <spraguecaroline@yahoo.com>
Cc: "Munson, Jennifer" <jmy@portlandmaine.gov>, Matthew Grooms <mgrooms@portlandmaine.gov>

Hello Caroline:

Thank you for your comments and we will include them in the review for the Planning Board. I do want to clarify that the Planning Division sent a receipt of application notice. I believe you received the notice for a neighborhood meeting held by the applicant. There will be a workshop and public hearing scheduled sometime in the future with the Planning Board, but we have not scheduled this item on the Board's agenda as of yet. Notices will be posted and mailed for those meetings.

If you have questions about the review process with the Planning Board, please let me know.

Thank you.

Barbara

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

On Tue, Apr 4, 2017 at 7:28 PM, Caroline Sprague <spraguecaroline@yahoo.com> wrote:

> We just received notification of a meeting occurring next Tuesday regarding the property located at 510 Stevens Ave. While we are unable to attend the meeting, my husband and I own two properties on Crosby Street and would like to be on the record as opposing a change of zoning to that location.
>
> This change of zoning will have negative consequences on our property in various ways, including causing parking congestion on the surrounding streets.
>
> We encourage you to NOT approve that change. The area has a very residential, undeveloped feel to it which is critically important to current owners of property. To allow someone to build a large multi unit in that location would completely change the look and feel of the area.
>
> Thank you,
> Caroline and Mark Sprague
> 20 and 26 Crosby Street

April 18, 2017

To: The Planning Board

I recently was able to attend the meeting at Siano's on April 14th, to hear about the rezoning request by the owners. The first thing that was stated was, "We are trying to re-vitalize Deering Center". Not sure what that means because we are vital all ready!

Since my last letter regarding 502 was mute, this letter will probably be also!!!

I can not make any of the meetings for I work Tuesday nights, but I hope this letter is read out loud for all to hear in attendance. My concerns and voice need to be heard!

You, as the Planning Board, obviously do not care about the people who reside near the Steven's Avenue side of the 510 zoning request. Nor do you car about the employees parking from the local businesses; the people coming to the area to the businesses; and the delivery trucks that will be delivering to these businesses.

If you did you would realize how you contradicted yourselves. Last September when school started everyone on the upper end of Clinton Street was given 3-4 tickets during the day because the 2 hour parking ban was enforced without warning. The neighborhood and businesses petitioned to have the parking ban stopped!

Your reason was that there was too many cars parked on Clinton Street and Steven's Avenue. Now, you put through 502, (more cars and traffic and an added business) and want to change the 510 lot to do the same.

Let it me known that I oppose this Site Plan and Subdivision because of multiple reasons:

Traveling North from Woodfords Street up Stevens Avenue to Hartley Street:

Left Side of Street: Schools & Businesses ***Depicts Rental Unit(s) above

Deering High School
Longfellow Elementary School
Pleasant Avenue Church
Siano's Restaurant & Pizzeria
Pat's Meat Market - 2nd floor - Tree House Restaurant
House - Multiple Family ***(2-3 rents)
Honey Exchange
Roy's Shoe Shop - ***Living Quarters upstairs
Lincoln Middle School

Right Side of Street:

Burbank Branch Library
Photography Studio & One other business ***
Jet Video/ Postal Store/Ice Cream Shop ***
Hair Salon***
Tailor/Sewing Shop ***
Black Cat Coffee Shop***
Hair Salon
Scandinavian Shop
Quality Shop/Grocery/Sandwich Shop ***
Veterans Building - Offices above
Dr. Ron Cody, DDS ***
Grey Home - 4-5 Therapists Offices
White Building - Offices ?

That is a total of 22 active use buildings in the vicinity not counting any single homes in the area or apartment houses. We have plenty of traffic and businesses now.

My home is the second home on the left behind Dr. Cody's office and all of my neighbors, including myself, just complained in September about forcing the two hour parking limit. We, as a community, petitioned against enforcing the two hour limit because we do not have a problem with parking or safety at this time.

Knowing that the area is heavily traveled with the businesses and schools, the City of Portland keeps adding to the populated area. For example, building a Pharmacy School without enough parking for the students and if that wasn't bad enough, allowing for a Dental School. The students are forced to park in the street filling the whole length of Steven's Avenue from Morrill's Corner to Hartley Street. I feel really bad for these students for they have to walk a long way to their cars on a dimly lit street! Someone is going to get killed!

The area just can not handle any more traffic! I suggest a traffic study be done before any more buildings are renovated to add more apartments and businesses.

Thank you for your time and consideration.
Nancy Polito
177 Clinton Street
Portland, Maine 04103
207-807-2299

Memorandum
Planning and Urban Development Department
Planning Division

To:	Elizabeth Boepple, Chair, and Members of the Portland Planning Board
From:	Matthew Grooms, Planner
Date:	April 21, 2017
Re:	5-7 Cumberland Avenue (6-Unit Condominium)
Project #:	2017-045 **CBL:** 14-C-17, 14-C-23
Meeting Date:	April 25, 2017

I. INTRODUCTION

Banner Properties, LLC appears before the Planning Board for a preliminary site plan and subdivision review for a six-unit housing development at 5-7 Cumberland Avenue on Munjoy Hill. The proposed development includes a four-story building, five parking spaces, landscaping, stormwater treatment, and utility and sidewalk improvements. Vehicular access to this site is provided via an existing curb-cut shared with the recently approved project under the same developer at 30 Merrill Street.

Figure 1: Existing Conditions

This development is being referred to the Planning Board for compliance with the site plan and subdivision standards. A total of 295 notices were sent to property owners within 500 feet of the site and a legal ad for the Planning Board hearing ran on April 17th and 18th, 2017 in the Portland Press Herald.

Applicant: Mike Boissonneau, Banner Properties, LLC
Consultants: Evan Carroll, Bild Architecture; Jon Whitten, Plymouth Engineering

II. REQUIRED REVIEWS

Waiver Requests	***Applicable Standards***
Aisle width – To allow a 19' aisle in the parking area *Supported by consulting traffic engineer and requested of the applicant.*	Technical Manual, *Section 1.14*, requiring that aisle width for right-angle parking be 24' per Figure I-27.
Parking dimensions – To allow all parking spaces at 8' x 15' *This waiver is supported by consulting traffic engineer and it has been requested that the applicant submit a formal waiver request.*	Technical Manual, *Section 1.14*, requiring that standard parking space be 9' x 18'.
Review	***Applicable Standards***
Site Plan	*Article V*
Subdivision	*Article IV*

III. PROJECT DATA

Existing Zoning	R-6

Existing Use	Residential (duplex)		
Proposed Use	Residential (6 condominium units, four efficiency and two 2-bedroom)		
Parcel Size	4,476 SF		
	Existing	*Proposed*	*Net Change*
Building Footprint	1,332 SF	1,791 SF	459 SF
Building Floor Area	2,424 SF	7,567 SF	5,143 SF
Impervious Surface Area	More Information Required	More Information Required	More Information Required
Parking Spaces	2	5	3
Bicycle Parking Spaces	0	5	5
Estimated Cost of Project	$820,000		

Figure 3: 5-7 Cumberland Ave Zoning Information

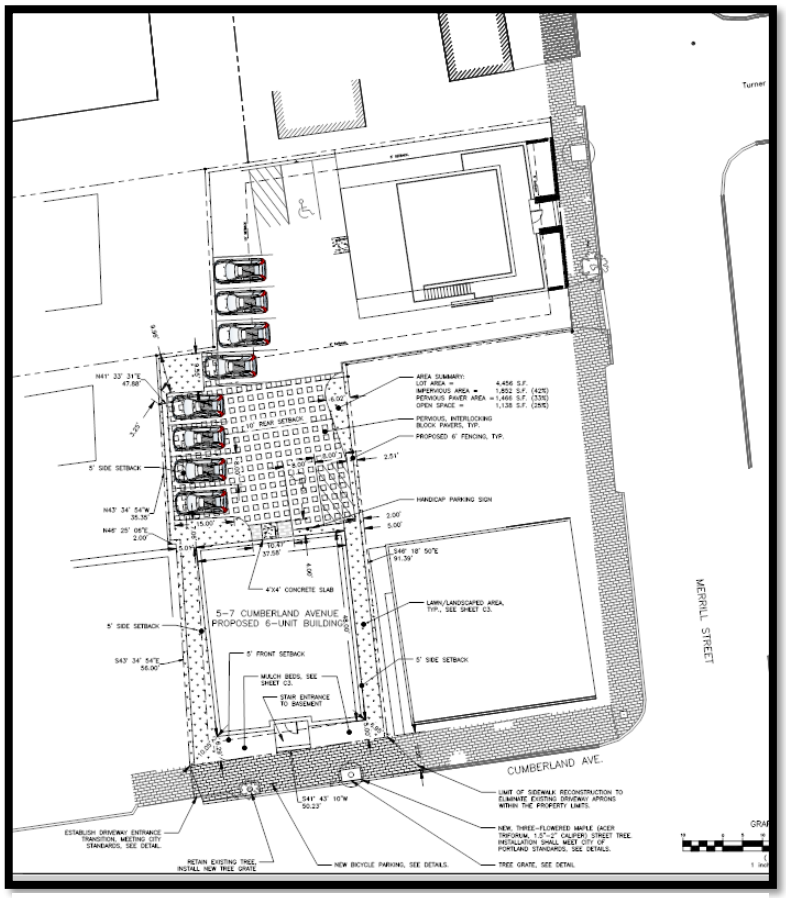


Figure 2: Proposed Site Plan

Figure 4: 5-7 Cumberland Ave Aerial View

IV. BACKGROUND

5-7 Cumberland Avenue lies at the eastern terminus of Cumberland Avenue between Lafayette Street and Merrill Street. The site is currently occupied by a two-story duplex, which would be demolished under the plans proposed here. The site lies in an R-6 zone and is surrounded by residential uses, including both single and multi-family homes.

V. PROPOSED DEVELOPMENT

The applicant has proposed a contemporary four-story building to house four efficiency and two two-bedroom condominium units. Vehicular access would be provided via a modified curb cut on Merrill Street. The proposed driveway is shared with the previously approved 7-unit condominium project at 30 Merrill Street. Five parking spaces are proposed at the site's rear, including one handicap parking space. The applicant has proposed building entrances at the front of the building on Cumberland Avenue as well as at the rear, with the primary and accessible entrance to be located at the rear. The proposed building is 44.21' feet in height with a stepback proposed at 34.21' feet, with two rooftop terraces, one being located at stepback level and the second being located on rooftop level. Landscaping is proposed within the two side yards with a mixture of flowers and ornamental grasses to be located along the Cumberland Avenue frontage. Stormwater management is proposed with a pervious paver system.

VI. PUBLIC COMMENT/NEIGHBORHOOD MEETING

The Planning Division has received no public comments. The applicant has also provided neighborhood meeting minutes (*Attachments W,X and Y*). Four individuals from the public attended and raised questions regarding landscaping, building features and the project timeline.

VII. RIGHT, TITLE, & INTEREST

The applicant has provided a deed recorded on July 11, 2016 as evidence of right, title, and interest. *(Attachment E)*. No easements are required.

VIII. FINANCIAL & TECHNICAL CAPACITY

The applicant has submitted a letter from Gorham Savings Bank attesting to their financial capacity *(Attachment G).*

IX. ZONING ANALYSIS

Staff conducted a zoning analysis which found that the project meets the use and dimensional requirements of the R-6 zone, including the maximum density of one unit/725 SF, minimum front yard setback of 5', minimum side yard setbacks of 5', required stepbacks of 10' above 35' in height, maximum height of 45', and minimum landscaped open space of 20%.

X. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)

XI. SUBDIVISION REVIEW (14-497(a). Review Criteria)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's subdivision ordinance. Comments are derived from material submitted by the applicant for site plan review. Given that this proposal is for greater than three residential units, the applicant is required to submit a Level III Subdivision Plan. Staff has requested that the applicant submit a revised application and all required Level III Subdivision Plan materials. Staff comments are below.

1. Water, Air Pollution

The stormwater management plan for the project is discussed in more detail under site plan review below. Based on the findings of the civil engineer's review *(Attachment 2),* no detrimental water or air quality impacts are anticipated.

2 & 3. Adequacy of Water Supply

The applicant has provided evidence of capacity from the Portland Water District *(Attachment Q).*

4. Soil Erosion

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated.

5. Impacts on Existing or Proposed Highways and Public Roads

Based on the findings of the traffic engineer's review *(Attachment 3)*, no detrimental impacts to the existing street network are anticipated.

6. Sanitary Sewer/Stormwater Disposal
Sanitary sewer and stormwater impacts are discussed in more detail under site plan review below.

7. Solid Waste
Tenants will utilize municipal solid waste and recycling services that will be collected curbside by the city. No detrimental impacts are anticipated.

8. Scenic Beauty
This proposal is not deemed to have an adverse impact on the scenic beauty of the area.

9. Comprehensive Plan
The plans meet multiple goals from the city's housing plan, including ensuring "the construction of a diverse mix of housing types that offers a continuum of options across all income levels" and "encourag[ing] higher density housing for both rental and home ownership opportunities, particularly located near services, such as schools, businesses, institutions, employers, and public transportation."

10. Financial and Technical Capacity
As noted above, the applicant has submitted a letter from Gorham Savings Bank attesting to their financial capacity (*Attachment G)*.

11. Wetland/Water Body Impacts
There are no anticipated impacts to wetlands or water bodies.

12. Groundwater Impacts
There are no anticipated impacts to groundwater supplies.

13. Flood-Prone Area
Per the city's existing flood maps, the site is not located in a flood zone

XI. DEVELOPMENT REVIEW

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance. Staff comments are below.

1. Transportation Standards

a. Impact on Surrounding Street Systems

The development includes six residential units, which, per the applicant's trip generation analysis, are anticipated to generate three trips "within the peak hour" *(Attachment I)*, this being in addition to the anticipated three trips generated by the project at 30 Merrill Street, for a total of six trips. Tom Errico, the city's consulting traffic engineer, has reviewed the applicant's submittals and has not identified any concerns regarding impacts to surrounding street systems *(Attachment 2).*

b. Access and Circulation

The final plans include utility, street tree, and driveway apron work within the existing 8' brick sidewalk along the frontage of the site. The applicant is proposing to replace the existing sidewalk along the property's frontage.

The building is proposed with two entrances, a front door with access from the Cumberland Avenue sidewalk and a rear door with access from the parking area. The front door, which is located atop a front stoop and is not ADA accessible, provides access to the first floor via an interior stairwell, from which the rest of the building may be accessed. The rear door provides at-grade, direct access to two efficiency units located on the first floor. Given the building's mid-block location, staff has requested that the applicant

consider the construction of an ADA accessible sidewalk that would permit residents and visitors to access the rear entrance and parking area directly from Cumberland Avenue. At present, pedestrian access to the rear of the site is limited to the Merrill Street driveway.

The plans show a driveway in pervious pavers which would provide access to five parking spaces, one of which would be handicap accessible. The drive aisle in the parking area proposed at less than 19', less than the city standard. As such, a waiver is required and has been requested from the applicant.

The applicant has provided a turning template to demonstrate the viability of efficient site circulation. Mr. Errico has raised concerns regarding the minimal separation (13.77') between the handicap accessible parking space and the rear of the standard compact parking spaces (*Attachment 2*). He writes,

> *I do not find the layout of the handicapped parking space to be acceptable. In my professional opinion, the end parking space will not be accessible. The applicant has provided a vehicle turning template graphic, but I continue to be concerned about the subject parking space being blocked. I would suggest alternative parking layout configurations be considered.*

c. Public Transit Access

The proposed development is not located along a public transit route. As such, no provisions for transit access are required.

d. Parking

Division 20 of the land use ordinance provides an exception for the off-street parking requirement for the first three units in the R-6 zone and a 1:1 requirement thereafter. Per the ordinance then, only three off-street spaces are technically required. The applicant has elected to provide five off-street spaces. On the final plans, the applicant shows all five spaces at 8' x 15', dimensions which fail to meet the *Technical Manual* standard. Mr. Errico has expressed his support for a waiver, which has been requested of the applicant *(Attachment 2)*. Given Mr. Errico's concerns regarding the location of the handicapped parking space, and the fact that the applicant is providing more parking than is required per Division 20 of the Land Use Code, staff has requested that the applicant consider reconfiguring the parking layout or removing one parking space.

Two bicycle spaces per five dwelling units are required under the site plan ordinance. As such, three bicycle parking spaces are required. The final plans denote a bicycle rack on the sidewalk in front of the building to provide space for five bicycles. Additional bicycle parking would be provided in the building basement.

e. Transportation Demand Management

A transportation demand management plan is not required.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

There are no known significant natural features on the site.

b. Landscaping and Landscape Preservation

The landscaping plan shows assorted shrubs and perennials, including dwarf balsam firs, rhododendrons, spirea, hostas, and day lilies which frame the front door on Cumberland Avenue. These plantings meet the city's landscaping standards, and Jeff Tarling, the city's arborist, has verbally indicated his satisfaction with the plans.

Per the city's site plan ordinance, six street trees are required for the six residential units proposed. The plans include the preservation of one existing street tree and the planting of one more. Site constraints prevent the planting of additional street trees. The applicant is proposing to make a financial contribution

for the four remaining street trees, with a contribution. The financial contribution, as required by ordinance, is $400 per tree or a total of $1,600.

c. Water Quality/Storm Water Management/Erosion Control
In its current state, the site slopes from back to front and is largely pervious, save for the area occupied by the existing duplex. All runoff drains to Cumberland Avenue via overland flow and from there into existing catch basins which collect in the combined sewer in Cumberland Avenue. Under the proposed development, much of the site would remain pervious, as the entire parking area and driveway is designed with pervious pavers with a filter layer sub-base over native soils. The project will result in a de minimis increase in impervious area of approximately 315 square feet. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site. Ms. Swett has reviewed the submitted plans and finds the proposed plans satisfactory (*Attachment 1*).

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans
As noted above, the project is generally deemed consistent with related master plans.

b. Public Safety and Fire Prevention
Keith Gautreau, of the Fire Prevention Bureau, has reviewed the plans and found them adequate in terms of emergency vehicle access and the city's public safety standards *(Attachment 1)*.

c. Availability and Capacity of Public Utilities
The plans depict cross-street overhead electrical service from a pole on the southern edge of the Cumberland Avenue frontage. A sewer connection is proposed to an existing combined line in Cumberland Avenue. A wastewater capacity application is currently pending review *(Attachment C)*.

Domestic and fire water service are also proposed from Cumberland Avenue. The applicant has provided evidence of water capacity *(Attachment V)*.

Ms. Swett has reviewed the utility plan and details and found them adequate with respect to the city's technical standards.

4. Site Design Standards

a. Massing, Ventilation, and Wind Impact
The bulk, location, and height of the proposed building are not anticipated to result in health or safety problems from a reduction in ventilation or changes to the wind climate. Likewise, these elements of the plan are not anticipated to result in substantial diminution in the value or utility of neighboring structures.

Roof-mounted HVAC systems are depicted away from the cornice line on the east side of the building. Vents are also shown on the building sides near the building's rear.

b. Shadows
No shadow impacts to publicly accessible open spaces are anticipated.

c. Snow and Ice Loading
The applicant has been requested to provide information regarding ice and snow load controls along the building's perimeter.

d. View Corridors
Cumberland Avenue is not a protected view corridor.

e. Historic Resources
The site is not within or adjacent to a designated historic resource.

f. Exterior Lighting
The applicant has provided a photometric plan and two cut sheets depicting full cutoff fixtures *(Plan 21 and Attachment R)*. These plan meets demonstrate a light trespass of 0.7 foot candles at the eastern property line, and that applicant has been asked to revise their plans in order to meet *Technical Manual* standards of 0.1 foot candles.

g. Noise and Vibration
As noted above, final plans and elevations show mechanical equipment on the roof at the interior of the site. The applicant has attested that all state and federal emissions requirements will be met *(Attachment P).*

h. Signage and Wayfinding
No signage or wayfinding is proposed.

i. Zoning-Related Design Standards
The applicant has provided a set of elevations, renderings, a context graphic, and a design narrative which reflect several rounds of review and speak to the architectural approach for the project *(Attachment M)*. The narrative addresses the R-6 design standards, and argues that elements of the design relate closely to the surrounding context - the massing "much like the double-wide triple decker buildings that exist throughout the neighborhood," the use of "areas of concentrated windows (like bay windows)," the recessed and covered front entry, the prominent cornice, and the use of clapboard siding. In response to both the drawings and the narrative, Caitlin Cameron, the city's urban designer, has provided a memo highlighting the findings of the design review and establishing that the proposed design meets the majority of criteria for an alternative design review. Ms. Cameron has requested additional detail regarding façade materials as well as revisions to the proposed balconies. *(Attachment 5).* Under alternative design review, a project must be designed by a registered Maine architect, be compatible with the surrounding buildings in a two-block radius, be consistent with the principles of the R-6 standards, and meet the majority of design standards within each principle.

Figure 5: Rendering - Looking East

Figure 6: Rendering - Looking West

XV. NEXT STEPS

1. Respond to and resubmit plans and documents based on Staff Comments
2. Provide recording plat and subdivision materials
3. Schedule a second workshop or public hearing

XVI. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. City Staff review comments (4/18/2017)
2. Traffic Engineering Comments (4/20/2017)

APPLICANT'S SUBMITTALS

A. Cover Letter
B. Level III Site Plan Application
C. Wastewater Application
D. Description of Project
E. Evidence of Right, Title, & Interest
F. Compliance With Zoning
G. Evidence of Financial Capacity
H. Construction Management Plan
I. Traffic Analysis
J. Stormwater Report
K. Maintenance Plan
L. Consistency with City Master Plans
M. Solid Waste
N. Building Code Review
O. Design Standard Analysis
P. CPTED Analysis
Q. Accessibility Analyis
R. Mechanical Systems
S. Lighting Cut Sheet (1)
T. Lighting Cut Sheet (2)
U. Lighting Cut Sheet (3)
V. Portland Water District Letter
W. Neighborhood Meeting (1)
X. Neighborhood Meeting (2)
Y. Neighborhood Meeting (3)

PLANS

Plan 1. Cover Sheet
Plan 2. Boundary Survey
Plan 3. Site Plan
Plan 4. Grading and Utility Plan
Plan 5. Landscape Plan
Plan 6. Erosion Control Plan
Plan 7. Civil Details
Plan 8. Construction Management Plan
Plan 9. Floor Plan - Basement and First Floor
Plan 10. Floor Plan – Second and Third Floor
Plan 11. Floor Plan – Fourth Floor and Roof
Plan 12. Elevations – Front and Side (West)
Plan 13. Elevations – Rear and Side (East)
Plan 14. Rendering – Looking East
Plan 15. Rendering Looking West
Plan 16. Building Sections
Plan 17. Architectural Details (1)
Plan 18. Architectural Details (2)
Plan 19. Architectural Material Schedule
Plan 20. Context Plan
Plan 21. Construction Assemblies (1)
Plan 22. Construction Assemblies (2)
Plan 23. Code Review
Plan 24. Life Safety
Plan 25. Turning Template
Plan 26. Lighting Plan

Planning and Urban Development Department
Planning Division

April 18, 2017

Mike Boissonneau
Banner Properties, LLC
126 Underwood Road
Falmouth, ME 04105

Evan Carroll
Bild Architecture
PO Box 8235
Portland, ME 04101

RE: Staff Review Comments for 5-7 Cumberland Ave (2017-045) – Planning Board Review

Project Name:	5-7 Cumberland Ave	Project ID:	(2017-045)
Project Address:	5-7 Cumberland Ave	CBL:	14-C-17, 14-C-23
Applicant:	Mike Boissonneau		
Planner:	Matthew Grooms		

Dear Mr. Lachman,

Thank you for submitting a Level III Final Plan application for a four-story residential development with condominiums at 5-7 Cumberland Avenue. This proposal is being reviewed as a preliminary plan for Planning Board review subject to the following applicable Land Use Code provisions:

- Site Plan Ordinance, Arcticle V
- Division 7. R-6 and R-6A Residential Zones
- Division 20. Off-Street Parking
- Neighborhood Meeting Regulations, Section 14-32

Final Plan for Planning Board Review: Staff Review Comments

I. Environmental Quality Standards

A. Stormwater/Engineering Comments (Lauren Swett)

1. In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:
    a. Basic Standard: The Applicant has provided Erosion & Sediment Control notes, details, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500. No specific

locations of catch basin inlet protection installation are identified on the plans. It appears that there are catch basins in the vicinity of the project on Cumberland Avenue, and these should be identified on the plan or a general note provided indicated that catch basin inlet protection is required.

b. General Standard: The project will result in a de minimis increase in impervious area of approximately 315 square feet. The Applicant has proposed pervious pavers on the site for the parking and driveway area, connecting to the adjacent 30 Merrill Street site. The project will provide adequate stormwater treatment. The Application also notes that a green roof is to be proposed. The Applicant's proposed stormwater management system may qualify them for credits from the City's Stormwater Service Charge. Permeable pavers are currently listed in the City of Portland Stormwater Credit manual. Green roofs are not, but may be allowed with additional information provided. We have not reviewed any green roof design at this time.

c. Flooding Standard: The project will result in a de minimis increase in impervious area of approximately 315 square feet. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.

2. Final plans must be stamped by a professional engineer (Section 14-527, sub-section (e) of the City of Portland Land Use Ordinance). The Site Layout Plan included as part of this submission was not stamped.
3. The plans should note a location for snow storage. The snow storage location should be sited outside of existing and proposed drainage courses.
4. We recommend that the locations of roof downspouts/outlets be shown on the site plan. Additional erosion control may be required at some downspout locations.
5. It appears based on the photometrics plan that lighting levels may exceed the allowed levels with the lighting from the northern corner of the building. Per the technical standards, lighting levels at property line cannot exceed 0.1 foot candles, and the lighting at this location is shown as .7 foot candles.

II. Public Infrastructure and Community Safety Standards

A. Fire Department Comments (Keith Gautreau)

1. Emergency access to front of building and possibly rear via Merrill Street are adequate.
2. Existing hydrant locations are good.
3. Premises Identification
   a. The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address.
   b. Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer.
   c. If the building entry faces a different street, both the street name and number should be large enough to read from the street.
   d. Address numbers must be a minimum of 4 inches high.
   e. The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty').
   f. Color: Addresses should be in a color that contrasts with the background.
   g. Whenever possible, should be illuminated.
   h. Provide additional address signs at entrances to the property when the building address is not legible from the public street.

III. Site Design Standards

A. Site Plan Review Comments (Matthew Grooms)

1. Would the applicant consider the construction of a connecting ADA compliant internal sidewalk between the sidewalk along Cumberland Avenue and the rear entrance? At present, the only ADA accessible point of site access is via the driveway located on Merrill Street.
2. From the submitted plans, it is difficult to determine whether or not the front bay windows extend into the required front setback. Can the applicant provide these dimensions on the site layout plan?
3. How will snow storage or removal be handled on site? Please indicate appropriate areas for snow storage on applicable sheets.
4. The applicant shall provide all necessary utility capacity letters.
5. How will rooftop snow/ice load be managed to ensure pedestrian safety along Cumberland Avenue and within the rear and side yards.
6. Given that the applicant is only required to provide a total of three (3) parking spaces, would the applicant consider the removal of the existing handicap parking space to facilitate improved site circulation.
7. The location of bicycle parking shall be clearly indicated on applicable plan sheets.
8. A formal waiver request shall be submitted for parking lot aisle width and the percentage of proposed compact parking spaces.
9. Note - The rear entrance and 4' x 4' concrete slab are in close proximity to proposed on-site parking with potential for pedestrian-vehicular conflict. If possible, please consider reconfiguring this entrance to provide improved separation.
10. Provide the location and dimensions of all proposed exterior and rooftop mechanical equipment as well as associated details.

B. Design Review (Caitlin Cameron)

A design review according to the *City of Portland Design Manual* Standards was performed for the proposed new construction of a multi-family dwelling at 7 Cumberland Avenue. The review was performed by Caitlin Cameron, Urban Designer, Nell Donaldson, Planner, and Matt Grooms, Planner, all within the Planning Division of the Department of Planning & Urban Development. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual).

Findings of the Design Review:
The Planning Authority under an Alternative Design Review may approve a design not meeting one or more of the individual standards provided that all of the conditions listed below are met:

A. The proposed design is consistent with all of the Principle Statements.
B. The majority of the Standards within each Principle are met.
C. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
D. The design plan is prepared by an architect registered in the State of Maine.

The proposed design **passes** all of the criteria – please refer to comments below.

Design Review Comments *(red text denotes principles or standards that are not met)**:***

Principle A Overall Context – Met – see below.

- *A-1 Scale and Form:* The building type proposed is similar to a double-triple with an additional unit stepped back on the 4th floor. Double-triples can be found in the surrounding context, the scale and form of those buildings are mitigated with the use of mansard or other similar roof forms on the third floor, pronounced and overhang cornice lines, bay windows, recessed entries with canopies. Of these formal and scaling elements, the project employs a canopy at the entrance, a recessed entry, overhanging cornice at the third floor, and window bays. The fourth floor is made recessive to emphasize the contextual three-story massing of the main portion of the building relating more directly in scale and form with the triple-deckers across the street.
- *A-2 Composition of Principal Facades:* The composition of the street-facing facade is consistent with context in terms of using symmetrical bays (two or three bays) that are oriented to the street. The rhythm, size, and proportion of windows is a contemporary exaggeration of the traditional design – staff found that the bays and the balconies bring articulation, vertical proportion, and human scale to the large windows.
- *A-3 Relationship to the Street:* The building placement is consistent with the spacing of the residential fabric – slightly setback from sidewalk to allow for stoops and provide privacy. The building is not parallel to the street in order to meet the side yard setback requirements – this is a subtle angle and less critical due to the fact that there is only one neighboring property that establishes a street wall on this block.

Principle B Massing – Met – Buildings in the neighborhood with similar massing and proportion (double-triples) that are wider at the street use changes in massing, like the roof form and bays, to mitigate the scale and provide a pedestrian-friendly, visually interesting street presence. The building emphasizes the double-triple massing by creating a strong roof line at the third floor and varies the street façade with plane changes.

- *B-1 Massing:* The principal mass is reminiscent of a double triple-decker found in the context – revisions to the cornice line at the third floor, the stepback of the fourth floor unit help to emphasize that three-story contextual massing. A recess was added at the center of the mass to create recessed entry and provide a façade plane change creating a similar effect as a window bay.
- *B-2 Roof Forms:* The proposed 7th unit on the top floor has been centered and stepped back with a material change – these three actions make that fourth floor recessive and the flat roof form of the primary mass is dominant.
- *B-4 Roof Pitch:* The roofs are monopitch/ flat roofs.
- *B-5 Façade Articulation:* The project employs two of the required articulation elements – covered entry, recessed entry. Small balconies are also used.
- *B-6 Garages:* Not applicable.

Principle C Orientation to the Street – Met – The project is oriented to the street with a street-facing door.

- *C-1 Entrances:* The entry is street-facing and emphasized with a canopy and recess.
- *C-2 Visual Privacy:* Visual privacy is adequately addressed; ground floor windows are higher than 48” above adjoining sidewalk grade; the ground floor is adequately raised above sidewalk grade appropriate for private residential buildings with living space on the ground floor (at least 24” is required by the standard).
- *C-3 Transition Spaces:* The project uses a canopy at the entrance, the building is set back with planters.

Principle D Proportion and Scale – Met – The façade elements are proportionate and scaled to the overall building.

- *D-1 Windows:* The majority of windows are rectangular and have vertical proportion; window proportion is not a proportion found in the context, however.
- *D-2 Fenestration:* The project appears to meet the 12% fenestration requirement and appropriately scaled to the massing of the building.
- *D-3 Porches:* The balconies included in this project are less than 48 sf and not do not meet this standard.

Principle E Balance – Met – The building façade composition creates a sense of balance with good use of overall and local symmetry and articulation of façade materials.

- *E-1 Window and Door Height:* The majority of window and door head heights align along a common horizontal datum.
- *E-2 Window and Door Alignment:* The majority of windows shall stack so that centerlines of windows are in vertical alignment.
- *E-3 Symmetricality:* Primary window compositions are arranged symmetrically around discernable vertical axes.

Principle F Articulation – Met – Based on the information given, it appears the project employs visually interesting and well composed facades.

- *F-1 Articulation:* Trim and balcony details will create shadow lines on front façade.
- *F-2 Window Types:* Two window types at street façade.
- *F-3 Visual Cohesion:* The visual cohesion of the façade is good – one siding material proposed.
- *F-4 Delineation between Floors:* The floors are delineated by fenestration patterns, balconies, watertable.
- *F-5 Porches, etc.:* The canopy is well integrated into the overall design and highlights the entrance. Balcony railings are used to provide articulation and shadow lines to the front façade.
- *F-6 Main Entries:* The main entry is emphasized with prominent placement facing the street, recessed, and the use of a canopy.
- *F-7 Articulation Elements:* The cornice is pronounced and has an overhang similar to those found in context multi-family buildings; the trim details are not clear; the façade offset is at least 12".

Principle G Materials – Met– The material choices are well-placed and the siding is a contemporary version of clapboard.

- *G-1 Materials:* The residential context is predominantly clapboards with occasional shingle or brick. The proposal uses fiber cement clapboard with horizontal orientation – the reveal is larger than the traditional scale. Please indicate on the elevations the material selection for the water table.
- *G-2 Material and Façade Design:* The materials are appropriately placed according to their nature – concrete base?, clapboard above.
- *G-3 Chimneys:* Not applicable.
- *G-4 Window Types:* Two window types on street façade.
- *G-5 Patios and Plazas:* Not applicable.

Additional Submittals Required:

Please upload the digital plans and documents to address staff comments. Upon receipt of the revised material, the City of Portland will review the additional plans and information for

conformance with applicable ordinances. Please be aware that an application expires within 120 days of the date upon which this written request for additional information was made and only *one set of revised plans* may be submitted for review. This item is scheduled to go before the Planning Board as a workshop item on April 25, 2017 at 7:00 pm. Following the workshop process, this item will be scheduled for a public hearing at the Planning Board's next available meeting and the staff will provide the Planning Board with a recommendation to approve, approve with conditions, or deny the final site plan.

If you have any questions, feel free to contact me at (207) 874-8725 or by email at mgrooms@portlandmaine.gov.

Sincerely,

Matthew Grooms
Planner

Electronic Distribution:
Tuck O'Brien, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Victoria Morales, Associate Corporation Counsel
Anne Machado, Zoning Administrator
Captain Keith Gautreau, Fire
Jeff Tarling, City Arborist
Tom Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard & Curran

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

5-7 Cumberland Avenue - Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com> Thu, Apr 20, 2017 at 8:49 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>, Jeff Tarling <jst@portlandmaine.gov>

Hi Matt – I have reviewed the plans and offer the following preliminary traffic comments.

- I find the shared access/egress driveway condition to be acceptable and in fact believe this will also result in enhancements in on-sire circulation for 30 Merrill Street.
- I do not find the layout of the handicapped parking space to be acceptable. In my professional opinion, the end parking space will not be accessible. The applicant has provided a vehicle turning template graphic, but I continue to be concerned about the subject parking space being blocked. I would suggest alternative parking layout configurations be considered.
- All parking spaces (other than the handicap parking space) are proposed to be compact size spaces. I support a waiver from the City's Technical standards as it relates to the percent of compact parking spaces allowed on a site.
- The applicant has provided a conceptual construction management plan and my interpretation is that no impacts to the sidewalk or Cumberland Avenue will occur. The applicant should specifically note whether any closures/impacts to traffic and pedestrians are anticipated, and if so the plan should provide details on how transportation elements will be managed.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY·LIN INTERNATIONAL
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"One Vision, One Company"

bild ARCHITECTURE

ingenuity thoughtfulness empathy

February 24, 2017

Barbara Barhydt, Development Review Manager
City of Portland, Planning Division
389 Congress Street, 4th Floor
Portland, Maine 04103

RE: Level III Site Plan Application
6 Unit Residential Condominium Development
7 Cumberland Street
Portland, Maine

Dear Barbara,

On behalf of our client, Banner Properties LLC, we are pleased to submit this Level III Site Plan Application for the development of 6 residential condominium units at 7 Cumberland Street. We look forward to collaborating with you to help create much needed mid-level market-rate dwelling units on Munjoy Hill.

The building will be four (4) stories with a full basement and surface parking in the rear. The parking will be accessed by a shared driveway with the 30 Merrill Loft Condo Project off of Merrill Street. Pervious paving will be utilized along the drive and in the parking areas. The building will be accessed from a street entrance and a rear entrance to two accessible units.

In compiling this application, we have attempted to place the materials supporting our application in the same order as the City's checklist. Please feel free to contact me with any questions or concerns you may have regarding the attached application materials.

Sincerely,

Evan A. Carroll

Evan Carroll, AIA, LEED AP BC+D

bildarchitecture.com • evan@bildarchitecture.com • (207)408-0168
PO Box 8235, Portland, ME 04104 • 30 Danforth Street, Suite 213, Portland, ME 04101

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
p.m. (207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30

PROJECT NAME:

Condos at 7 Cumberland

PROPOSED DEVELOPMENT ADDRESS:

7 Cumberland Ave, Portland, ME 04101

PROJECT DESCRIPTION:

A new four story building with footprint of 1,791sf which will house (6) condominium units totaling of 7,567sf

CHART/BLOCK/LOT: 14-C-17 14-C-23

PRELIMINARY PLAN _____(date)
FINAL PLAN 2-22-17 (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Mike Boissonneau Business Name, if applicable: Banner Properties LLC Address: 126 Underwood Rd City/State : Falmouth, ME Zip Code: 04105	**Applicant Contact Information** Work #: 207-332-3038 Home #: Cell #: Fax#: e-mail: mboisso1@maine.rr.com
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: See Architect Address: City/State : Zip Code:	**Agent/Representative Contact information** Work #: Home #: Cell #: Fax#: e-mail:
Billing Information Name: Banner Properties LLC Address: 126 Underwood Rd City/State : Falmouth, ME Zip Code: 04105	**Billing Contact Information** Work #: 207-332-3038 Home #: Cell #: Fax#: e-mail: mboisso1@maine.rr.com

Engineer Jon Whitten Name: Plymouth Enginnering Address: 30 Lower Detroiy Road City/State : Plymouth, ME Zip Code: 04969	**Engineer Contact Information** Work #: (207)257-2071 Home #: Cell #: Fax#: e-mail: jon.whitten@plymouthenginerring.com
Surveyor Name: Richard Eaton Address: 58 Pleasant Street City/State : Westbrook, ME Zip Code: 04092	**Surveyor Contact Information** Home #: Work #: 207-854-2402 Cell #: Fax#: e-mail:
Architect Evan Carroll Name: Bild Architecture Address: PO Box 8235 City/State : Portland, ME Zip Code: 04104	**Architect Contact Information** Work #: (207)408-0168 Home #: Cell #: Fax#: e-mail:
Attorney Name: Address: City/State : Zip Code:	**Attorney Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Designated person/person(s) for uploading to e-Plan: Name: Evan Carroll e-mail: evan@bildarchitecture.com Name: e-mail: Name: e-mail:	

APPLICATION FEES:

Level III Development (check applicable reviews)	**Other Reviews (check applicable reviews)**
_X_Less than 50,000 sq. ft. ($750.00) ___50,000 - 100,000 sq. ft. ($1,000) ___100,000 – 200,000 sq. ft. ($2,000) ___200,000 – 300,000 sq. ft. ($3,000) ___over 300,00 sq. ft. ($5,000) ___Parking lots over 11 spaces ($1,000) ___After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___Planning Staff Review ($250) ___Planning Board Review ($500) _____ The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	___Traffic Movement ($1,500) ___Stormwater Quality ($250) ___Subdivisions ($500 + $25/lot) # of Lots___x $25/lot = _____ ___Site Location ($3,500, except for residential projects which shall be $200/lot) # of Lots___x $200/lot = _____ ___Other _____ ___Change of Use ___Flood Plain ___Shoreland _X_Design Review ___Housing Replacement ___Historic Preservation

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov
(Please be sure to designate a person who will be responsible for uploading documents and drawings.)
This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

   Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"

6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:**
Evan Carroll	2.24.2017

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	4476 sq. ft.
Proposed Total Disturbed Area of the Site	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.	
Impervious Surface Area	
Impervious Area (Total Existing)	sq. ft.
Impervious Area (Total Proposed)	sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	1,332 sq. ft.
Building Footprint (Total Proposed)	1,791 sq. ft.
Building Floor Area (Total Existing)	2,424 sq. ft.
Building Floor Area (Total Proposed)	7,567 sq. ft.
Zoning	R6
Existing	
Proposed, if applicable	
Land Use	
Existing	DUPLEX
Proposed	MULTI-FAMILY CONDOMINIUM
Residential, If applicable	
# of Residential Units (Total Existing)	2
# of Residential Units (Total Proposed)	6
# of Lots (Total Proposed)	1
# of Affordable Housing Units (Total Proposed)	NA
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	4
# of One-Bedroom Units (Total Proposed)	NA
# of Two-Bedroom Units (Total Proposed)	2
# of Three-Bedroom Units (Total Proposed)	NA
Parking Spaces	
# of Parking Spaces (Total Existing)	2
# of Parking Spaces (Total Proposed)	5
# of Handicapped Spaces (Total Proposed)	1
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	0
# of Bicycle Spaces (Total Proposed)	5
Estimated Cost of Project	$820,000

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
X		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
		Proposed grading and contours;	
		Existing structures with distances from property line;	
		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
		Preliminary infrastructure improvements;	
		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
		Exterior building elevations.	

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Completed Application form
X		1	* Application fees
X		1	* Written description of project
X		1	* Evidence of right, title and interest
NA		1	* Evidence of state and/or federal permits
X		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
NA		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
X		1	* Evidence of financial and technical capacity
X		1	Construction Management Plan
X		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
NA		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
X		1	Stormwater management plan and stormwater calculations
X		1	Written summary of project's consistency with related city master plans
X		1	Evidence of utility capacity to serve
X		1	Written summary of solid waste generation and proposed management of solid waste
X		1	A code summary referencing NFPA 1 and all Fire Department technical standards
X		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
X		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Final Site Plans including the following:**
X		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
X		Existing and proposed structures on parcels abutting site;	
X		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
X		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
X		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
NA		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
NA		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
X		Location of all snow storage areas and/or a snow removal plan;	
NA		A traffic control plan as detailed in Section 1 of the Technical Manual;	
X		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
NA		Location and proposed alteration to any watercourse;	
NA		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
NA		Proposed buffers and preservation measures for wetlands;	
X		Existing soil conditions and location of test pits and test borings;	
X		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
X		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
X		Grading plan;	
X		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

X		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
NA		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
X		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
NA		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
NA		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
X		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
NA		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST

A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
2.
3. Name address, telephone number of architect

4. Proposed uses of any structures [NFPA and IBC classification]
5.
6. Square footage of all structures [total and per story]

7. Elevation of all structures

8. Proposed fire protection of all structures
   - ***As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)***

9. Hydrant locations

10. Water main[s] size and location

11. Access to all structures [min. 2 sides]

12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

Some structures may require Fire flows using annex H of NFPA 1

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: 2/24/17

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 7 Cumberland Avemue

Chart Block Lot Number: 14 - C - 17

Proposed Use: Residential (6-unit)
Previous Use: Residential (2-unit)
Existing Sanitary Flows: _____ GPD
Existing Process Flows: _____ GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Existing latera; in Cumberland Ave.

Site Category		
	Commercial *(see part 4 below)*	
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____
Owner/Developer Name: Banner Properties
Owner/Developer Address: 126 Underwood Road, Falmouth, ME 04105
Phone: 332-3038 Fax: _____ E-mail: mboisso1@maine.rr.com
Engineering Consultant Name: Plymouth Engineering Inc. - Jon Whitten, Jr. PE
Engineering Consultant Address: PO Box 46, Plymouth, ME
Phone: 257-2071 Fax: 257-2130 E-mail: jon.whitten@plymouthengineering.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 120 X 6 = 720 GPD
Peaking Factor/ Peak Times: 21.6 gallons per minute peak domestic flow
Specify the source of design guidelines: *(i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)* _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: _____

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: _____GPD

Do you currently hold Federal or State discharge permits? Yes_____No _____

Is the process wastewater termed categorical under CFR 40? Yes_____No _____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and,the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Description of Project

The proposed project at 7 Cumberland Street consists of six condominium loft units to be sold at market rate.

The project design is presented under the alternative design review process and is compatible with the surrounding neighborhood in size, scale and siting. The building will be designed to high standards of energy efficiency and sustainable design, with features including a code-exceeding low-air infiltration and high-insulation building envelope, high efficiency mechanical systems, and low-VOC finishes.

The site and landscape design utilizes the on-site treatment of water run-off, indigenous plants that will not need irrigation once established, permeable paving, and lighting that meets both safety and light pollution standards. The project will provide five parking spaces and these spaces will be accessed via a shared driveway that uses an existing curb-cut on Merrill Street.

This private, market-rate development targets a market niche significantly lower than many or the luxury condo units recently constructed on Munjoy Hill. This is achieved by limiting partitions within units and utilizing conventional structure and materials. Banner Properties LLC is proud to be providing such a needed product in an urban location that places minimal burden on municipal infrastructure.

bildarchitecture.com • evan@bildarchitecture.com • (207)408-0168
PO Box 8235, Portland, ME 04104 • 30 Danforth Street, Suite 213, Portland, ME 04101

Recorded in Book 33271, Page 269.

QUITCLAIM DEED WITH COVENANT

KNOW ALL PERSONS BY THESE PRESENTS, that, FIVE SEVEN LLC, a Maine limited liability company, with a mailing address of 100 Congress Street, Portland, ME 04101, grants to BANNER PROPERTIES LLC, a Maine limited liability company, with a mailing address of 100 Congress Street, Portland, ME 04101, with Quitclaim Covenant, a certain lot or parcel of land, with any improvements thereon, situated in the City of Portland, County of Cumberland and State of Maine, as more fully described in Exhibit A attached hereto.

See Exhibit A

Being a portion of the premises conveyed from Scott Somero to Five Seven LLC by Warranty Deed dated July 1, 2016 and recorded in the Cumberland County Registry of Deeds Book 33264, Page 225.

This conveyance is a transfer to an abutter. Grantee shall merge the premises conveyed herein with Grantee's adjacent land described in a deed from Edward B. Boissonneau dated December 18, 2014 and recorded in the Cumberland County Registry of Deeds in Book 31989, Page 345.

Witness my hand and seal this 11th day of July, 2016.

FIVE SEVEN LLC

Witness

By Thomas Landry
Its Manager

STATE OF MAINE
COUNTY OF CUMBERLAND

July 11, 2016

Then personally appeared the abovenamed Thomas Landry as Manager of Five Seven LLC and acknowledged the foregoing to be his free act and deed in his stated capacity.

Before me,

Notary Public/Attorney at Law

SHARON E YOUNG
Notary Public-Maine
My Commission Expires
June 04, 2022

EXHIBIT A

A certain lot or parcel of land located off Cumberland Ave and Merrill Street but not adjacent to the streets located southeast of Banner Properties described in Book 31989 Page 345 and southwest of Munjoy Properties LLC described in Book 31588 Page 282 in the City of Portland, Cumberland County, and State of Maine and being more particularly described as follows.

Beginning at a 5/8" rebar set with cap at the northwest corner of Munjoy Properties LLC described in Book 31588 Page 282 and being N46°-18'-50"W ninety four and thirty nine hundredths 94.39' feet along the southwest bounds of Munjoy Properties LLC from a 5/8" rebar set with cap on the northwest bounds of Cumberland Ave at the southwest corner of Munjoy Propities LLC.

1) Thence S46°-18'-50"E three and zero hundredths 3.00' feet along the southwest bounds of Munjoy Properties LLC to a 5/8" rebar set with cap at the northeast corner of remaining land of grantor.
2) Thence S41°33'-31"W forty seven and eighty eight hundredths 47.88' feet along the northwest bounds of remaining land of grantor to a 5/8" rebar set with cap on the northeast bounds of land of Todd Grove described in Book 32062 Page 8.
3) Thence N43°-34'-54"W twelve and thirty four hundredths 12.34' feet along the northeast bounds of land of Grove to a 5/8" rebar set with cap on the southeast bounds of land of Erica Thompson described in Book 20400 Page 154.
4) Thence N41°-28'-00"E fourteen and fifty five hundredths 14.55' feet along the southeast bounds of land of Thompson to a 5/8" rebar set with cap on the southwest bounds of Banner Properties LLC described in Book 31989 Page 345.
5) Thence S42°-42'-48"E nine and thirty six hundredths 9.36' feet along the southwest bounds of Banner Properties LLC to a point being the southwest corner of Banner Properties LLC.
6) Thence N41°-33'-31"E thirty three and thirty three hundredths 33.33' feet along the southeast bounds of Banner Properties LLC to the point of beginning.

Containing 278 Square Feet, more or less.

Reference is made to a plan entitled "Boundary Survey & Topographical Map With Existing Conditions" dated 06-07-2016 and prepared by Richard W. Eaton P.L.S. of R.W. Eaton Associates of Westbrook, Maine.

Compliance with Zoning

Purpose:

The purpose of the R-6 is to "set aside areas on the peninsula for housing characterized primarily by multifamily dwellings at a high density providing a wide range of housing for differing types of households;" and the 7 Cumberland Ave project propose to provide loft style dwellings at a density of (6) units per 0.1027 acres or 58 units per acre.

Permitted Uses:

A multifamily dwelling is permitted in the R-6 zone, no open stairways are proposed, and no below-grade dwelling units are proposed. The project proposes (6) parking spaces, (4) are required.

Dimensional Requirements:

The proposed 7 Cumberland Ave. project conforms to all dimensional standards as outlined below:

	Requirement	Proposed
Min. lot size	2,000sf	4,476sf
Min. lot area/dwelling unit	725sf (6 units allowed on 4,476sf)	725sf 6 units proposed
Min. street frontage	20ft	43'-10" ft
Min. front yard setback	5ft (or average of adjacent yards) (adjacent yards are both 0ft)	5ft
Min. rear yard setback	10ft	10ft
Min. side yard setback	5ft	5ft
Structural stepbacks	Apply over 35ft	Roofline will step back at 33'-6"tall
Max. lot coverage	60%	37% (1,676sf)
Min. lot width	20ft	43' – 10"ft
Max. structure height	45ft	45'ft
Min. landscaped open space	20%	22%
Max. garage opening	2	0ft (0%)

The housing preservation and replacement ordinance does not apply as the existing structure on the property only has two units.

Gorham
SAVINGS BANK

February 16, 2017

City of Portland
Planning Division 4th Floor
389 Congress Street
Portland, Maine 04101

RE: Five Seven LLC

To Whom it May Concern:

Five Seven LLC is a customer of Gorham Savings Bank. To the best of our knowledge Five Seven LLC and the members of the LLC have the adequate experience and financial ability to develop the proposed project located at 7 Cumberland Avenue, Portland, Maine.

Should you need further information or clarification, please contact me at (207) 221-8428.

Thank you.

Sincerely,

David N. Moravick

David N. Moravick
Vice President – Commercial Services

HOUSEKEEPING PERFORMANCE STANDARDS
FOR:
7 CUMBERLAND AVENUE
PORTLAND, MAINE

Land Owner: **Banner Properties, LLC**
126 Underwood Road
Falmouth, ME 04105

Project Developer: **Banner Properties, LLC**

Responsible Party: **Banner Properties, LLC**

Prepared By: **Plymouth Engineering, Inc.**
PO Box 46
Plymouth, ME 04969
Tel: 207-257-2071 email: info@plymouthengineering.com

Introduction:
The owner/developer's contractor shall be responsible for maintaining proper housekeeping standards throughout the construction phase of the project. After the construction phase has been completed, the owner and/or operator of the project will be responsible.

Standards:
In accordance with the housekeeping performance standards required by MDEP chapter 500 stormwater regulations, the following standards shall be met:

1. **Spill prevention.** Controls must be used to prevent pollutants from construction and waste materials stored on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

2. **Groundwater protection.** During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

3. **Fugitive sediment and dust.** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems,

should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.

4. **Debris and other materials.** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

   To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Excavation de-watering.** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

   (a) Discharges from firefighting activity;

   (b) Fire hydrant flushings;

   (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);

   (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);

   (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;

   (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;

   (g) Uncontaminated air conditioning or compressor condensate;

   (h) Uncontaminated groundwater or spring water;

   (i) Foundation or footer drain-water where flows are not contaminated;

   (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));

(k) Potable water sources including waterline flushings; and

(l) Landscape irrigation.

7. **Unauthorized non-stormwater discharges .** The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:

   (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;

   (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;

   (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and

   (d) Toxic or hazardous substances from a spill or other release.

8. **Additional requirements.** Additional requirements may be applied on a site-specific basis.

9. **Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges.

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February 24, 2017

Traffic Generation and Maneuvering: 7 Cumberland Avenue, Portland, Maine

The proposed project at 7 Cumberland Avenue in Portland, Maine includes a six (6) unit building and associated parking area. The applicants are proposing five (5) compact parking spaces within a pervious paver parking area. One parking space has been designed to meet the ADA access regulations for small, residential development. Access to the parking area will be via an access easement over the 10' wide driveway at 30 Merrill Street. The developer of 30 Merrill Street is the same developer of this project.

The applicant is proposing 5 parking spaces in an effort to maximize the salability of the units and provide convenient, off-street parking for the majority of the units. As with many parking areas within the City of Portland, the parking area has been designed to maximize the available area, while minimizing impervious area and allowing for safe access for the vehicles. This is the reason for proposing compact car spaces exclusively.

The average number of vehicle trips per day, per unit is expected to be 5.81 with an average rate of 0.44 trips per unit within the peak hour. Given these average rates from the Institute of Transportation Engineers, the estimated trip generation volume of the recently approved driveway at 30 Merrill Street is 44 trips per day and 3 trips in the peak hour. The expected trip generation for this project will add 35 trips per day and 3 trips within the peak hour. The proposed single aisle entrance to the site (utilizing an existing curb cut) is expected to be adequate for these expected traffic volumes. Additionally, the access aisle at the rear of the building is expected to allow each vehicle to turn around and exit the property without backing into Merrill Street.

Prepared by:
PLYMOUTH ENGINEERING, INC.

Jon H. Whitten, Jr., P.E.
Senior Project Manager

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STORMWATER MANAGEMENT PLAN

7 Cumberland Avenue
Portland, Maine

The following Stormwater Management Plan has been prepared for Banner Properties, LLC to evaluate stormwater runoff and erosion control for the proposed 6-unit residential building to be located at 7 Cumberland Avenue, Portland, Maine.

Site Calculations

Total Property Area	5,100 S.F.
Existing Impervious Area	1,509 S.F.
New Pervious Parking/Drive	2,190 S.F.
New Impervious Roof	1,824 S.F.
Total Landscaped Area	1,086 S.F.
Total Developed Area	5,100 S.F.
Total New Impervious Area	315 S.F.

Existing Conditions

The development parcel is located on the northerly side of Cumberland Ave., near the intersection with Merrill Street in Portland, Maine. The property is 5,100 square feet in area and currently includes a two-unit residential building with driveways. There is a brick sidewalk along the frontage of the lot and a street tree.

The lot gently slopes from north to south (back to front). Runoff is conveyed to Cumberland Ave. via overland flow, in the lot's current state. A combined sewer overflow system within the street collects stormwater runoff in a limited number of catchbasins.

Proposed Development

The applicant is proposing to remove the existing building and replace it with a three-story building that will house (6) six residential units. A new, (5) five space parking lot will be constructed at the rear of the property. The parking lot will be accessed via an access easement over a recently approved driveway and parking area at 30 Merrill Street. The developer of 30 Merrill Street is also the developer of this project. The driveway and parking areas are and will be constructed with pervious, interlocking pavers. Project fencing will be installed along the rear and side property lines.

Drainage Pattern

Runoff leaves the development area via overland flow to Cumberland Ave. Runoff will continue to flow off the site via overland flow in the developed state. The entire parking area will be pervious pavers that will allow treatment of the first flush. First flush runoff will be collected within the filter layers of the sub-base and treated prior to being released into native soils and overflowing to the existing sidewalk at the front of the property. Once the sub-soil collection system is full, runoff will flow overland to Cumberland Ave., as it does today.

Flooding

The development area is not located within an area of flood hazard according to the Federal Insurance Rate Map 2300510014 B. See attached map.

Onsite & Offsite Soils

The on-site soils are shown on the attached Medium Intensity Soil Survey and are categorized as follows:

Soil Type Summary Table		
Soil Symbol	Soil Name	HSG
HlB	Hinckley Loamy Sand	A

Water Quality (BMP Standard)

The use of LID features, such as the pervious pavers, reduces the overall impervious footprint of the site while offering water quality treatment for runoff from the highest areas for potential contaminants. For this particular project, the water quality requirements will be met by use of pervious pavers within the driveway and parking areas.

Pervious Paver Filter Bed Sizing

We propose to provide treatment for the driveway/parking area by constructing a Pervious Paver Filter Bed within the sub-base of the and parking area and connecting the new system to the newly constructed system at 30 Merrill Street:

This bed will receive the runoff from approximately 2,156 s.f. of pervious pavers. The reservoir course of the Filter Bed is required to provide storage volume for 1" of runoff from the contributing area. The bed sizing is as follows:

Area of Watershed: 2,190 SF

Treatment Volume Required: Area x runoff depth: 2,156 SF x 1/12 FT = **179.66 CF**

Treatment Volume Provided:
Porosity = 40%, Bed Area = 2,190 s.f., Bed Depth = 1.25', Total Volume Treated = **1,095 CF**

Summary

Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion or other significant adverse effects downstream of the site.

Prepared by:
PLYMOUTH ENGINEERING, INC.

Jon H. Whitten, Jr., P.E.
Senior Project Manager

MAINTENANCE & OPERATIONS PLAN OF STORMWATER MANAGEMENT FACILITIES
FOR:
7 CUMBERLAND AVE., 6-UNIT BUILDING
PORTLAND, MAINE

Responsible Party: **Banner Properties, LLC**
126 Underwood Road
Falmouth, ME 04969

Plan Prepared by: **Plymouth Engineering, Inc.**
PO Box 46
Plymouth, ME 04969

List of Stormwater Measures:
Vegetated Areas
Pervious Pavers
Pre-Manufactured Green Roof System

Introduction:
The owner or operator of the proposed project will be responsible for the maintenance of all stormwater management structures, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book. At a minimum, the appropriate and relevant activities for each of the stormwater management systems will be performed on the prescribed schedule.

Inspection & Maintenance Tasks:
NOTE: The following instruction are excerpts from the Maine Department of Environmental Protection's *Stormwater Management for Maine, Volume III BMPs Technical Design Manual*, dated January 2006.

Vegetated Areas:
1. Routine Maintenance and Inspection: The area should be inspected for failures following heavy rainfall and repaired as necessary for newly formed channels or gullies, reseeding/ sodding of bare spots, removal of trash, leaves and/or accumulated sediments, the control of woody or other undesirable vegetation and to check the condition and integrity of the check dams.
2. Aeration: Vegetated areas may require periodic mechanical aeration to restore infiltration capacity. This aeration must be done during a time when the area can be reseeded and mulched prior to any significant rainfall.
3. Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter on the surface.
4. Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

Pervious Pavers:

1. **Winter Sand:** Use of winter sand is prohibited on pervious paver surfaces.
2. **Fertilization:** Use of Fertilization of the area over the pavers shall be prohibited.

3. **Monitoring and Inspections:** Inspecting the pervious paver system each month is recommended. Conduct the inspections after large storms to check for surface ponding at the inlet that may indicate clogging. Water levels in the system should be observed to ensure that the system drains within 72 hours after filling.
4. **Sediment Removal and Maintenance of System Performance:** Accumulated sediment and debris shall be removed monthly from joint spaces. The system must be rehabilitated or replaced if its performance is degraded to the point that applicable stormwater standards are not met.

Task Frequency:

Table 11-1 Long-Term Inspection & Maintenance Plan				
	Spring	**Fall or Yearly**	**After a Major Storm**	**Every 2-5 Years**
Vegetated Areas				
Inspect all slopes and embankments	X		X	
Replant bare areas or areas with sparse growth	X		X	
Armor areas with rill erosion with an appropriate lining or divert the ero-sive flows to on-site areas able to withstand concentrated flows. See Appendix A(5) of Rule.	X		X	
Stormwater Channels				
Inspect ditches, swales and other open stormwater channels	X	X	X	
Remove any obstructions and accumulated sediments or debris	X	X		
Control vegetated growth and woody vegetation		X		
Repair any erosion of the ditch lining		X		
Mow vegetated ditches		X		
Remove woody vegetation growing through riprap		X		
Repair any slumping side slopes		X		
Replace riprap where underlying filter fabric or underdrain gravel is showing or where stones have dislodge		X		
Culverts				
Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit	X	X	X	
Repair any erosion damage at the culvert's inlet and outlet	X	X	X	
Roadways and Parking Surfaces				
Clear accumulated winter sand in parking lots and along roadways	X			
Sweep pavement to remove sediment	X			
Grade road shoulders and remove excess sand either manually or by a front-end loader	X			
Grade gravel roads and gravel shoulders	X			
Clean-out the sediment within water bars or open-top culverts	X			
Ensure that stormwater is not impeded by accumulations of material or false ditches in the shoulder	X			

Table 11-1 Long-Term Inspection & Maintenance Plan				
	Spring	**Fall or Yearly**	**After a Major Storm**	**Every 2-5 Years**
Pervious Pavers				
Inspect and clean-out any pre-treatment measures that collect sediment and hydrocarbons entering an infiltration measure	X	X		
Provide for the removal and disposal of accumulated sediments within the infiltration area				X
Renew the infiltration measure if it fails to drain within 72 hours after a rainfall of one-half inch or more				X
Green Roof System				
Follow manufacturer's suggested maintenance requirements.				

Maintenance Log Sheet:

Maintenance Log Sheet 30 Merrill Street, Portland, ME			
BMP's	**Date Inspected**	**Repairs Needed?**	**Date Repaired**
Example	4/1/16	Y	4/2/16
1. Vegetated Areas			
2. Paved Areas			
3. Pervious Pavers			
4.			

Detailed Repair Notes:		
BMP Type	**Date**	**Description of Repair Made**
1	4-1-16	Sodded over eroded section (Example)

Project Consistency with City Master Plans

The proposed subdivision is precisely the type of development that is encouraged by Portland's Comprehensive Plan. It meets multiple comprehensive plan goals, including at least the following, each of which is discussed in more detail below:

FUTURE LAND USE PLAN

- Encourage orderly growth and development in appropriate areas, making efficient use of public services and preventing development sprawl. (State Goal A, Comprehensive Plan, Vol. I, Portland's Goals and Policies for the Future, p. 21);
- In the R-6 zone, encourage the existing compact lot development pattern typically found on the peninsula. (Comprehensive Plan, Vol. II, Future Land Use Plan, p. 65)

HOUSING POLICIES

- Advance the overall goal of maintaining a 25% share of Cumberland County's population, taking advantage of the City's capacity to accommodate more people (Comprehensive Plan, Vol. I, Portland's Goals and Policies for the Future, p. 21-22);
- Create new housing to support Portland as an employment center and to achieve an improved balance between jobs and housing, (Comprehensive Plan, Vol I, Portland's Goals and Policies for the Future, pp. 21-22);
- Ensure that an adequate supply of housing is available to meet the needs and preferences of all Portland households, including a continuum of options across all income levels. (Comprehensive Plan, Vol I, Portland's Goals and Policies for the Future, p. 44);
- Promote residential densities that are consistent with past development patterns. (Housing: Sustaining Portland's Future, p. 27);

SUSTAINABILITY

- Increase efficient use of transportation resources by avoiding decentralizing land use trends and supporting land use patterns that favor density and concentration. Comprehensive Plan. Vol I, Transportation Resources, T-7-8);

- Design housing to use new technologies and materials that reduce costs and increase energy efficiency. (Comprehensive Plan, Vol 1, Portland's Goals and Policies for the Future, p. 22)

A. Future Land Use Plan

In accordance with the mandate of the State Growth Management policies, the City designated all properties zoned R-6 as part of the growth area, however, the Future Land Use Plan went beyond that simple designation to assert that Portland needs growth to sustain it as a healthy city and to maintain its role as the economic, cultural and residential center for the region. (p. 55). Ideally, that growth will "provide housing near employment centers, support public transportation, attract families with children, expand the tax base, and stabilize neighborhoods." (p. 55)

In looking at where that growth can be accommodated within Portland, it found that only 9.75% of land in all residential zones is vacant, and in the highest density residential zone, the R-6 zone, only 2.77% of the land is vacant. As a way to foster the growth necessary to a healthy future, the Future Land Use Plan specifically endorses the recommendation, first made in Housing: Sustaining Portland's Future, to "rewrite[e] the zoning ordinance to encourage new housing and eliminate[e] barriers to development by allowing greater housing density and more efficient use of vacant land, infill lots, and redevelopment opportunities."

B. Housing Policies

Increased residential housing is viewed as a key to maintaining the health of the City. It is not sufficient for it merely to be an employment center for people to commute to by day, while living in and paying real estate taxes to suburban towns, The housing component of the comprehensive plan, Housing: Sustaining Portland's Future, calls for Portland to accommodate housing for more people so that the City increases to and then maintains a 25% share of the county's population. (p. 53)

One fundamental housing goal is to increase the supply of housing. To further that goal, the housing plan states the City should strive to ensure the construction of a diverse mix "that offers a continuum of options across all income levels." (p. 29) The City should also encourage higher density housing, "particularly located near services, such as schools, businesses, institutions, employers, and public transportation." (p. 30) Particular emphasis is placed on encouraging infill development, and housing within and adjacent to the downtown. In furtherance of the goal of developing a broad range of housing, it states the City should "[e]ncourage opportunities for the development of homes that are attractive to those households moving up in the real estate market . . so Portland can remain competitive with surrounding suburban communities. (p. 32) Additional supply-based

objectives include "identify[ing] vacant land and redevelopment opportunities throughout the city to facilitate the construction of new housing" and "[p]romot[ing] Portland as a Pro-Housing Community." (p. 33) While some parts of the housing plan emphasize affordable assisted housing, it states "the need for market rate housing for mid and higher income households is also critically important to Portland's future. Eliminating barriers to housing development and supporting market rate projects through the approval process can assist in this." (p. 62b)

Another basic housing plan goal is to maintain neighborhood stability and integrity. The plan calls for the City to "[e]ncourage innovative new housing development which is designed to be compatible with the scale, character, and traditional development patterns of each individual residential neighborhood." (p. 44) The plan advocates "work[ing] with owners and developers to find productive uses for vacant and underutilized lots." (p, 45) The plan makes it clear that it is not trying to encourage suburban, single-story ranch house infill development that was typical of prior periods. Instead the 2002 plan values traditional patterns of development and residential density, and criticizes the fact that (particularly in the R-6 zone) the traditional development pattern cannot be replicated under the zoning then in effect. (p. 27) Since that date, the City has implemented the R-6 small lot provisions so that infill development can replicate the traditional character and pattern of development.

C. Sustainability

The land use policy promoting infill development and increased housing stock in close proximity to downtown, discussed above, has been identified by the City as an important part of creating environmental and economic sustainability. ("Sustainable Portland", Final Report of the Mayor's Sustainable Portland Taskforce, November, 2007). The proposed development is consistent with these goals.

Similarly, the Sustainability Report identified green building as an important means for reducing pollution and our collective carbon footprint. (Id., p. 6) This building is designed to have numerous green features including: all landscaping requires no irrigation; roof water treated on site; building envelope sealed to prevent air leaks with insulation well above present construction standards; energy efficient windows located for cross natural ventilation, without air-conditioning systems; energy efficient systems and appliances, and air exchangers; low VOC paints, glues and sealants; light roof color to prevent heat buildup; and green building materials, flooring, siding, and recycled products.

Solid Waste Management Plan: 7 Cumberland Street

Solid waste and recycling will be collected curbside by the city using pay per use purple bags and approved recycling bins. Appropriate trash containers will be placed in the storage basement for weekly storage.

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bild ARCHITECTURE

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NFPA Code Summary

Building Area Information

Building Footprint:	1,676 SF
R-2 Net:	6,021 SF
Parking Net:	816 SF
Building Gross:	7,698 SF

NFPA Code Overview

Use:	New Residential Apartment Building, Storage
Construction:	No minimum requirement
Sprinkler:	NFPA 13R (Supervised to meet standards set forth in Chapter 10 Article VIII of the City of Portland)
Occupancy:	32 Occupants

NFPA 10

NFPA 10	6.2.1.1	Each floor shall have a single (2) unit Class A Fire Extinguisher

NFPA 101

3.3.32.5	New Building
6.1.8.1.5	Residential Occupancy – Apartment Building (Chapter 30)
6.1.13	Storage (Chapter 42)
6.1.14.4.1	Required Separation - 2hr between Apt Bldg & Storage
6.1.14.4.3	1 hour separation required in sprinkled building
6.2.2.3	Ordinary Hazard Contents
7.1.3.2.1	Stairs connecting four or more stories shall have a minimum of 2 hour rating
7.1.5.1	Min headroom: 7'-6”
7.1.6.3	Cross Slope limited to 1:48
7.2.1.2.3.2	Egress door min clear width: 32”
7.2.1.4	Door swing and force to open shall comply with this section
7.2.1.5	Door locks, latches and alarms shall comply with this section
7.2.2.2.1.1	Max riser height: 7”
	Min Tread depth: 11”
	Min headroom: 6'-8”
7.2.2.2.1.2	Min stair width: 36” (for occupancy under 50)
7.2.2.3.2.3	Min landing depth: stair width
7.2.2.4.4.1	Handrail height: 36”
7.2.2.4.4.6	Handrail shape: 1 ½” circular cross section
7.2.2.4.4.9	Handrails shall return to wall or newel post
7.2.2.4.4.10	Handrails shall extend 12” at top of stair and one tread length at bottom
7.2.2.4.5.2	Min guard height: 42”
7.2.2.4.5.3	Open guards shall not allow the passage of a 4” sphere
7.2.2.5.4	Stairway identification shall comply with this section.
7.2.6.3	Stair discharge shall have a 2-hr fire resistance rating.

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7.2.12.1.1	Sprinkler precludes need for area of refuge in stair.		
7.3.1.2	Occupancy Load		
	Residential Apartment:	200 gross at 7,164sf is	32 occupants
	Storage	NA	NA
	Total Occupant Load:		32 occupants

7.3.4	Min Egress width: 36”
7.4.1.1	See 30.2.4.4
7.8	Egress Illumination shall be in accordance with this section.
7.9	Emergency Lighting shall be in accordance with this section.
7.10	Marking for means of egress shall comply with this section.

30.1.6	No minimum construction requirements
30.2.1.1	Means of Egress shall comply with Chapter 7 and Chapter 30
30.2.4.4	Single stair permitted from building given

- 4 stories
- Less than 3 units/floor
- Two exits from basement
- No distance from unit door to stair
- 2-hr rated stair
- Self-closing doors
- No corridors
- 1 hr rating between units

30.2.5	Common Path Limit:	50’
30.2.5.4.2	Dead-End Limit:	50’
30.2.6.2	Max Travel Distance within unit (sprinkled):	125’
30.2.6.3.2	Max Travel Distance from unit door to exit (sprinkled):	200’
30.3.4	Fire detection and alarm system shall comply with this section.	
30.3.4.5	Smoke alarms shall be installed:	
	In every sleeping area	
	Outside every sleeping area	
	At least one on each level	
30.3.5.2	Sprinkler system NFPA 13R permitted for four or fewer stories.	
30.3.6.1.2	Corridor walls (sprinkled): ½ hour	
30.3.7.2	Dwelling unit separation (sprinkled): ½ hour	
42.1.6	No minimum construction requirements	
42.2.4.1	Single means of egress allowed within common path of travel limit.	
42.2.5	Dead End Corridor: 100'	
	Common Path of Travel: 100'	
42.2.6	Maximum Travel Distance: 400'	
42.2.3.2	Storage area walls and ceilings shall be Class A, Class V or Class C	

Design Standards Assessment

Overall Context

The building size and scale is comparable to the neighboring multifamily buildings on Cumberland and Merrill. The building offers loft units in the traditional double-wide style found throughout Portland and Munjoy Hill. Like other buildings in the area this building faces the street with a front door located adjacent to the sidewalk. The door is highlighted with an awning and a porch to further enhance the feeling of an entry. Although the current rhythm of the block is slightly broken; the scale, form and relationship to the street of the proposed building helps strengthen the rhythm of the block to be more comparable to the area.

Massing

The proposed building has a massing much like the double-wide triple decker buildings that exist throughout the neighborhood. At the top of the third story a prominent cornice to emphasize the 3-story mass. The flat roof of the building is common and contextual for this building type. As is traditional for this building type, there is no garage door facing the street, and the parking is found behind the building. The massing of the front façade is articulated by balconies and a covered porch. Three story bay windows are found on either side of the porch.

Orientation to the Street

The front of the building opens to the street via a single door sheltered by an awning. The front of the building is further enhanced by the use of intentional landscaping and a porch area. Not only does this help create the feeling of the front entry but if also helps create a transition space between the street and front door. The windows on the street façade are arranged in a symmetrical and rhythmic pattern. The first floor occupants will have visual privacy since the windows are greater than 48” from the adjoining sidewalk. Off-street parking is concealed behind the building.

Proportion and Scale

Windows and doors are sized, scaled and arranged to have a strong and intentional relationship to the overall building massing. Fenestration on the front façade it over 35%, providing the appropriate welcome to the public street. The canopy over the front door is of a width that has a solid presence on the front façade.

Balance

The building employs several techniques to achieve balance. The windows and doors head heights all align along a common horizontal datum line. All windows on every façade stack in vertical alignment. The window and doors are symmetrically arrange from one side of the building to the other.

Articulation

The articulation of details seeks to utilize contemporary design within the contextual massing and proportion framework. A visual cohesion of materials is achieved by using concrete at the foundation of the building with the siding material on top. Bay windows found in the Munjoy Hill area, are used in a contemporary style that also feature "Juliet Balconies."

Materials

Like other buildings in the area our pallet of materials is limited to only a few. Concrete is being used where appropriate such as foundations and planters. This not only helps articulate the building but gives a sense of permanence. The siding of the building will be wide reveal clapboard siding.

Crime Prevention Through Environmental Design Narrative

Natural surveillance will be used to the maximum extent possible with two loft apartments on the first floor. These units will have view of the entrance approach, side, and back of the building.

The front entrance and the shared parking entrance will be well lit, the back entry is not recessed, preventing the possibility of entrapment. The open parking area will be lit during night hours to discourage unwanted use.

The landscape plan clearly delineates public and private space, utilizing plantings and fencing. The use of such features will clearly delineate private space without the need for signage.

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Accessibility Narrative

The proposed project at 7 Cumberland Street will meet Fair Housing Accessibility Standards as is required for a new building. Due to the goal of providing housing at sub-market rates, no elevator will be installed and only the first floor units will need to meet the Fair Housing requirements. As no public spaces exist within the building, ADA will not apply.

The design includes two entrances: a contextual entrance and a practical entrance. The contextual entrance faces the street and can be used to access the central stairs. These elements give the building the same connection to the street that is found in the surrounding buildings and has documented historic precedent.

The practical entrance is located in the back of the building adjacent to the parking and represents the shortest path by which to leave the building. This back entrance and the way it is used is also consistent with the surrounding buildings. The back entrance is the accessible entrance, and is immediately adjacent to the accessible parking spot.

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Mechanical Systems Statement:

The HVAC design effort for the multi-family residential project at 7 Cumberland Street has not begun yet, but it will be specifed that all HVAC equipment will meet any applicable State and Federal emissions requitments.

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7171 LED

PROJECT:	
MODEL #:	
FIXTURE TYPE:	

STANDARD SPECIFICATIONS

HOUSING
Die cast, 0.090" thick housing designed for rugged applications. The housing features a 70 durometer o-ring seal that seats on the edge of the opening against the diffuser.

REFLECTOR
Formed aluminum, secured in position with hardware.

DIFFUSER
Injection molded clear prismatic polycarbonate, UV stabilized material with a base thickness of 0.090" that is resistant to damage.

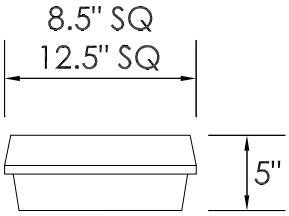
LED PERFORMANCE - 3500K STANDARD
120-277V - 3500K, 82 CRI - L80 rating - 60,000 hrs - L70 rating (projected) - 100,000 hrs
Source lumens noted. Amperage rated @ 110V input
Operating ambient temperature: -20°C / -4°F - 40°C / 104°F

B6LED - 6W nominal, .05 A input - 711 lm - 119 lm/W
B12LED - 12W nominal, .10 A input - 1422 lm - 120 lm/W
C9LED - 9W nominal, .10 A input - 1009 lm - 121 lm/W
C17LED - 17W nominal, .15 A input - 1829 lm - 111 lm/W
C24LED - 24W nominal, .20 A input - 2438 lm - 100 lm/W
C37LED - 37W nominal, .30 A input - 3641 lm - 99 lm/W

MOUNTING
The 7171 is designed to be installed on either the wall or ceiling and mounted with proper anchors (by others). The housing has removable plugs for conduit entry in the side or rear wire entry from a j-box or conduit.

FINISH
This series is available in a standard bronze polyester powder coat.

WARRANTY
5 year limited warranty on this LED product. Consult factory for details.



WET

Ceiling / Wall

ORDERING INFORMATION

7171 - _____ - _____ - _____
Model | 2. | 3. | 4. (if required)

2. SIZE

8 8.5" sq.
12 12.5" sq.

3. WATTAGE

8 SIZE
B6LED 1-B Series board
B12LED 2-B Series boards

C9LED 1-C Series board
C17LED 2-C Series boards
C24LED 2-C Series boards

12 SIZE
B12LED 2-B Series boards

C9LED 1-C Series board
C17LED 2-C Series boards
C24LED 2-C Series boards
C37LED 3-C Series boards

4. AVAILABLE OPTIONS

27K 2700K color temperature
B6LED - 634 lm - 106 lm/W
B12LED - 1266 lm - 107 lm/W
C9LED - 900 lm - 108 lm/W
C17LED - 1547 lm - 94 lm/W
C24LED - 2062 lm - 84 lm/W
C37LED - 3080 lm - 83 lm/W

30K 3000K color temperature
B6LED - 689 lm - 115 lm/W
B12LED - 1376 lm - 116 lm/W
C9LED - 977 lm - 117 lm/W
C17LED - 1763 lm - 107 lm/W
C24LED - 2351 lm - 96 lm/W
C37LED - 3512 lm - 95 lm/W

40K 4000K color temperature
B6LED - 710 lm - 119 lm/W
B12LED - 1421 lm - 120 lm/W
C9LED - 1010 lm - 121 lm/W
C17LED - 1862 lm - 113 lm/W
C24LED - 2482 lm - 101 lm/W
C37LED - 3707 lm - 100 lm/W

BAC Buy American Compliant
DIM Dimming driver (120-277V) (All except B6LED) (0-10V dimming control required)
ECW Extreme Cold Weather (-40°C / -40°F min.)
ES ENERGY STAR® (All except B6LED)
OCC[1,2] Occupancy Sensor (B12LED, C17LED & C24LED only)
PO1 Photo Control (120V)
PO2 Photo Control (208, 240, 277V)

1) Minimum operating temperature is -20°C / -4°F. Cannot be used with ECW
2) Occupancy sensor operates with microwaves and is not recommended for use in waiting areas with elevators

Specifications and dimensions subject to change without notice.
Consult your Brownlee Lighting representative for availability and ordering information.

BROWNLEE LIGHTING
www.brownlee.com

REVISED 2015.12.15

QUBE 200 SX
sconce

PROJECT

Job _____

Type _____

Part # _____

Notes

SPECIFICATIONS

Source	Xicato XTM LED module - up to 2000 lumens
C.C.T.	2700K, 3000K, 3500K or 4000K
Color Consistency	1x2 SDCM (MacAdam) along BBL, CCT +/- 40K to 70K, Duv +/- .001
CRI (Ra)	83 or 98
Driver / Location	Included / Remote mount or deep canopy options
Dimming	0-10V or phase dimming to 10% standard; DALI, DMX and 1% dimming available
Input Voltage	100 to 277VAC, phase dimmable versions are 120VAC only
Power	Up to 24 watts max, depending on LED module / driver
Reflecto	20°, 40° or 60° - field replaceable without tool
Material	CNC machined aluminum with stainless steel hardware
Finish	Powder coat - TGIC polyester for exterior and interior use
Weight	2.1 lb. [0.95 kg], ADA Compliant Version 1.8 lb. [0.8 kg]
Location	Listed for Wet & Damp locations
Approvals	ETL Listed to UL 1598, 2108, 8750 and CSA C22.2# 9 & #250.0
L80 Life	> 50,000 hours at 80% lumen maintenance based on IESNA LM-80-08
Warranty	Lifetime Limited Warranty - see warranty for details
IES Files	LM-79-08 IES files available at www.v2LightingGroup.com/download
Modification	Any modification or customization is possible - consult factory

ORDERING LOGIC

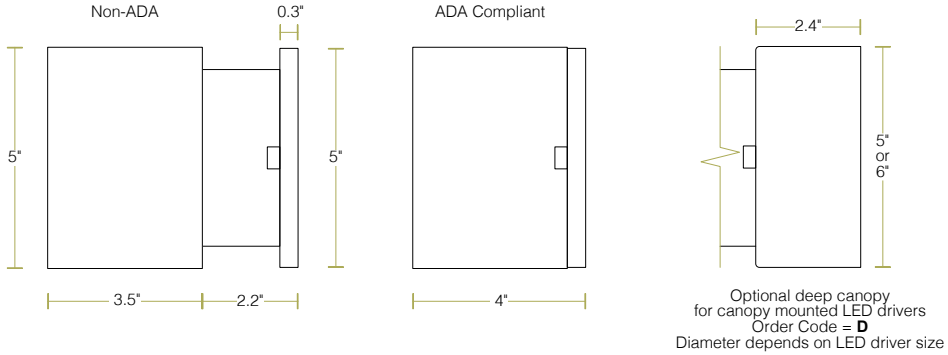
Model	Driver Location	Dimming	Mounting Location	Output	CRI *	C.C.T.	Reflector	Shell Color	Options
Q2SS -			-				-	-	
	R=Remote	**N**=None	**D**=Damp	**07**=700lm	**83**=83	**27**=2700K	**20**=20°	**XX**	**ADA**=ADA Compliant
	D=Deep Canopy	**P**=Phase	**W**=Wet	**10**=950lm	**98**=98*	**30**=3000K	**40**=40°	(see chart on page 4)	
		V=0-10V		**13**=1300lm		**35**=3500K	**60**=60°		
		Z=Other		**20**=2000lm		**40**=4000K		**ZZ**=Custom	

* 98 CRI not available in 2000 lm

Example Part Number: **Q2SS-RND-13832740-S3**
QUBE **2**00 **S**X **S**conce **- R**emote Driver, **N**o Dimming, **D**amp Location **- 13**00 lm, **83** CRI, **27**00K, **40**° Reflector **- S3** Red Shell

QUBE 200 SX
sconce

DIMENSIONS



All canopies fit standard 3.5" and 4" round and octagonal junction boxes

Not to scale, dimensions are nominal
Consult factory for CAD drawings

LED OPTIONS

Reflector Option	LED Specifications				
	LES[1]	CRI	Lumens[2, 3, 4]	Wattage[5] (W)	Efficacy[6] (lm/W)
20°, 40° & 60°	19mm	Ra = 83 ± 3	700	5.6	129
			950	8.2	118
			1300	11.7	111
			2000	19.5	102
		Ra = 98 R9 ≥ 90 R15 ≥ 95	700	7.4	97
			950	10.9	89
			1300	15.6	83

1 LES: Light Emitting Surface diameter
2 ±10%
3 Source lumens - see photometrics on page 3 for LOR to calculate delivered lumens
4 Higher lumen outputs are available in CORE / QUBE 300 and 400 series
5 Maximum luminaire wattage including LED driver = LED wattage x 1.2
6 Higher efficacies are available via lower drive currents - consult factory

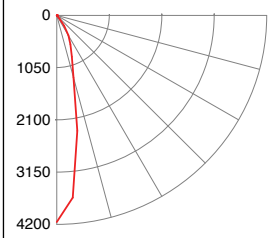
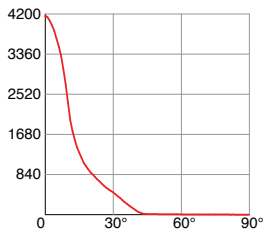
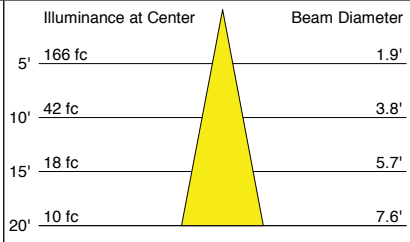
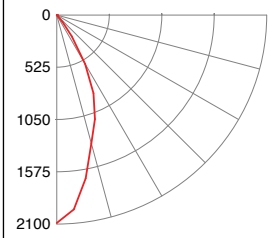
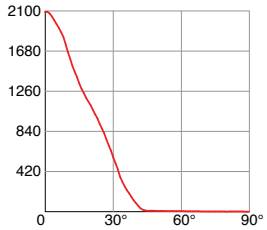
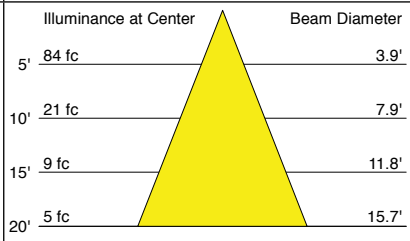
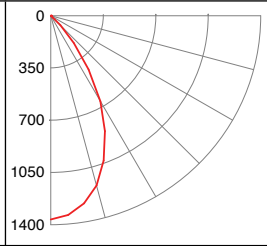
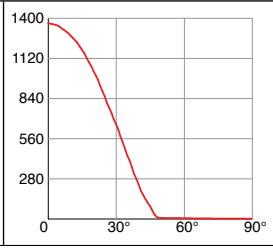
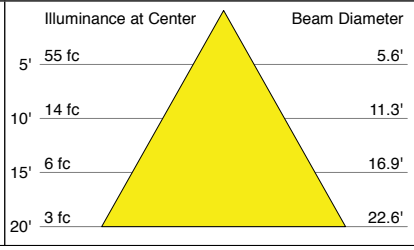
CONTROL OPTIONS

Standard LED Drivers* (included in base price)	Order Code **V** = 0-10V dimming to 10%
	Order Code **P** = Phase dimming to 10% Compatible with both forward and reverse phase dimmers
Optional LED Drivers*	eldoLED 0-10V, DALI, or DMX dimming to 0%
	Lutron Hi-lume™ A-series, EcoSystem or forward phase dimming to 1%
	Lutron Hi-lume™ 5-series, EcoSystem dimming to 5%

* All LED drivers must be mounted in a deep canopy or remote
* Standard LED drivers are suitable for Wet Location
* Optional LED drivers are suitable for Damp Location
* For EM applications:
  All LED drivers may be used with 3rd party inverter style systems

PHOTOMETRICS

LM-79-08 IES files available at www.v2LightingGroup.com/downloads

Beam Angle	Order Code	Intensity Plot (cd) (1300lm)	Polar Plot (cd) (1300lm)	Cone Diagram (1300lm)	Description
20°	**20**				CBCP = 3195 cd/klm Beam Angle = 21° Field Angle = 63° LOR = 89.4% Beam = full width @ 50% Field = full width @ 90%
40°	**40**				CBCP = 1607 cd/klm Beam Angle = 43° Field Angle = 73° LOR = 88.7% Beam = full width @ 50% Field = full width @ 90%
60°	**60**				CBCP = 1050 cd/klm Beam Angle = 59° Field Angle = 86° LOR = 85.2% Beam = full width @ 50% Field = full width @ 90%

Beam Shaping Options

Add the order code shown below to the options box at the end of the part number:

Order Code	Description
-HL	Honeycomb Louver
-DF	Diffusion Lens
-SF	Satin finish on any standard reflector
-LS	Linear Spread Lens (60° x 1°)
-WW	Wall Wash Lens (shifts beam 20° from vertical)

COLOR OPTIONS

Anodized Effect

- **A1** Clear Silver
- **A2** Champagne
- **A3** Light Bronze
- **A4** Medium Bronze
- **A5** Dark Bronze
- **A6** Black

Metallic

- **M1** Pearl
- **M2** Sea Foam
- **M3** Forest Gray
- **M4** Charcoal Gray
- **M5** Gunmetal Gray
- **M6** Dove Gray
- **M7** Old Copper
- **M8** Old Brass

Basic

- **L1** Gloss White
- **L2** Gloss Light Gray
- **L3** Gloss Dark Gray
- **L4** Gloss Black
- **T1** Textured Matte White
- **T2** Textured Matte Light Gray
- **T3** Textured Metallic Dark Gray
- **T4** Textured Matte Black

Sparkle

- **S1** Light Orange
- **S2** Deep Orange
- **S3** Red
- **S4** Burgundy
- **S5** Violet
- **S6** Deep Blue
- **S7** Sky Blue
- **S8** Bright Green

The complete range of powder coat colors from Tiger Drylac is available - consult factory
Custom match powder coat colors are available - consult factory
Printed or on-screen colors are only approximations - consult v2 Color Chip Set Rev.4 before specifying

AccuLite

Project: _____

Fixture Type: _____

Location: _____

Contact/Phone: _____

MSL SERIES

LED MINI SECURITY LIGHT 650 LUMENS

Cat. No.: _____

PRODUCT DESCRIPTION

The MSL Series LED Security Light is a small and unobtrusive luminaire designed to replace small incandescent and CFL fixtures. With a shallow profile, the MSL blends in seamlessly with both architecture and nature. The wide light pattern makes this fixture a great choice for commercial applications where an economical LED security light is needed. The MSL Security Light is recommended for mounting heights of up to 10 feet, for installations above doors, balconies, garage and warehouse entrances, and other applications traditionally lighted with incandescent and CFL fixtures. The MSL Series is rated for outdoor or indoor use.

PRODUCT SPECIFICATIONS

Optics The MSL Series has a white reflector and micro-prism lens that significantly reduces glare, increases visual comfort and acts as an environmental seal, protecting the LED from rain, snow and dust.

Dark Sky Compliance The MSL Series is compliant with most Dark Sky ordinances.

Construction A die cast aluminum housing is sturdy and attractive. Powder coating seals and protects the fixture from the elements • The micro-prism lens is made of acrylic that has a strong resistance to UV rays – ideal for outdoor environments.

Thermal Management The LED light source is secured to the aluminum housing that acts as a heat sink • The driver is also mounted directly to the housing to help keep the electronics cool and ensure 100,000 hour L70 performance.

Electrical The LED driver is suitable for 120-277VAC 50/60 Hz • An optional daylight sensor is available.

Daylight Sensors The MSL Series can be ordered with an optional daylight sensor for automatic dusk to dawn operation • Option "PC" is a factory installed, button style photo sensor mounted on the front of the fixture. Fixtures with motion sensor option are automatically supplied with a photo sensor to prevent operation of the fixtures during daylight hours. Fixtures with emergency battery are not available in combination with a daylight sensor.

Motion Sensor: An optional motion sensor is also available to control operation of the fixture based on occupancy • All fixtures with the motion sensor option include a daylight sensor to prevent the fixture from operating during daytime hours • The sensor turns the fixture ON when it detects motion, and off after a user-established time • The time the fixture stays ON can be set from a few seconds to a total of 20 minutes.

Emergency Battery: When emergency lighting is required, the MSL fixtures can be ordered with an optional, integral emergency battery • The battery will operate the fixture for 90 minutes during a power outage • Fixtures with this option need an un-switched power source to make sure the battery stays charged • A second switched source can be used for the main power to the fixture • The battery option will operate in ambient temperatures of between -4˚F and 122˚F (-20˚C and 50˚C) • Not available in combination with photo sensor option.

Shown with daylight sensor

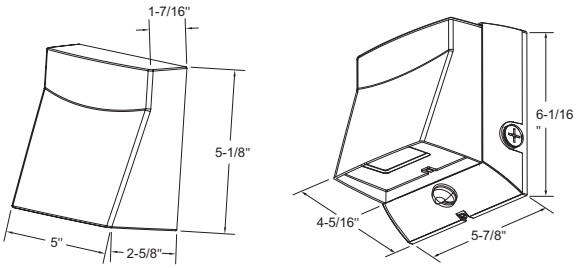
Standard

Shown with motion sensor

Shown with emergency battery

DIMENSIONS

OUTDOOR Next Generation 2013 LUMINAIRES



Mounting Mounts directly to a junction box • The back plate includes knockouts to fit most junction boxes • The installation process takes less than 5 minutes, with a single screw securing the housing to the back plate • Alternatively, the MSL Series has a provision for rear entry of 1/2" conduit • Fixtures with optional motion sensor or battery backup also include two threaded and plugged holes for side entry with 1/2" conduit.

Finish Polyester powder coating protects the housing • Available in bronze or white finishes.

Specifications subject to change without notice.

1300 S. Wolf Road • Des Plaines, IL 60018 • Phone (847) 827-9880 • Fax (847) 827-2925
220 Chrysler Drive • Brampton, Ontario • Canada L6S 6B6 • Phone (905) 792-7335 • Fax (905) 792-0064
Visit us at www.junolightinggroup.com

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JUNO LIGHTING GROUP

AccuLite®

MSL SERIES

LED MINI SECURITY LIGHT
650 LUMENS

Project:

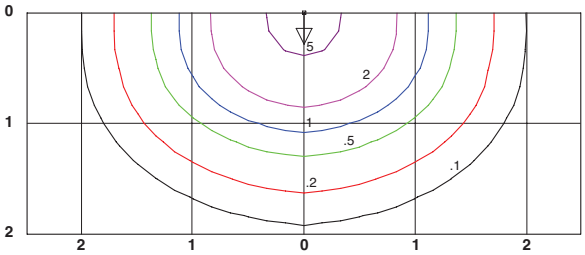
Fixture Type:

Location:

Contact/Phone:

Cat. No.:

PHOTOMETRY



Mounting Height	Multiplier
10′	0.5
8′	0.8
7′	1.0
6′	1.3
5′	2.0

Total Delivered Lumens = 663

Distance shown as multiples of mounting height. Illumination values shown in footcandles at 7′ mounting height. Illumination values shown are for fixtures running on normal power. For fixtures running on emergency battery apply a 0.5 multiplier.

Certifications Meets UL1598 and CSA C22.2-250 standards • Suitable for wet locations • Compliant with most Dark Sky ordinances • ADA compliant (except when ordered with motion sensor or battery backup)

PRODUCT CODES

Catalog Number	Description	Input Volts	CCT	Delivered Lumens	Input Watts
MSL235KUNBZ	Mini Security Light, bronze	50/60 Hz	3500K	663	11W
MSL235KUNBZPC	Mini Security Light, bronze, with photo sensor	60 Hz	3500K	663	11W
MSL235KUNWH	Mini Security Light, white	50/60 Hz	3500K	663	11W
MSL235KUNWHPC	Mini Security Light, white, with photo sensor	60 Hz	3500K	663	11W
MSL235KUNBZMS	Mini Security Light, bronze with motion sensor	50/60 Hz	3500K	663	12W
MSL235KUNWHMS	Mini Security Light, white with motion sensor	50/60 Hz	3500K	663	12W
MSL235KUNBZEM	Mini Security Light, bronze with emergency battery	50/60 Hz	3500K	663	13W
MSL235KUNWHEM	Mini Security Light, white with emergency battery	50/60 Hz	3500K	663	13W

Delivered lumens shown are for fixtures running on normal power. Fixtures running on emergency battery deliver approximately 325 lumens.

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220 Chrysler Drive • Brampton, Ontario • Canada L6S 6B6 • Phone (905) 792-7335 • Fax (905) 792-0064
Visit us at www.junolightinggroup.com Specifications are subject to change with out notice

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an AcuityBrands company

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

March 13, 2017

Jon Whitten
Plymouth Engineering
30 Lower Detroit Road
Plymouth, ME 04969

Re: 5-7 Cumberland Avenue, PO
Ability to Serve with PWD Water

Dear Mr. Whitten:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on March 2, 2017. Based on the information provided per revised plans dated 3/9/17, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter does not constitute approval of this project from the District. Review and approval of final plans is required.**

Conditions of Service

The following conditions of service apply:

- A new 4-inch fire service with 2-inch domestic service tapped off from it may be installed from the water main in Cumberland Avenue. The service should enter through the properties frontage on Cumberland Avenue at least 10-feet from any side property lines.

- The existing building is currently served with a ¾-inch domestic water service; the size of this service is undersized for the proposed use. This service must be terminated by shutting the corporation valve and cutting the pipe from the water main.

- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.

- Once the project is ready for construction, the owner or contractor will need to make an appointment to come in and complete a service application form and pay the necessary fees.

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Existing Site Service

According to District records, the project site does currently have existing water service. A 3/4-inch diameter copper water service line provides water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 6-inch diameter cast iron water main in Cumberland Avenue and a public fire hydrant located 175 feet from the site. The most recent static pressure reading was 47 psi on July 21, 2016.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Gordon S. Johnson, P.E.
Engineering Services Manager

bild
ARCHITECTURE

ingenuity thoughtfulness empathy

Neighborhood Meeting Invitation

March 23, 2017

Dear Neighbor:

Please join us for a neighborhood meeting as we share plans for the construction of a 6-unit condominium at 7 Cumberland Avenue in Portland.

Meeting Location: East End Community Center, 195 North St, Portland, ME
Meeting Date: April 4th 2017
Meeting Time: 6:00pm

The City code requires that property owners within 500 feet (1000 feet for proposed industrial subdivisions and industrial zone changes) of the proposed development and residents on an "interested parties list," be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions, please call Evan Carroll at 207-408-0168. Or email at evan@bildarchitecture.com

Sincerely,

Evan A. Carroll

Evan Carroll
Maine Licensed Architect

Note:
Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portland.gov

Name	**Address**
Katy Harkleroad	47 Howard St.
Ryan Harkleroad	47 Howard St.
Todd Grove	27 Lafayette
Wayne Valzania	27 Merrill St

Email

katyharkleroad@yahoo.com
rthark@hotmail.com
todd@teamgrove.com
wayne@redhookdesignalliance.com

7 Cumberland Avenue

Neighborhood Meeting Minutes

6:00pm Tuesday, April 4, 2017

Presenting:

- Evan Carroll, bild Architecture (EC)
- Mike Boissoneau, Banner Properties (MB)
- Tom Landry, Benchmark (TL)

Attendees:

- See attached sign-in sheet (ATT below, unless named)

Meeting Notes:

EC Welcome and agenda

- Intros
- Presentation
- Q and A
- Done by 7:00pm

Introductions:

All Presenters and attendees introduced themselves before the meeting

Presentation:

EC

Site Presentation:

- Illustrated orientation of project to street, park and neighboring buildings.
- Parking (5) spaces will be in the back
- Access to parking will be from shared driveway on Merrill Street
- Landscaping around building

Building Design

- Front entrance is connected to stairway
- The placement of the building matches the context of the neighborhood.
- Facade will be fiber cement, wide style, clapboard siding.
- The building's roofline is offset to work with the zoning requirements.
- A custom railing system will be in front of the Juliet balconies.
- Entries all have canopies
- Deck along backside for 3rd floor unit

ATT /Public Comment (ATT used when source of comment was not noted)

- Todd: How does new footprint compare to the existing footprint?
  - EC: Referenced the survey drawing on the PowerPoint

- Katie: How many parking spaces will there be?
  - EC: 5 with the possibility of 6

- Todd: Will there be a fence in the back of the property?
  - EC: Will check

- Katie: Is there an elevator in this property?
  - EC: No Elevator

- Todd: Curious to the open space next to 30 Merrill
  - MB: Open space is owned by a different property owner, but is currently being used as a staging area for 30 Merrill construction.

- Katie: Will the upper floors have water views? Will the large tree on site be saved?
  - TL: Upper floor will have water view.
  - EC: The large tree will have to be removed.

- Katie: When will the project start?
  - MB: Hopefully this year.

- Todd: What's the sticking point to getting the project started?
  - MB: With required workshops and public hearings, it's just a long process.

- Todd: It is an improvement to what is there currently.

- Katie: Is there a way to make it different from 30 Merrill by use of colors or siding at a minimum? This neighborhood can handle color.
  - EC: We will definitely look into that.

bildarchitecture.com • evan@bildarchitecture.com • (207)408-0168
PO Box 8235, Portland, ME 04104 • 30 Danforth St. Suite 213, Portland, ME 04104

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7 CUMBERLAND STREET

PORTLAND, MAINE 04101

PERMIT SET

2/24/2017

GENERAL NOTES

1. ALL MATERIALS, COMPONENTS, AND WORK ARE NEW AND SHALL BE PROVIDED IN THIS CONTRACT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

2. ALL WORK INCLUDED IN THIS CONTRACT SHALL CONFORM TO ALL STATE, NATIONAL AND OTHER CODES AND ORDINANCES WHICH APPLY TO THIS PROJECT.

3. IT IS THE INTENT AND MEANING OF THESE DRAWINGS THAT THE CONTRACTOR AND EACH SUBCONTRACTOR PROVIDE ALL LABOR, MATERIALS, TRANSPORTATION, SUPPLIES, EQUIPMENT, ETC. TO OBTAIN A COMPLETE JOB TO INDUSTRY STANDARD IN A PROFESSIONAL WORKMANLIKE MANNER.
   - CONTRACTORS AND SUBCONTRACTORS SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS PRIOR TO PERFORMANCE OF ANY WORK.
   - CONTRACTORS AND SUBCONTRACTORS SHALL INSTALL ALL MATERIALS AS PER THE CONSTRUCTION DOCUMENTS AND THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
   - INSTALLERS MUST BE TRAINED AND EXPERIENCED IN THE APPLICATION/INSTALLATION OF THE PRODUCTS/MATERIALS THAT THEY ARE INSTALLING.
   - PRODUCTS/MATERIALS MUST BE APPLIED/INSTALLED/USED IN CONDITIONS AS ALLOWED BY THE MANUFACTURER.
   - PRODUCTS/MATERIALS MUST BE APPLIED/INSTALLED/USED IN COORDINATION WITH ALL OTHER WORK CONDUCTED ON SITE.

4. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCY(IES) IMMEDIATELY TO THE ARCHITECT.

5. ANY DEVIATIONS WHATSOEVER FROM THE DRAWINGS AND/OR SPECIFICATIONS ARE NOT ALLOWED WITHOUT THE OWNER'S WRITTEN PERMISSION. FAILURE TO PROCURE SUCH WRITTEN AUTHORIZATION PLACES ALL RESPONSIBILITY FOR THE VARIATION ON THE CONTRACTOR.

6. AT THE END OF EACH WORKING DAY, THE CONSTRUCTION SITE SHALL BE LEFT IN A NEAT AND CLEAN MANNER.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS WHICH ARE REQUIRED FOR THE SATISFACTORY COMPLETION OF THE WORK AND THE OWNER SHALL BE RESPONSIBLE FOR PAYING ALL FEES, HOOK UP CHARGES, ETC. EXCEPTION: THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR THE SITE AND BUILDING PERMITS.

8. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER FOR THE SEQUENCE AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK. AREAS FOR STAGING ETC. MUST BE APPROVED BY THE OWNER.

9. THE CONTRACTOR SHALL DISPOSE OF AND / OR RECYCLE ANY CONSTRUCTION DEBRIS FROM THE PROJECT SITE AS REQUIRED BY REGULATING AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING DISPOSAL PERMITS WHICH ARE REQUIRED. CONSTRUCTION DEBRIS FROM THE PROJECT SITE SHALL BE DISPOSED OF IN AN APPROVED AND LEGAL MANNER.

10. DUTY OF COOPERATION: RELEASE OF THESE PLANS CONTEMPLATES FURTHER COOPERATION AMONG THE OWNER, THE CONTRACTOR, THE ARCHITECT AND THE ARCHITECT'S CONSULTANTS. DESIGN AND CONSTRUCTION ARE COMPLEX. ALTHOUGH THE ARCHITECT AND HIS CONSULTANTS HAVE PERFORMED THEIR SERVICES WITH DUE CARE AND DILIGENCE, THEY CANNOT GUARANTEE PERFECTION. COMMUNICATION IS IMPERFECT, AND EVERY CONTINGENCY CANNOT BE ANTICIPATED. ANY AMBIGUITY OR DISCREPANCY DISCOVERED BY THE USE OF THESE PLANS SHALL BE REPORTED IMMEDIATELY TO THE OWNER. FAILURE TO NOTIFY THE OWNER COMPOUNDS MISUNDERSTANDING AND MAY INCREASE CONSTRUCTION COSTS. A FAILURE TO COOPERATE BY A SIMPLE NOTICE TO THE OWNER SHALL RELIEVE THE OWNER AND THE ARCHITECT FROM RESPONSIBILITY FROM ALL COSTS.

11. THESE DRAWINGS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR SHALL PROVIDE FOR THE SAFETY, CARE OF UTILITIES AND ADJACENT PROPERTIES DURING CONSTRUCTION, AND SHALL COMPLY WITH STATE AND FEDERAL SAFETY REGULATIONS.

12. ALL MATERIALS AND WORK SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF FINAL PAYMENT.

13. COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES SO THEY DO NOT CONFLICT W/ ARCHITECTURAL FEATURES.

14. DIMENSIONS SHOWN ON DRAWINGS ARE TAKEN FROM FACE OF GYPSUM WALLBOARD UNLESS OTHERWISE NOTED

15. COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES SO THEY DO NOT CONFLICT W/ ARCHITECTURAL FEATURES.

16. ELECTRICAL WORK TO BE DESIGNED, PERMITTED AND INSTALLED BY CONTRACTOR.

17. EXISTING ELECTRICAL SYSTEM TO BE PRESERVED TO THE MAXIMUM EXTENT ALLOWABLE BY CODE.

18. PLUMBING WORK TO BE DESIGNED, PERMITTED AND INSTALLED BY CONTRACTOR.

19. HVAC WORK TO BE DESIGNED, PERMITTED AND INSTALLED BY CONTRACTOR.

ABBREVIATIONS

A/V	AIR/VAPOR
AFF	ABOVE FINISH FLOOR
B.O.	BOTTOM OF
CONC.	CONCRETE
E	EXISTING
ELEVS.	ELEVATIONS
FFE	FINISH FLOOR ELEVATION
FRP	FIBERGLASS REINFORCED PANELS
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM WALL BOARD
INSUL	INSULATION
O.C.	ON CENTER
P&S	BRACKET W/ CLOTHES POLE & SHELF
PT	PRESSURE TREATED/PAINTED
RCP	REFLECTED CEILING PLAN
SAT	SUSPENDED ACOUSTICAL TILE
SIM	SIMILAR
STRUCT	STRUCTURAL DRAWINGS OR STRUCTURAL ENGINEER
T.B.D.	TO BE DETERMINED
T.O.	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITE TILE

DRAWING LIST

		PERMIT SET 02/24/2017
G100	COVER SHEET	X
000	SURVEY	X
C1	SITE LAYOUT	X
C2	GRADING AND UTILITY PLAN	X
C3	LANDSCAPE PLAN	X
C4	EROSION & SEDIMENTATION CONTROL DETAILS	X
C5	DETAILS	X
G101	CONSTRUCTION ASSEMBLIES	X
G102	CONSTRUCTION ASSEMBLIES	X
G103	CODE SUMMARY	X
G104	LIFE SAFETY	X
A1.1	BSMNT / FIRST	X
A1.2	2ND 3RD FLOOR PLANS	X
A1.3	ROOF PLANS	X
A2.1	ELEVATIONS	X
A2.2	ELEVATIONS	X
A3.1	SECTIONS	X
A3.2	DETAILS	X
A3.3	DETAILS	X
A4.1	SCHEDULES	X
S1.0	GENERAL NOTES	X
S1.1	FOUNDATION PLAN	X
S1.2	FIRST FLOOR FRAMING PLAN	X
S1.3	SECOND FLOOR FRAMING PLAN	X
S1.4	THIRD FLOOR FRAMING PLAN	X
S1.5	ROOF FRAMING PLAN	X
S2.1	SECTIONS	X
S2.2	SECTIONS	X

PROJECT CONTACTS

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BILD ARCHITECTURE
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LANDSCAPE ARCHITECT
NA

STRUCTURAL ENGINEER
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Portland, ME
04104
207.408.0168
evan@bildarchitecture.com

bild ARCHITECTURE

LICENSED ARCHITECT 2/24/17 EVAN A. CARROLL No. 3687 STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND
PORTLAND, ME

REVISIONS
1 | 03-15-2017
2 | -
3 | -
4 | -
5 | -

PERMIT SET
NOT FOR CONSTRUCTION

DRAWN BY
EAC
SHEET TITLE
TITLE SHEET

ISSUE DATE
2/24/17
SHEET SCALE
NTS

G
100

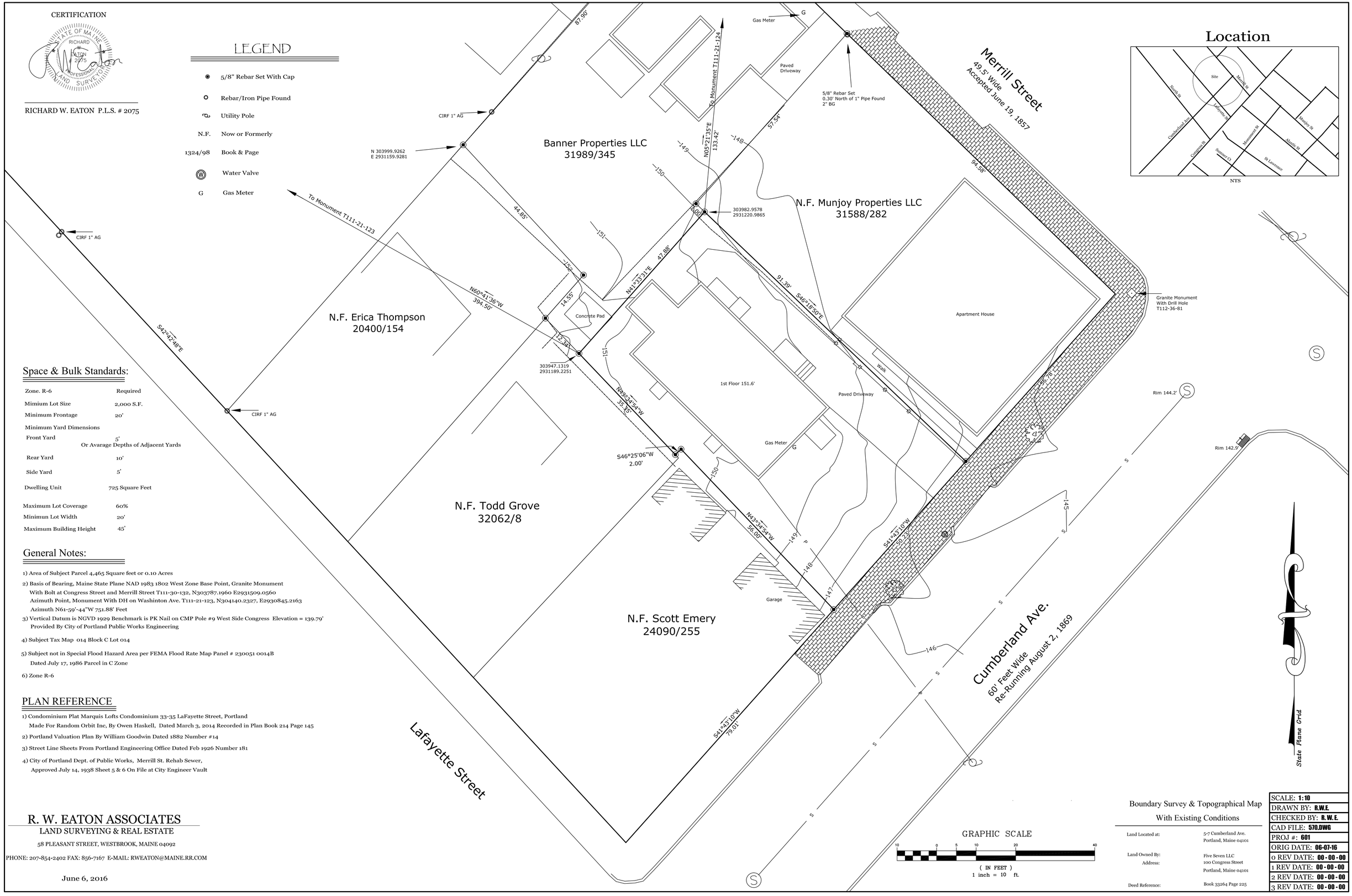
CERTIFICATION

STATE OF MAINE RICHARD W. EATON # 2075 PROFESSIONAL LAND SURVEYOR

RICHARD W. EATON P.L.S. # 2075

LEGEND

- 5/8" Rebar Set With Cap
- Rebar/Iron Pipe Found
- Utility Pole
- N.F. Now or Formerly
- 1324/98 Book & Page
- Water Valve
- G Gas Meter



Location

Space & Bulk Standards:

Zone. R-6	Required
Mimium Lot Size	2,000 S.F.
Minimum Frontage	20'
Minimum Yard Dimensions	
Front Yard	5' Or Avarage Depths of Adjacent Yards
Rear Yard	10'
Side Yard	5'
Dwelling Unit	725 Square Feet
Maximum Lot Coverage	60%
Minimun Lot Width	20'
Maximum Building Height	45'

General Notes:

1) Area of Subject Parcel 4,465 Square feet or 0.10 Acres

2) Basis of Bearing, Maine State Plane NAD 1983 1802 West Zone Base Point, Granite Monument With Bolt at Congress Street and Merrill Street T111-30-132, N303787.1960 E2931509.0560 Azimuth Point, Monument With DH on Washinton Ave. T111-21-123, N304140.2327, E2930845.2163 Azimuth N61-59'-44"W 751.88' Feet

3) Vertical Datum is NGVD 1929 Benchmark is PK Nail on CMP Pole #9 West Side Congress Elevation = 139.79' Provided By City of Portland Public Works Engineering

4) Subject Tax Map 014 Block C Lot 014

5) Subject not in Special Flood Hazard Area per FEMA Flood Rate Map Panel # 230051 0014B Dated July 17, 1986 Parcel in C Zone

6) Zone R-6

PLAN REFERENCE

1) Condominium Plat Marquis Lofts Condominium 33-35 LaFayette Street, Portland Made For Random Orbit Inc, By Owen Haskell, Dated March 3, 2014 Recorded in Plan Book 214 Page 145

2) Portland Valuation Plan By William Goodwin Dated 1882 Number #14

3) Street Line Sheets From Portland Engineering Office Dated Feb 1926 Number 181

4) City of Portland Dept. of Public Works, Merrill St. Rehab Sewer, Approved July 14, 1938 Sheet 5 & 6 On File at City Engineer Vault

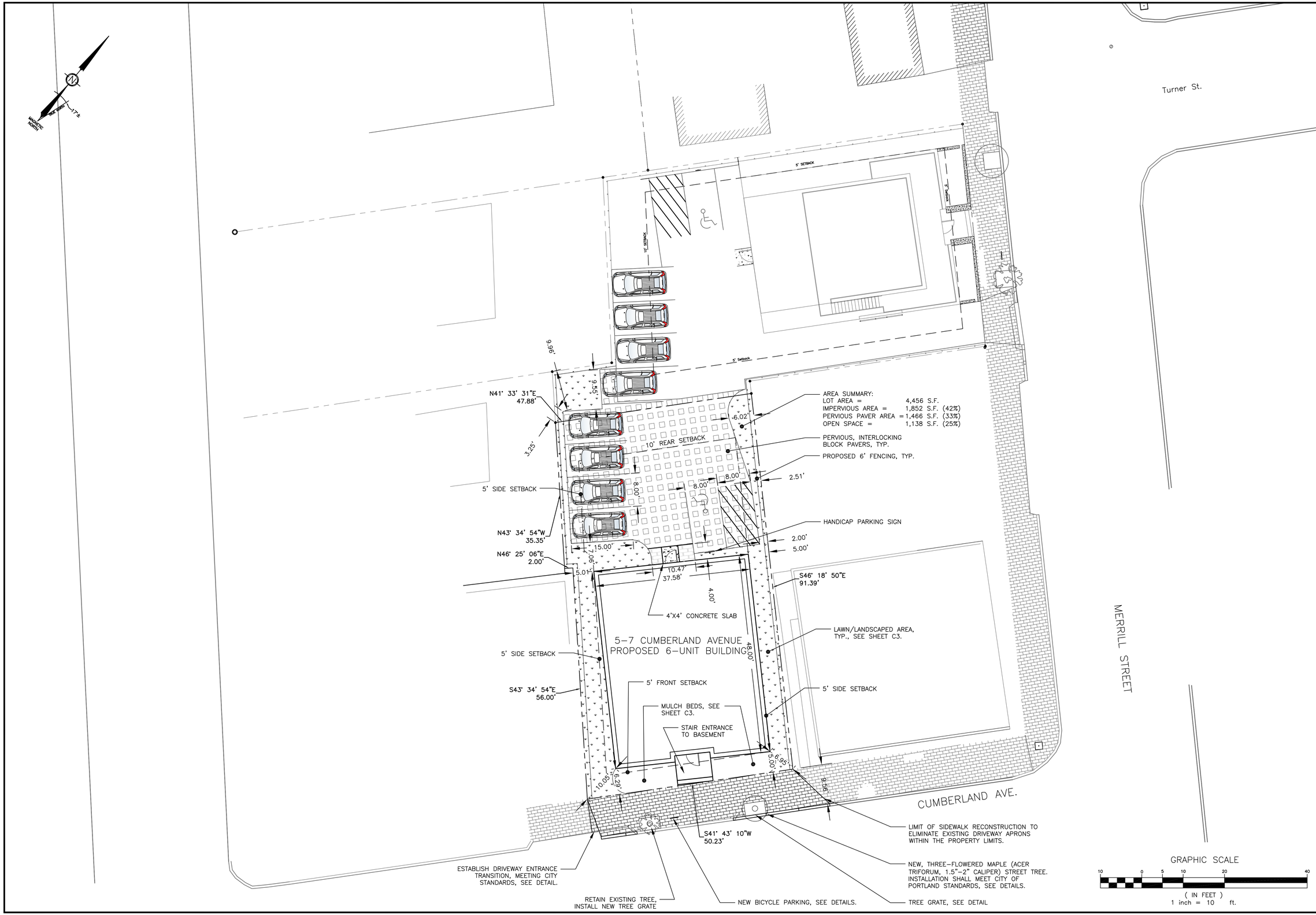
R. W. EATON ASSOCIATES
LAND SURVEYING & REAL ESTATE
58 PLEASANT STREET, WESTBROOK, MAINE 04092
PHONE: 207-854-2402 FAX: 856-7167 E-MAIL: RWEATON@MAINE.RR.COM

June 6, 2016

Boundary Survey & Topographical Map
With Existing Conditions

Land Located at:	5-7 Cumberland Ave. Portland, Maine 04101
Land Owned By:	Five Seven LLC
Address:	100 Congress Street Portland, Maine 04101
Deed Reference:	Book 33264 Page 225

SCALE:	1:10
DRAWN BY:	R.W.E.
CHECKED BY:	R. W. E.
CAD FILE:	570.DWG
PROJ #:	601
ORIG DATE:	06-07-16
0 REV DATE:	00-00-00
1 REV DATE:	00-00-00
2 REV DATE:	00-00-00
3 REV DATE:	00-00-00



REVISIONS

NO.	DATE	DESCRIPTION	DRAWN	APPD.

PROJECT NAME:
7 CUMBERLAND AVE.
PORTLAND MAINE

SHEET NAME:
SITE LAYOUT

DESIGNED: ARCHITECT
DRAWN: JHW
CHECKED: JHW
APPROVED: JHW
PLAN DATE: FEB. 22, 2017

PROJECT NO. 17004
DRAWING NO. 17004 B
FIELDBOOK:
SCALE: AS SHOWN
DATE ISSUED: __-__-__

CLIENT & OWNER:
BANNER PROPERTIES, LLC
170 LAURELWOOD DRIVE
FALMOUTH, ME 04105

Plymouth Engineering, Inc.
P.O. Box 46 30 Lower Detroit Road
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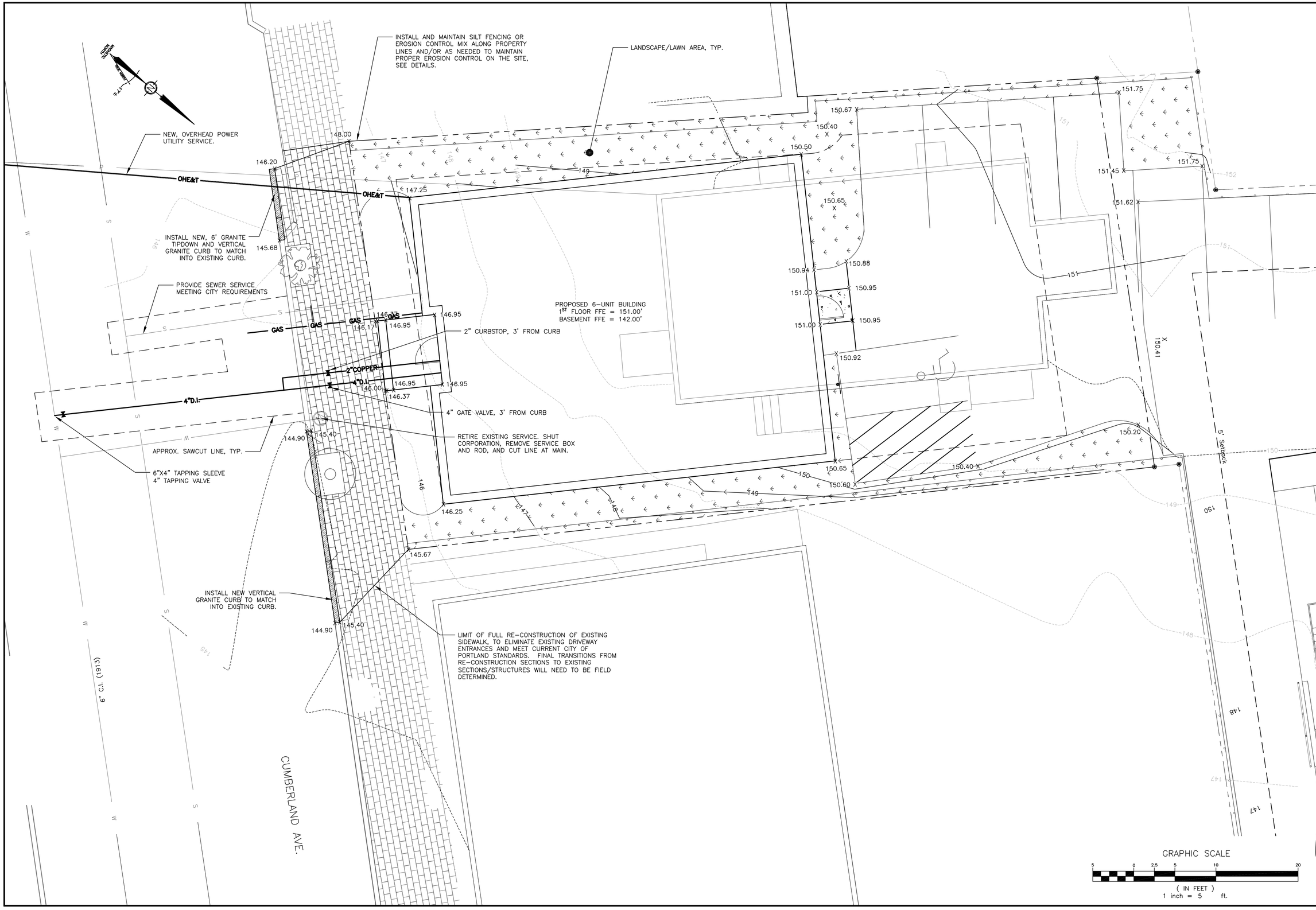
info@plymouthengineering.com
www.plymouthengineering.com

DRAWINGS NOT SEALED ARE FOR PLANNING PURPOSES ONLY AND ARE NOT INTENDED FOR PERMITTING, BIDDING OR CONSTRUCTION

SHEET 1 OF 5

C1



NO.	DATE	DESCRIPTION	DRAWN	APPD.
1.	3-9-17	REVISED PER PWD REVIEW COMMENTS	JHW	JHW

REVISIONS

PROJECT NAME:
7 CUMBERLAND AVE.
PORTLAND MAINE

SHEET NAME:
GRADING & UIT;LITY PLAN

PROJECT NO. 17004
DRAWING NO. 17004 B
FIELDBOOK:
SCALE: AS SHOWN
DATE ISSUED: __-__-__

DESIGNED: ARCHITECT
DRAWN: JHW
CHECKED: JHW
APPROVED: JHW
PLAN DATE: FEB. 22, 2017
CLIENT & OWNER: BANNER PROPERTIES, LLC
270 NARRAGANSETT DRIVE
FALMOUTH, ME 04105

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STATE OF MAINE
JOHN H. WHITEN
LICENSED
PROFESSIONAL ENGINEER

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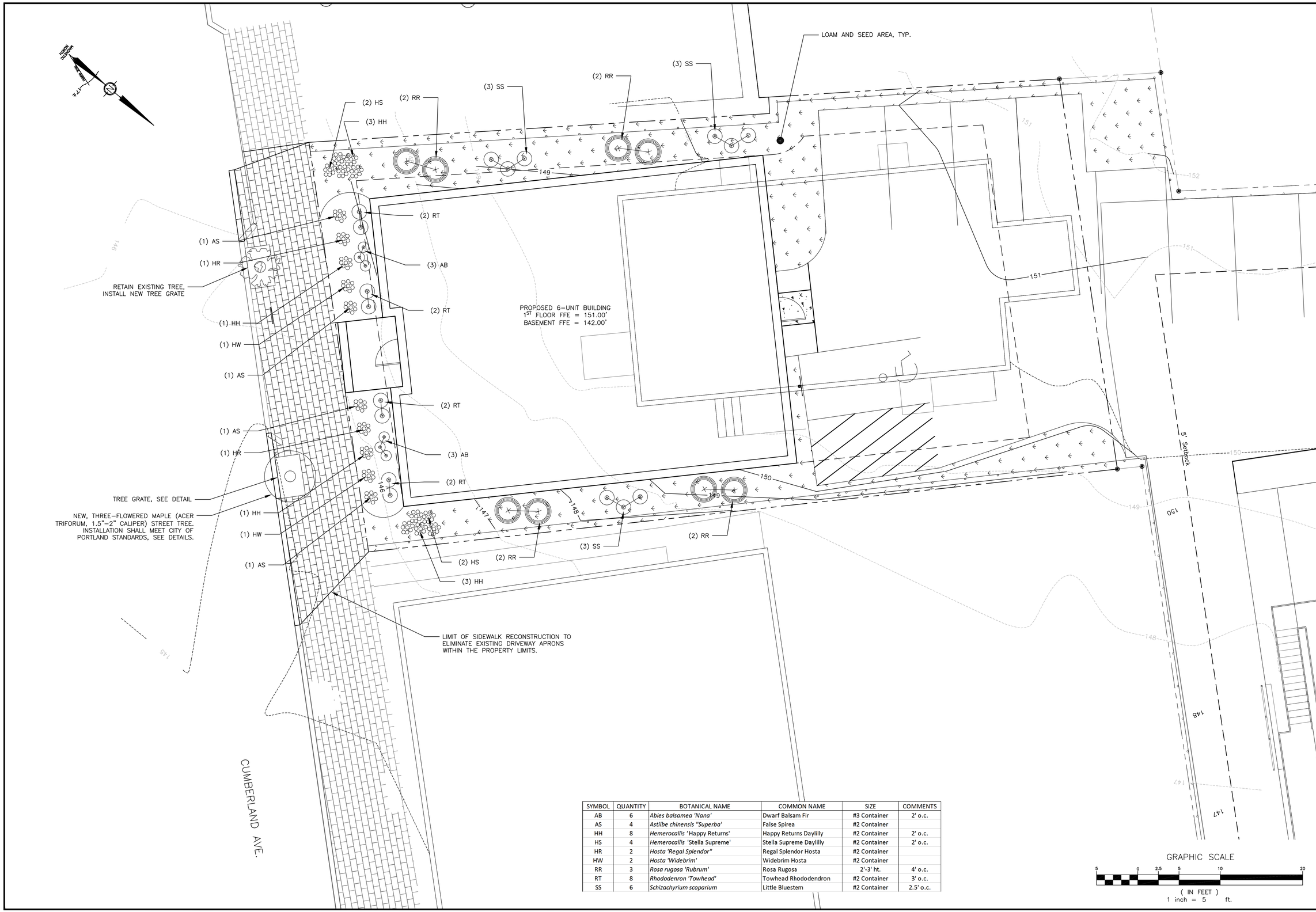
SHEET 2 OF 5

C2



SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
AB	6	*Abies balsamea 'Nana'*	Dwarf Balsam Fir	#3 Container	2' o.c.
AS	4	*Astilbe chinensis "Superba'*	False Spirea	#2 Container	
HH	8	*Hemerocallis* 'Happy Returns'	Happy Returns Daylilly	#2 Container	2' o.c.
HS	4	*Hemerocallis* 'Stella Supreme'	Stella Supreme Daylilly	#2 Container	2' o.c.
HR	2	*Hosta 'Regal Splendor"*	Regal Splendor Hosta	#2 Container	
HW	2	*Hosta 'Widebrim'*	Widebrim Hosta	#2 Container	
RR	3	*Rosa rugosa 'Rubrum'*	Rosa Rugosa	2'-3' ht.	4' o.c.
RT	8	*Rhododenron 'Towhead'*	Towhead Rhododendron	#2 Container	3' o.c.
SS	6	*Schizachyrium scoparium*	Little Bluestem	#2 Container	2.5' o.c.

REVISIONS

NO.	DATE	DESCRIPTION	DRAWN	APPD.

PROJECT NAME:
7 CUMBERLAND AVE.
PORTLAND MAINE

SHEET NAME:
LANDSCAPE PLAN

PROJECT NO. 17004
DRAWING NO. 17004 B
FIELDBOOK:
SCALE: AS SHOWN
DATE ISSUED: __-__-__

DESIGNED: ARCHITECT
DRAWN: JHW
CHECKED: JHW
APPROVED: JHW
PLAN DATE: FEB. 22, 2017

CLIENT & OWNER:
BANNER PROPERTIES, LLC
270 U.S. ROUTE ONE, SUITE 3
FALMOUTH, ME 04105

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NOT LICENSED
REGISTERED PROFESSIONAL ENGINEER

DRAWINGS NOT SEALED ARE FOR PLANNING PURPOSES ONLY AND ARE NOT INTENDED FOR PERMITTING, BIDDING OR CONSTRUCTION

SHEET 3 OF 5

C3

EROSION AND SEDIMENT CONTROL PLAN

Pre–Construction Phase
A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in 38 MRSA § 480–B. Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken. The site must be maintained to prevent unreasonable erosion and sedimentation. Minimize disturbed areas and protect natural downgradient buffer areas to the extent practicable.

BMP Construction Phase
A. Sediment barriers. Prior to the beginning of any construction, properly install sediment barriers at the edge of any downgradient disturbed area and adjacent to any drainage channels within the proposed disturbed area. Maintain the sediment barriers until the disturbed area is permanently stabilized.

B. Construction entrance: Prior to any clearing or grubbing, a construction entrance shall be constructed at the intersection with the proposed access drive and the existing roadway to avoid tracking of mud, dust and debris from the site.

C. Riprap: Since riprap is used where erosion potential is high, construction must be sequenced so that the riprap is put in place with the minimum delay. Disturbance of areas where riprap is to be placed should be undertaken only when final preparation and placement of the riprap can follow immediately behind the initial disturbance. Where riprap is used for outlet protection, the riprap should be placed before or in conjunction with the construction of the pipe or channel so that it is in place when the pipe or channel begins to operate. Maintain temporary riprap, such as temporary check dams until the disturbed area is permanently stabilized.

D. Temporary stabilization. Stabilize with temporary seeding, mulch, or other non–erodable cover any exposed soils that will remain unworked for more than 14 days except, stabilize areas within 100 feet of a wetland or waterbody within 7 days or prior to a predicted storm event, whichever comes first. If hay or straw mulch is used, the application rate must be 2 bales (70–90 pounds) per 1000 sf or 1.5 to 2 tons (90–100 bales) per acre to cover 75 to 90% of the ground surface. Hay mulch must be kept moist or anchored to prevent wind blowing. An erosion control blanket or mat shall be used at the base of grassed waterways, steep slopes (15% or greater) and on any disturbed soil within 100 feet of lakes, streams and wetlands. Grading shall be planned so as to minimize the length of time between initial soil exposure and final grading. On large projects this should be accomplished by phasing the operation and completing the first phase up to final grading and seeding before starting the second phase, and so on.

E. Vegetated waterway. Upon final grading, the disturbed areas shall be immediately seeded to permanent vegetation and mulched and will not be used as outlets until a dense, vigorous vegetative cover has been obtained. Once soil is exposed for waterway construction, it should be immediately shaped, graded and stabilized. Vegetated waterways need to be stabilized early during the growing season (prior to September 15). If final seeding of waterways is delayed past September 15, emergency provisions such as sod or riprap may be required to stabilize the channel. Waterways should be fully stabilized prior to directing runoff to them.

Permanent Stabilization Defined
A. Seeded areas. For seeded areas, permanent stabilization means an 90% cover of the disturbed area with mature, healthy plants with no evidence of washing or rilling of the topsoil.

B. Sodded areas. For sodded areas, permanent stabilization means the complete binding of the sod roots into the underlying soil with no slumping of the sod or die–off.

C. Permanent mulch. For mulched areas, permanent mulching means total coverage of the exposed area with an approved mulch material. Erosion control mix may be used as mulch for permanent stabilization according to the approved application rates and limitations.

D. Riprap. For areas stabilized with riprap, permanent stabilization means that slopes stabilized with riprap have an appropriate backing of a well–graded gravel or approved geotextile to prevent soil movement from behind the riprap. Stone must be sized appropriately. It is recommended that angular stone be used.

E. Agricultural use. For construction projects on land used for agricultural purposes (E.G., pipelines across crop land), permanent stabilization may be accomplished by returning the disturbed land to agricultural use.

F. Paved areas. For paved areas, permanent stabilization means the placement of the compacted gravel subbase is completed.

G. Ditches, channels, and swales. For open channels, permanent stabilization means the channel is stabilized with mature vegetation at least three inches in height, with well–graded riprap, or with another non–erosive lining capable of withstanding the anticipated flow velocities and flow depths without reliance on check dams to slow flow. There must be no evidence of slumping of the lining, undercutting of the banks, or down–cutting of the channel.

General Construction Phase
The following erosion control measures shall be followed by the contractor throughout construction of this project:

A. All topsoil shall be collected, stockpiled, seeded with rye at 3 pounds/1,000 sf and mulched, and reused as required. Silt fencing shall be placed down gradient from the stockpiled loam. Stockpile to be located by designation of the owner and inspecting engineer.

B. The inspecting engineer at his/her discretion, may require additional erosion control measures and/or supplemental vegetative provisions to maintain stability of earthworks and finish graded areas. The contractor shall be responsible for providing and installing any supplemental measures as directed by the inspecting engineer. Failure to comply with the engineer's directions will result in discontinuation of construction activities.

C. Erosion control mesh shall be applied in accordance with the plans over all finish seeded areas as specified on the design plans.

D. All graded or disturbed areas including slopes shall be protected during clearing and construction in accordance with the approved erosion and sediment control plan until they are adequately stabilized.

E. All erosion, and sediment control practices and measures shall be constructed, applied and maintained in accordance with the approved erosion and sediment control plan.

F. Areas to be filled shall be cleared, grubbed and stripped of topsoil to remove trees, vegetation, roots or other objectionable materials.

G. Areas shall be scarified to a minimum depth of 3 inches prior to placement of topsoil.

H. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements or codes.

I. All fills shall be placed and compacted in layers not to exceed 8 inches in thickness.

J. Except for approved landfills or non–structural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory lifts.

K. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills.

L. Fill shall not be placed on a frozen foundation.

M. Seeps or springs encountered during construction shall be handled appropriately.

N. All graded areas shall be permanently stabilized immediately following finished grading.

O. Remove any temporary control measures, such as silt fence, within 30 days after permanent stabilization is attained. Remove any accumulated sediments and stabilize.

Permanent Vegetation
Permanent vegetative cover should be established on disturbed areas where permanent, long lived vegetative cover is needed to stabilize the soil, to reduce damages from sediment and runoff, and to enhance the environment.

Seedbed Preparation
A. Grade as feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring, and maintenance.

B. Apply limestone and fertilizer according to soil tests such as those offered by the University of Maine soil testing laboratory. Soil sample mailers are available from the local cooperative extension service office. If soil testing is not feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 800 pounds per acre or 18.4 pounds per 1,000 square feet using 10–20–20 (n–p2o5–k2o) or equivalent. Apply ground limestone (equivalent to 50% calcium plus magnesium oxide) at a rate of 3 tons per acre (138 lb. Per 1,000 sq. Ft).

C. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, spring tooth harrow or other suitable equipment. The final harrowing operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared. All but clay or silty soils and coarse sands should be rolled to firm the seedbed wherever feasible.D. Remove from the surface all stones 2 inches or larger in any dimension. Remove all other debris, such as wire, cable, tree roots, concrete, clods, lumps or other unsuitable material.

E. Inspect seedbed just before seeding. If traffic has left the soil compacted; the area must be tilled and firmed as above.

F. Permanent seeding should be made 45 days prior to the first killing frost or as a dormant seeding with mulch after the first killing frost and before snowfall. When crown vetch is seeded in later summer, at least 35% of the seed should be hard seed (unscarified). If seeding cannot be done within the seeding dates, mulch according to the temporary mulching BMP and overwinter stabilization and construction to protect the site and delay seeding until the next recommended seeding period.

G. Following seed bed preparation, swale areas, fill areas and back slopes shall be seeded at a rate of 3 lbs./1,000 s.F. With a mixture of 35% creeping red h. Fescue, 6% red top, 24% Kentucky bluegrass, 10% perennial ryegrass, 20% annual ryegrass and 5% white Dutch clover.

I. Areas which have been temporarily or permanently seeded shall be mulched immediately following seeding.

J. Areas which cannot be seeded within the growing season shall be mulched for over–winter protection and the area should be seeded at the beginning of the growing season.

Winter Construction Phase
If an area is not stabilized with temporary or permanent measures by November 15, then the site must be protected with additional stabilization measures.

A. Permanent stabilization consists of at least 90% vegetation, pavement/gravel base or riprap.

B. Do not expose slopes or leave slopes exposed over the winter or for any other extended time of work suspension unless fully protected with mulch.

C. Apply hay mulch at twice the standard rate (150 lbs. Per 1,000 sf). The mulch must be thick enough such that the ground surface will not be visible and must be anchored.

D. Use mulch and mulch netting or an erosion control mulch blanket or all slopes greater than 8 % or other areas exposed to direct wind.

E. Install an erosion control blanket in all drainageways (bottom and sides) with a slope greater than 3 %.

F. See the vegetation measures for more information on seeding dates and types.

G. Winter excavation and earthwork shall be completed so that no more than 1 acre of the site is without stabilization at any one time.

H. An area within 100 feet of a protected natural resource must be protected with a double row of sediment barrier.

I. Temporary mulch must be applied within 7 days of soil exposure or prior to any storm event, but after every workday in areas within 100 feet from a protected natural resource.

J. Areas that have been brought to final grade must be permanently mulched that same day.

K. If snowfall is greater than 1 inch (fresh or cumulative), the snow shall be removed from the areas due to be seeded and mulched.

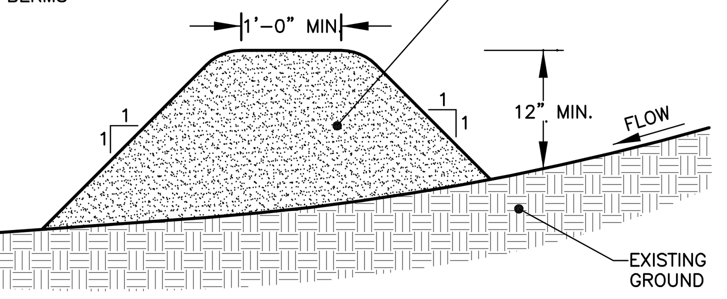
L. Loam shall be free of frozen clumps before it is applied.

M. All vegetated ditch lines that have not been stabilized by November 1, or will be worked during the winter construction period, must be stabilized with an appropriate stone lining backed by an appropriate gravel bed or geotextile unless specifically released from this standard by the department.

Maintenance and Inspection Phase
A. Contractor shall inspect disturbed and impervious areas, and erosion and stormwater control measures, areas used for storage that are exposed to precipitation, and locations where vehicles enter or exit the parcel at least once a week and before and after a storm event, prior to completion of permanent stabilization. A person with knowledge of erosion and stormwater must conduct the inspection. This person must be identified in the inspection log. If best management practices (BMPs) need to be modified or if additional BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

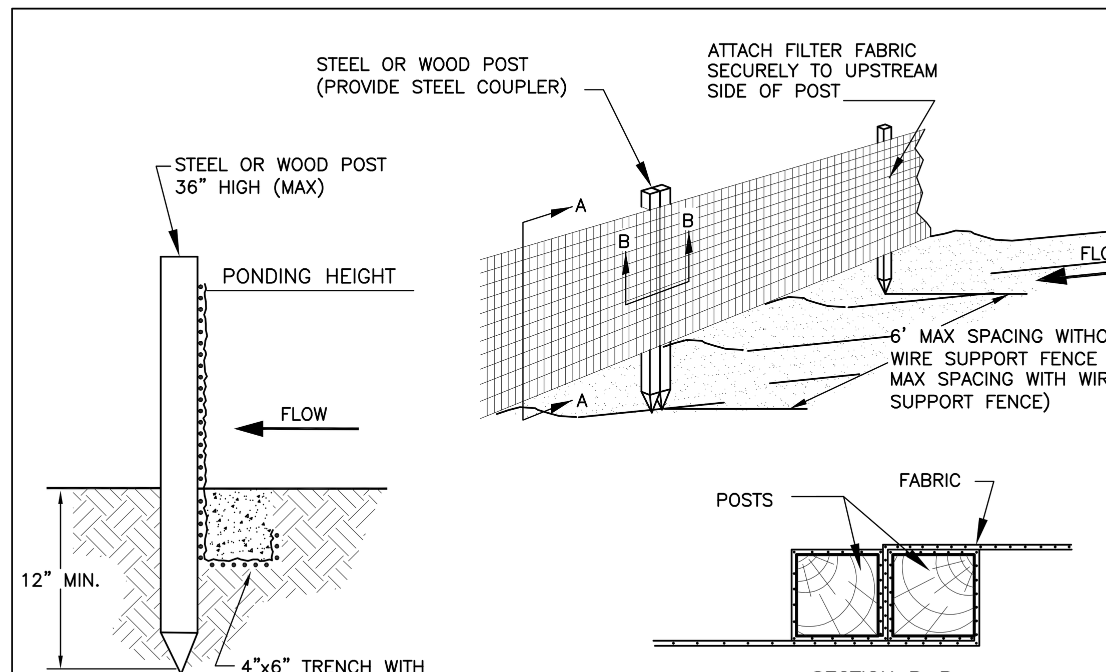
B. A log (report) must be kept summarizing the scope of the inspection, name(s) and qualifications of the personnel making the inspection, the date(s) of the inspection, and major observations relating to operation of erosion and sedimentation controls and pollution prevention measures. Major observations must include: BMPs that need to be maintained; location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location; and location(s) where additional BMPs are needed that did not exist at the time of inspection. Follow–up to correct deficiencies or enhance controls must also be indicated in the log and dated, including what action was taken and when.

NOTE:
DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.

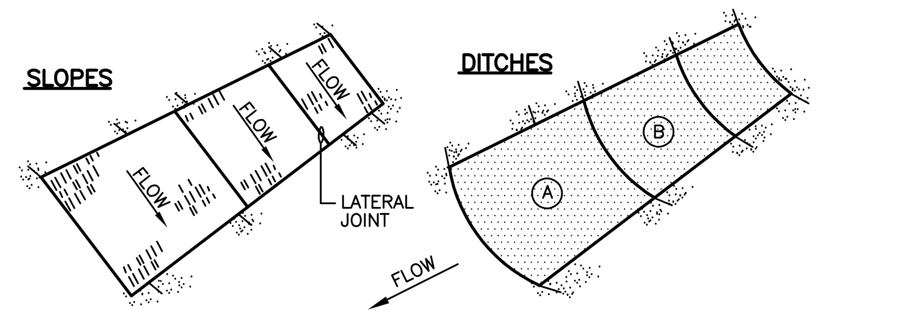


EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL–GRADED MIXTURE OF PARTICLE SIZES & MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
– THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80% – 100% DRY WEIGHT BASIS
– PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85% PASSING A 0.75" SCREEN
– THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
– LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
– SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm.
– ph SHALL FALL BETWEEN 5.0 – 8.0.

EROSION CONTROL MIX BERM
NOT TO SCALE

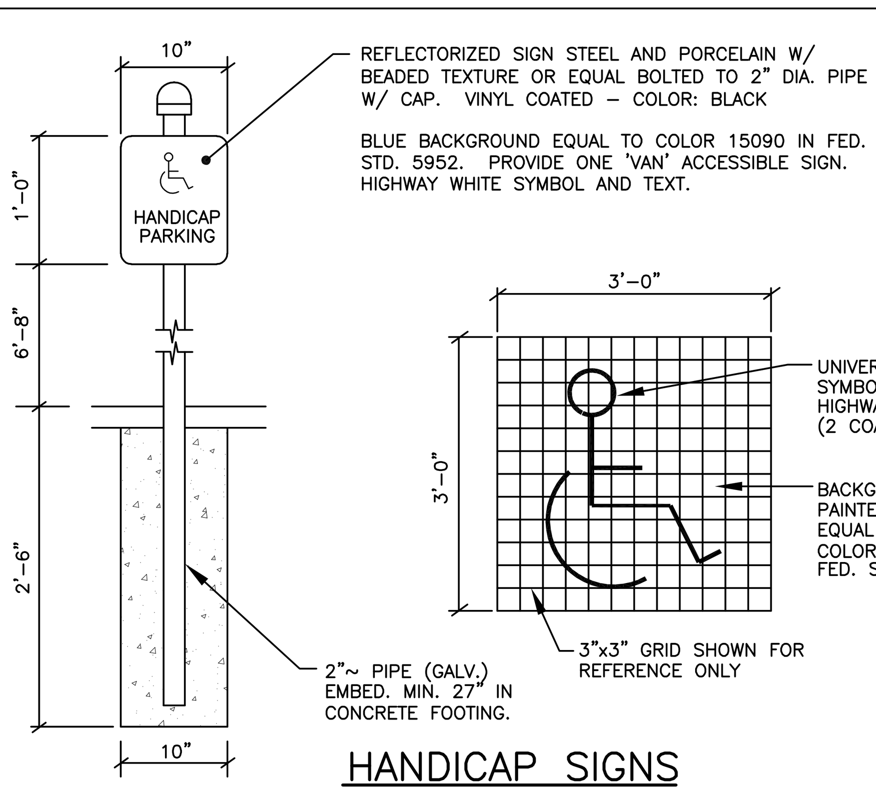


SILT FENCE
NOT TO SCALE

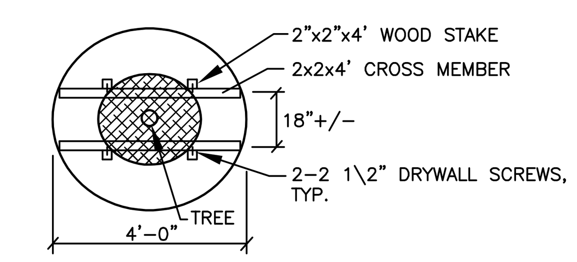


NOTES:
1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.
2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.
5. WIRE STAPLES TO BE MIN. OF #11 WIRE, 6" LONG & 1–1/2" WIDE.
6. USE NORTH AMERICAN GREEN DS 150 (OR APPROVED EQUAL) ON SLOPES BETWEEN 4:1–2:1. USE NORTH AMERICAN GREEN VMAX SC250 PERMANENT TURF REINFORCEMENT MAT (OR APPROVED EQUAL) ON SLOPES 2:1 AND STEEPER..

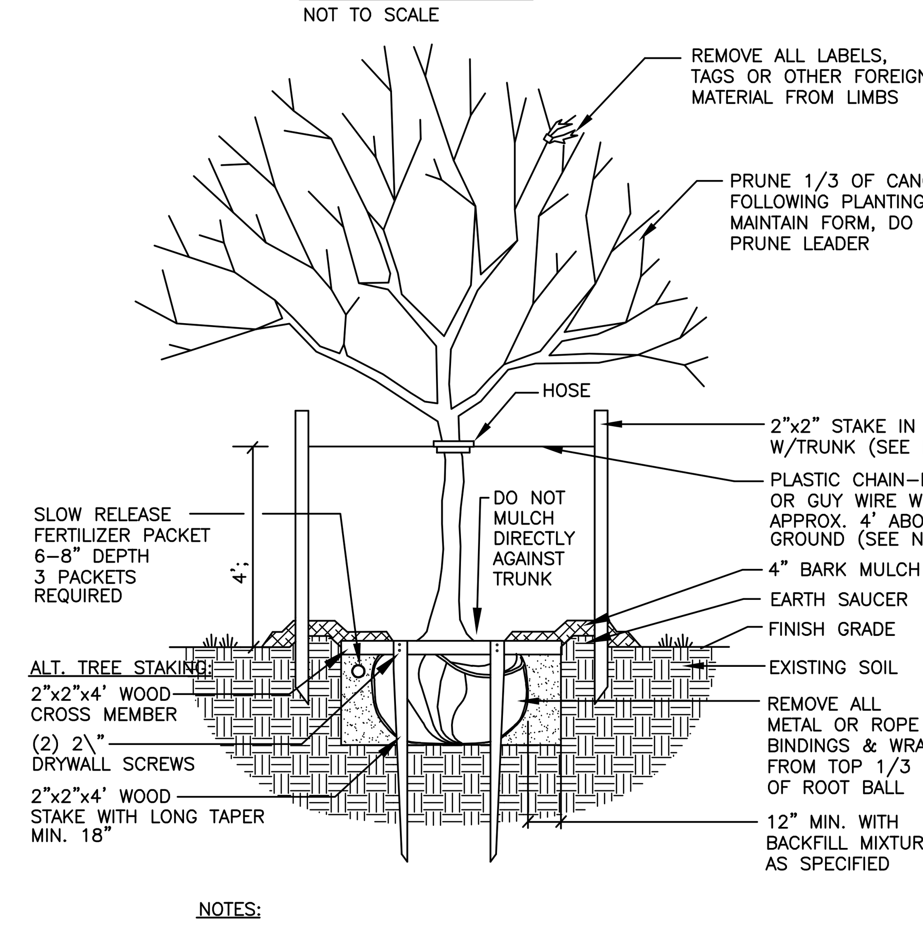
EROSION CONTROL BLANKET
NOT TO SCALE



HANDICAP SIGNS
NOT TO SCALE



ALT. TREE STAKING PLAN
NOT TO SCALE



NOTES:
INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:
1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES 2" TO 4" CALIPER
NOT TO SCALE

CONSTRUCTION NOTES:

1. All work shall conform to the applicable codes and ordinances.

2. Contractor shall visit the site and familiarize him or herself with all conditions affecting the proposed work and shall make provisions as to the cost thereof. Contractor shall be responsible for familiarizing him or herself with all contract documents, field conditions and dimensions and confirming that the work may be accomplished as shown prior to proceeding with construction. Any discrepancies shall be brought to the attention of the engineer prior to the commencement of work.

3. Contractor shall notify engineer of all products or items noted as "existing" which are not found in the field.

4. Install all equipment and materials in accordance with manufacturer's recommendations and owner's requirements unless specifically otherwise indicated or where local codes or regulations take precedence.

5. Contractor shall verify all dimensions and conditions in the field prior to fabrication and erection of any material. Any unusual conditions shall be reported to the attention of the engineer.

6. Contractor shall clean and remove debris and sediment deposited on public streets, sidewalks, adjacent areas, or other public ways due to construction.

7. Contractor shall incorporate provisions as necessary in construction to protect existing structures, physical features, and maintain site stability during construction. Contractor shall restore all areas to original condition and as directed by design drawings.

8. Site contractor shall obtain all required permits prior to construction.

9. All erosion and sediment control measures shall be installed in accordance with "Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices" published by the Cumberland County Soil and Water Conservation District and Maine Department of Environmental Protection, March 2004 or latest edition. It shall be the responsibility of the contractor to possess a copy of the erosion control plan at all times.

10. The contractor is hereby cautioned that all site features shown hereon are based on field observations by the surveyor and by information provided by utility companies. The information is not to be relied on as being exact or complete. The contractor shall contact Dig Safe (1–888–digsafe) at least three (3) but not more than thirty (30) days prior to commencement of excavation or demolition to verify horizontal and vertical location of all utilities.

11. Contractor shall be aware that Dig Safe only notifies its "member" utilities about the dig. When notified, Dig Safe will advise contractor of member utilities in the area. Contractor is responsible for identifying and contacting non–member utilities directly. Non–member utilities may include town or city water and sewer districts and small local utilities, as well as USG public works systems.

12. Contractors shall be responsible for compliance with the requirements of 23 MRSA 3360–A. It shall be the responsibility of the contractor to coordinate with the appropriate utilities to obtain authorization prior to relocation of any existing utilities which conflict with the proposed improvements shown on these plans. If a utility conflict arises, the contractor shall immediately notify the owner, the municipality and appropriate utility company prior to proceeding with any relocation.

13. All pavement markings and directional signage shown on the plan shall conform to the Manual of Uniform Traffic Control Devices (MUTCD) standards.

14. All pavement joints shall be sawcut prior to paving to provide a durable and uniform joint.

15. No holes, trenches or structures shall be left open overnight in any excavation accessible to the public or in public rights–of–way.

16. All work within the public right–of–way shall require a M.D.O.T. Permit as well as permits from the town as applicable.

17. The proposed limits of clearing shown hereon are approximate based upon the proposed limits of site grading. The applicant reserves the right to perform normal forest management activities outside of the clearing limit as shown. Tree removal outside of the limits of clearing may be necessary to remove dead or dying trees or tree limbs. This removal is due to potential safety hazards and to promote proper forest growth.

18. Immediately upon completion of cuts/fills, the contractor shall stabilize disturbed areas in accordance with erosion control notes and as specified on plans.

19. The contractor shall be fully and solely responsible for the removal, replacement and rectification of all damaged and defective material and workmanship in connection with the contract work. The contractor shall replace or repair as directed by the owner all such damaged or defective materials which appear within a period of one year from the date of substantial completion.

20. All work performed by the general contractor and/or trade subcontractor shall conform to the requirements of local, state or federal laws, as well as any other governing requirements, whether or not specified on the drawings.

21. Where the terms "approved equal", "other approved", "equal to", "acceptable" or other general qualifying terms are used in these notes, it shall be understood that reference is made to the ruling and judgment of Plymouth Engineering, inc.

22. The general contractor shall provide all necessary protection for the work until turned over to the owner.

23. The general contractor shall maintain a current and complete set of construction drawings on site during all phases of construction for use of all trades.

24. The contractor shall take full responsibility for any changes and deviation of approved plans not authorized by the architect/engineer and/or client/owner.

25. Details are intended to show end result of design. Any modification to suit field dimension and condition shall be submitted to the engineer for review and approval prior to any work.

26. Before the final acceptance of the project, the contractor shall remove all equipment and materials, repair or replace private or public property which may have been damaged or destroyed during construction, clean the areas within and adjacent to the project which have been obstructed by his/her operations, and leave the project area neat and presentable.

REVISIONS

NO.	DATE	DESCRIPTION	DRAWN	APPD.
1	9/23	REVISED PER CITY REVIEW COMMENTS	JHW	JHW
2	10/3	REVISED PER CITY REVIEW COMMENTS	JHW	JHW

PROJECT NAME:
7 CUMBERLAND AVE.
PORTLAND MAINE

SHEET NAME:
EROSION & SEDIMENTATION CONTROL DETAILS

PROJECT NO. 17004
DRAWING NO. 17004 B
FIELDBOOK:
SCALE:
DATE ISSUED: __–__–__

DESIGNED: ARCHITECT
DRAWN: JHW
CHECKED: JHW
APPROVED: JHW
PLAN DATE: FEB. 22, 2017
CLIENT & OWNER: BANNER PROPERTIES, LLC 126 UNDERWOOD DRIVE FALMOUTH, ME 04105

Plymouth Engineering, Inc.
P.O. Box 46 30 Lower Detroit Road
Plymouth, Maine 04969
Tel: (207) 257–2071 Fax: (207) 257–2130
info@plymouthengineering.com
www.plymouthengineering.com

STATE OF MAINE
JON H. WHITTEN, JR.
No. 10414
LICENSED
PROFESSIONAL ENGINEER

DRAWINGS NOT SEALED ARE FOR PLANNING PURPOSES ONLY AND ARE NOT INTENDED FOR PERMITTING, BIDDING OR CONSTRUCTION

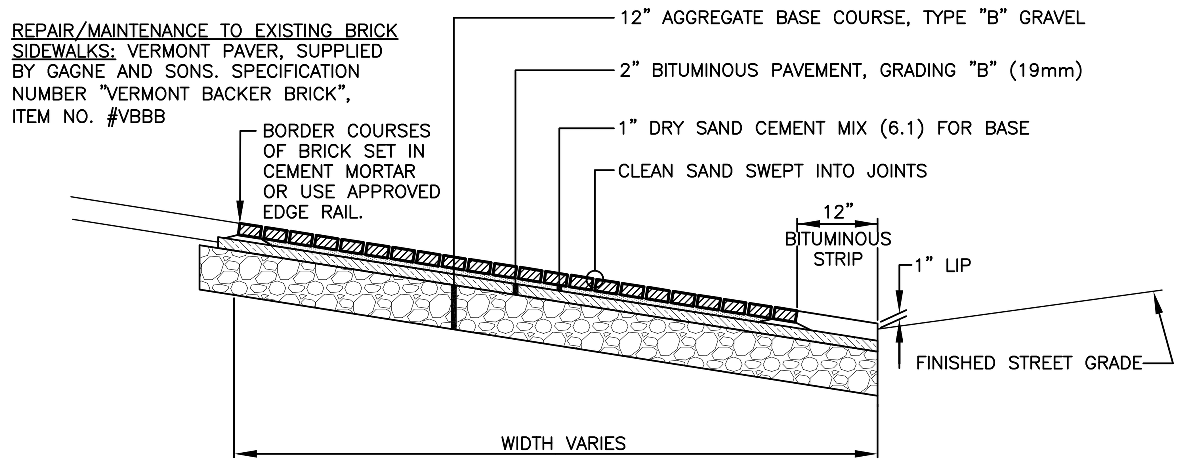
SHEET 4 OF 5

C4

BRICKS TO BE USED:

NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK, MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623, PINE HALL PATHWAY PAVER BRICK.

REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER, SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER "VERMONT BACKER BRICK", ITEM NO. #VBBB

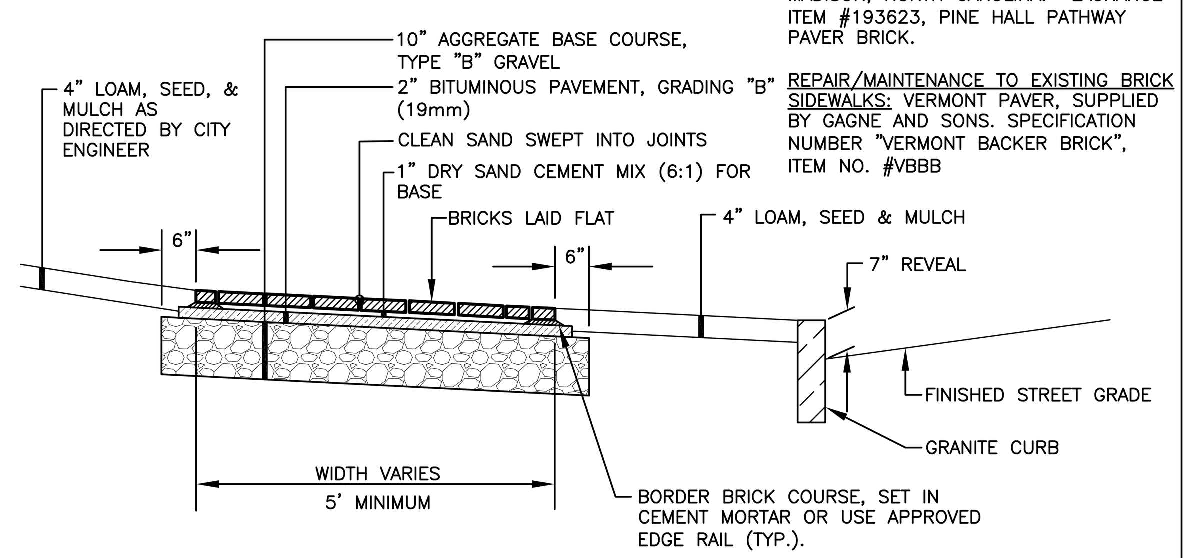


BRICK DRIVEWAY APRON WITH BITUMINOUS BASE
NOT TO SCALE

BRICKS TO BE USED:

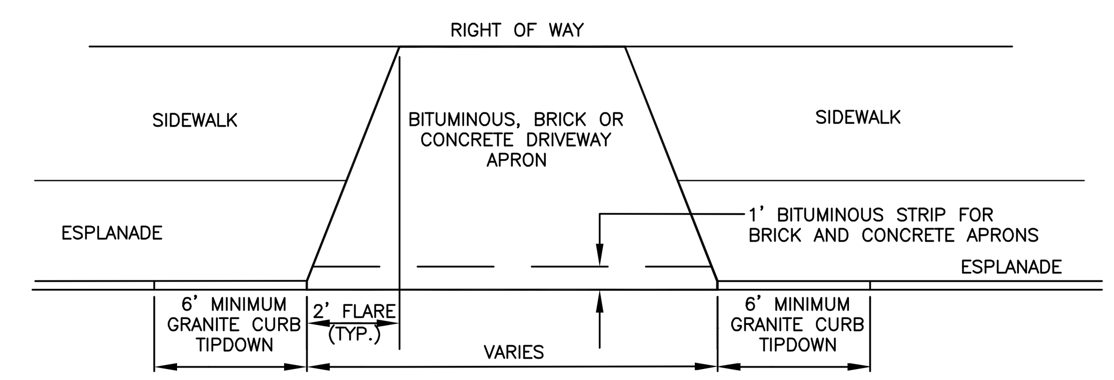
NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK, MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623, PINE HALL PATHWAY PAVER BRICK.

REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER, SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER "VERMONT BACKER BRICK", ITEM NO. #VBBB

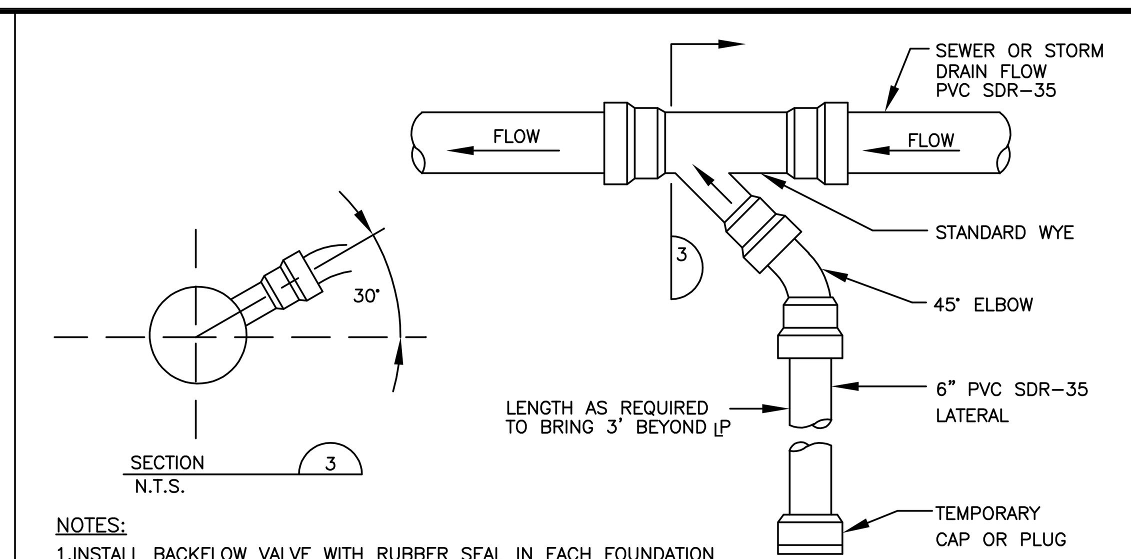


BRICK SIDEWALK WITH BITUMINOUS BASE
NOT TO SCALE

NOTE:
MATCH GRADE OF EXISTING DRIVEWAY AT R.O.W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.

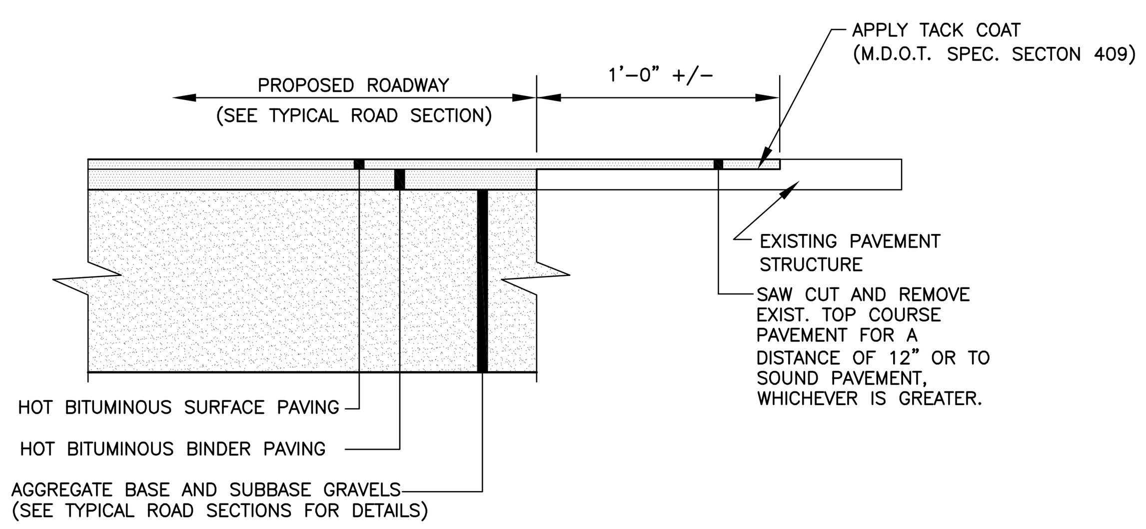


DRIVEWAY APRON LAYOUT
NOT TO SCALE



NOTES:
1.INSTALL BACKFLOW VALVE WITH RUBBER SEAL IN EACH FOUNDATION DRAIN SERVICE.
2. IF SUMP PUMP IS UTILIZED INSTALL CHECK VALVE AT SUMP PUMP.

SEWER / FOUNDATION DRAIN SERVICE CONNECTION
NOT TO SCALE

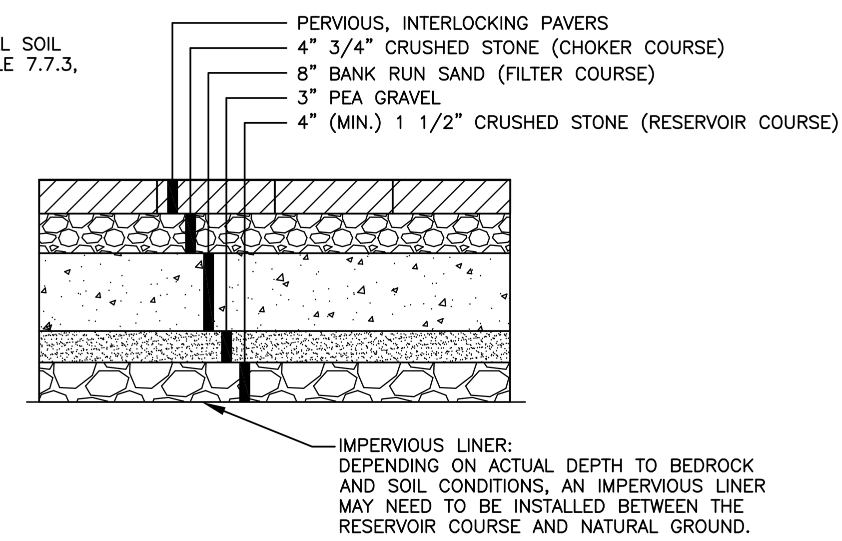


TYPICAL PAVEMENT JOINT
NOT TO SCALE

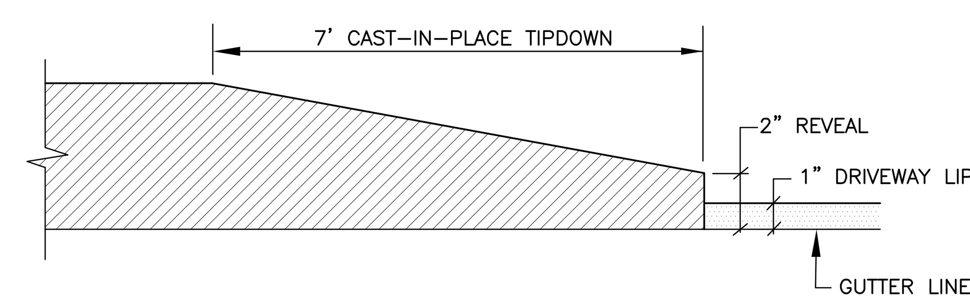
NOTE:
FILTER COURSE MUST BE A MINERAL SOIL MEETING SPECIFICATION WITHIN TABLE 7.7.3, BELOW.

TABLE 7.7.3– MDOT SPEC FOR AGGREGATE (MDOT #703.01)

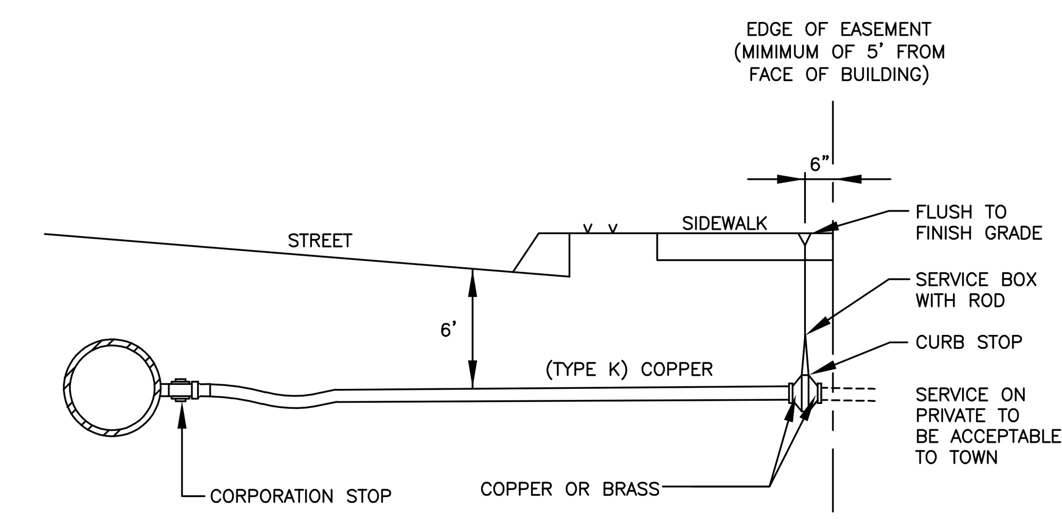
SIEVE SIZE	% BY WEIGHT
3/8"	100
#4	95–100
#8	80–100
#16	50–85
#30	25–60
#60	10–30
#100	2–10
#200	0–5 (8–10% PREFERRED)



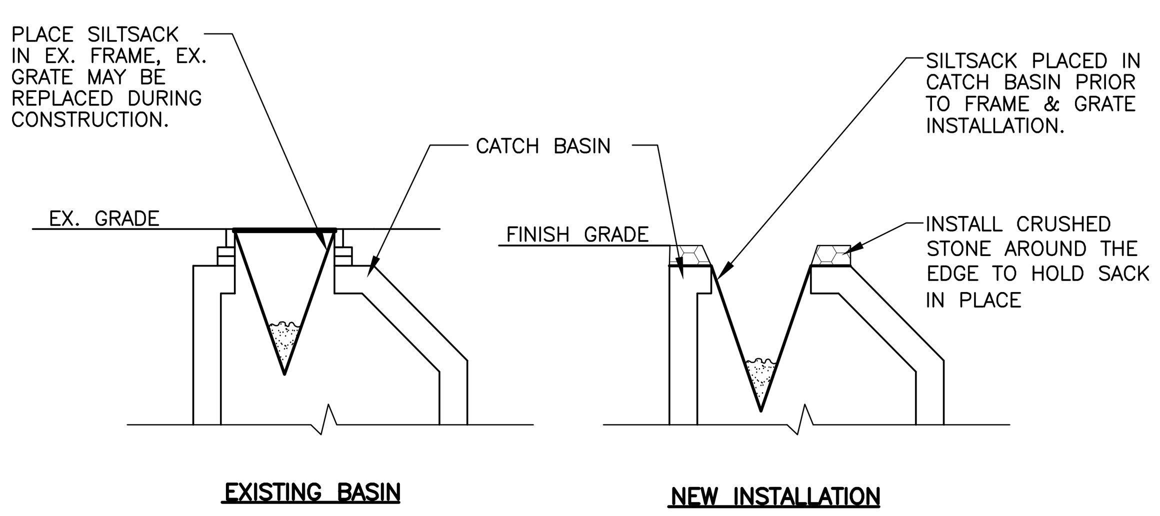
PERVIOUS PAVER SECTION DETAIL
NOT TO SCALE

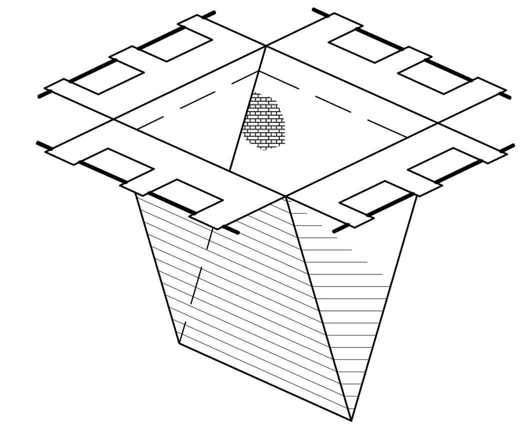


TYPICAL TIPDOWN CURB INSTALLATION
NOT TO SCALE



TYPICAL WATER SERVICE CONNECTION
NOT TO SCALE



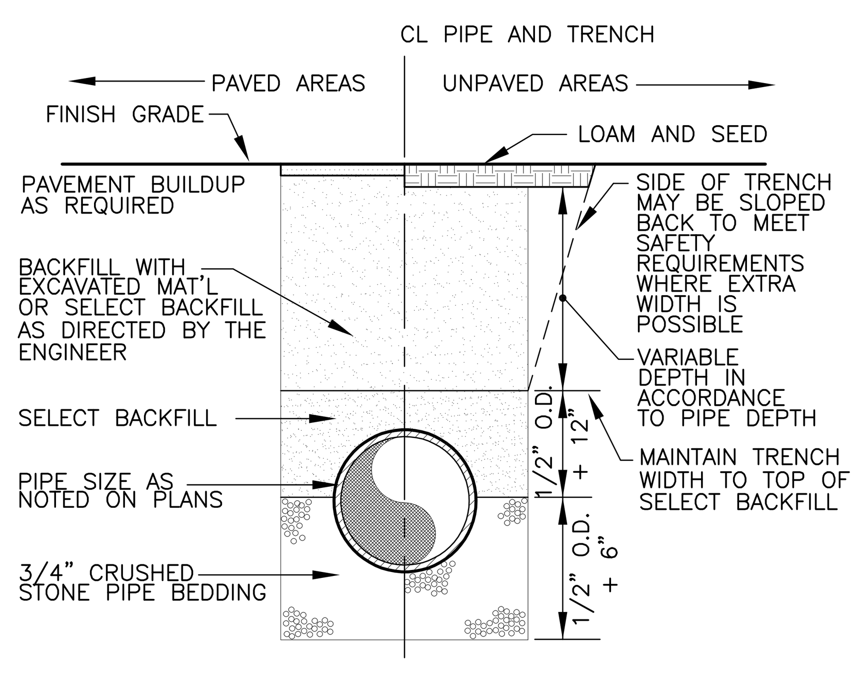


SILT SACK PROTECTION

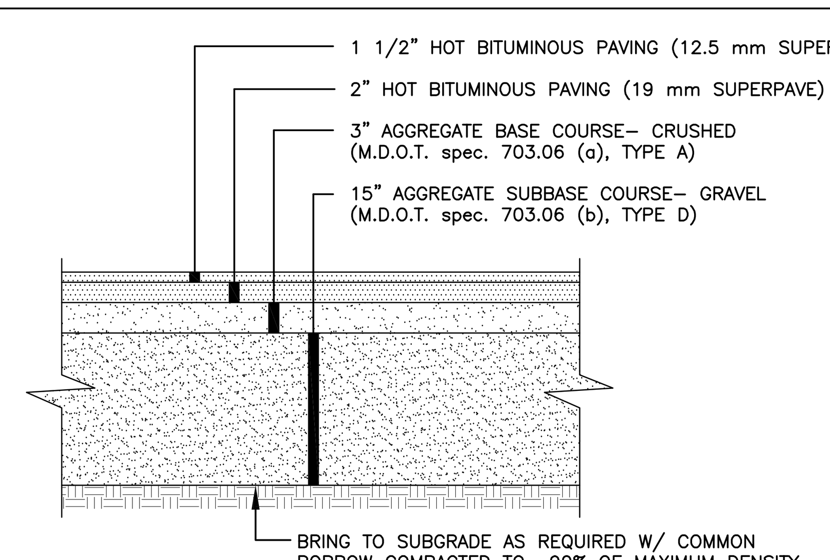
NOTES:

PRIOR TO FINAL GRADING AND PAVING OPERATIONS BEGIN, A CATCH BASIN INSERT (SUCH AS A SILT SACK OR A DANDY BAG II) MUST BE INSTALLED IN EACH BASIN PER MANUFACTURES INSTRUCTIONS. HAY BALES SHOULD BE REMOVED ONCE INSERTS ARE INSTALLED.

CATCH BASIN EROSION CONTROL INSERT
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE

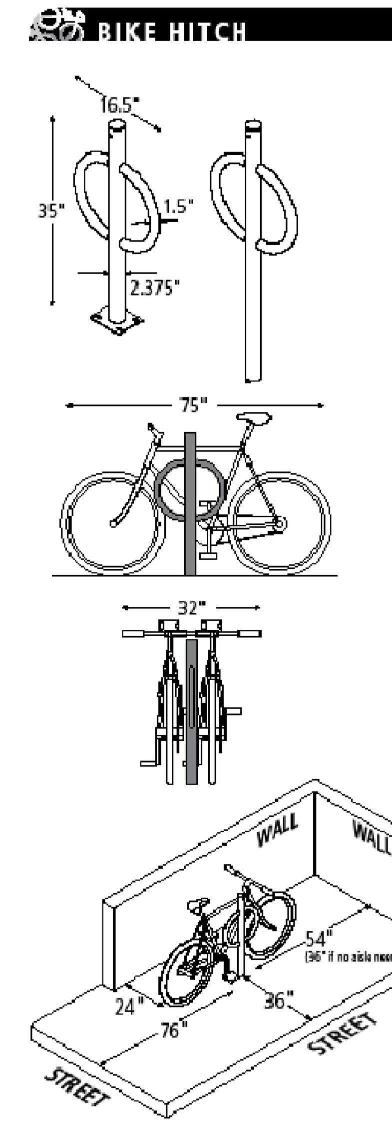


NOTES:
1. COMPACT GRAVEL SUBBASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

CITY OF PORTLAND LOCAL ST. SECTION
NOT TO SCALE

City of Portland Technical Manual
Section 1 - Transportation Systems and Street Design
Adopted 7-19-10 Rev. 6-17-11; 7-21-11

BIKE HITCH — Specifications and Space Use



Product: Dero Bike Hitch
As manufactured by Dero Bike Racks

Capacity: 2 Bikes

Materials: Centerbeam: 2" schedule 40 pipe (2.375" OD)
Ring: 1.5" OD 11 gauge tube

Finishes: An after fabrication hot dipped galvanized finish is standard. 250TGIC powder coat colors, a thermoplastic coating and a stainless steel option are also available.

Our powder coat finish assures a high level of adhesion and durability by following these steps:
1. Sandblast
2. Iron phosphate pretreatment
3. Epoxy primer electrostatically applied
4. Final thick TGIC polyester powder coat

Stainless Steel: 304 grade stainless steel material finished in either a high polished shine or a satin finish.

A rubbery PVC Dip is also available

Installation Methods: In-ground mount is embedded into concrete base. Surface mount has one 5" x 6" foot which is anchored to the ground with four anchors (included with rack).

Space Use and Setbacks: Wall Setbacks:
For racks set parallel to a wall:
Minimum: 12"
Recommended: 24"

For racks set perpendicular to a wall:
Minimum" 35" (centerline measurement)
Recommended: 38" (54" if aisle is needed between bike and wall)

Distance Between Racks:
Minimum: 24"
Recommended: 38"

Street Setbacks:
Minimum: 36"

DERO BIKE RACKS — www.dero.com 1-800-298-4915

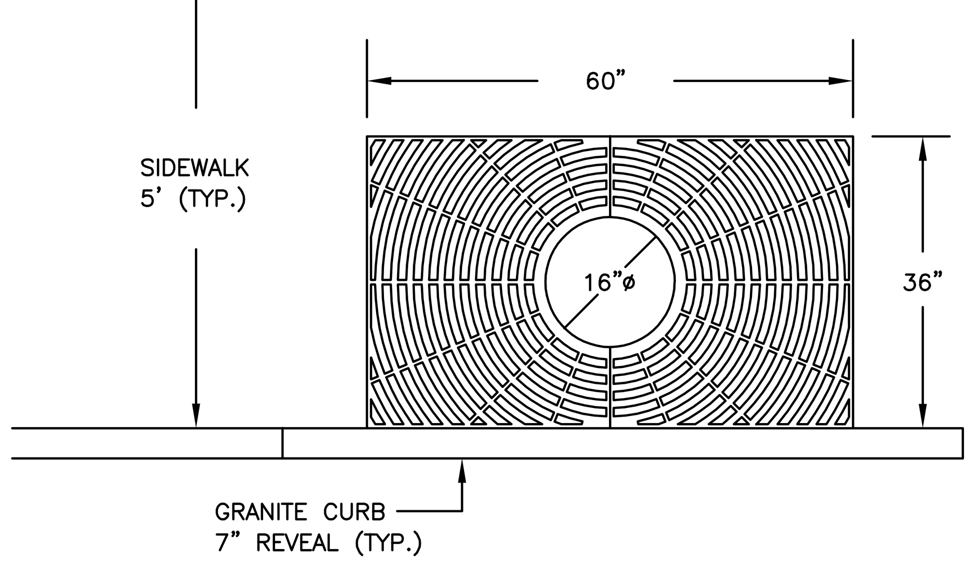
DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION SYSTEMS AND STREET DESIGN SECTION I	FIGURE:
REVISED:	BICYCLE RACK SPECIFICATION - BIKE HITCH		I-33a 66

City of Portland Technical Manual134134
Section 4 - Landscaping and Landscape Preservation
Adopted 7-19-10 Rev. 6-17-11

NOTES:
16"ø EXPANDABLE TREE OPENING. 0.25" SLOT OPENINGS.

SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

WHEN THE TREE GRATE IS INSTALLED IN A CONCRETE SIDEWALK, A NOTCH MUST BE INSTALLED ALONG THE EDGE TO HOLD THE GRATE, WHEN INSTALLED IN A BRICK SIDEWALK IT REQUIRES A FRAME TO BE INSTALLED TO HOLD THE GRATE IN PLACE.



PLAN VIEW

EXPANDABLE TREE GRATE
NEENAH MODEL R-8810
NOT TO SCALE

http://www.nfco.com/literature/TreeGrateCatalog22/Avenue.pdf

DATE: MARCH 2011	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	STDS FOR LANDSCAPING AND PRESERVATION OF EXISTING VEGETATION SECTION IV	FIGURE:
REVISED:	EXPANDABLE TREE GRATE FOR NARROW RESIDENTIAL URBAN STREETS		IV-4A 134

REVISIONS

NO.	DATE	DESCRIPTION	DRAWN	APPD.

PROJECT NAME: 7 CUMBERLAND AVE.
PORTLAND MAINE
SHEET NAME: DETAILS

PROJECT NO. 17004
DRAWING NO. 17004 B
FIELDBOOK:
SCALE:
DATE ISSUED: __-__-__

DESIGNED: ARCHITECT
DRAWN: JHW
CHECKED: JHW
APPROVED: JHW
PLAN DATE: FEB. 22, 2017
CLIENT & OWNER: BANNER PROPERTIES, LLC 126 UNDERWOOD DRIVE FALMOUTH, ME 04105

Plymouth Engineering, Inc.
P.O. Box 46 30 Lower Detroit Road
Plymouth, Maine 04969
Tel: (207) 257-2071 Fax: (207) 257-2130
info@plymouthengineering.com
www.plymouthengineering.com

STATE OF MAINE JON H. WHITTEN, JR. No. 10414 LICENSED PROFESSIONAL ENGINEER

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SHEET 5 OF 5

C5

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SITE PLAN

SCALE: 1/4" = 1'-0"

Bild Architecture
PO Box 8235
Portland, ME
04104
207.408.0168
evan@bildarchitecture.com

LICENSED ARCHITECT
8/23/16
EVAN A. CARROLL
No. 3687
STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
MERRILL STREET
PORTLAND, ME

REVISIONS
1 -
2 -
3 -
4 -
5 -

PERMIT SET
NOT FOR CONSTRUCTION

DRAWN BY
EMW
SHEET TITLE
CONSTRUCTION MANAGMENT

ISSUE DATE
2/24/17
SHEET SCALE
1/4" = 1'-0"

CM

1.1

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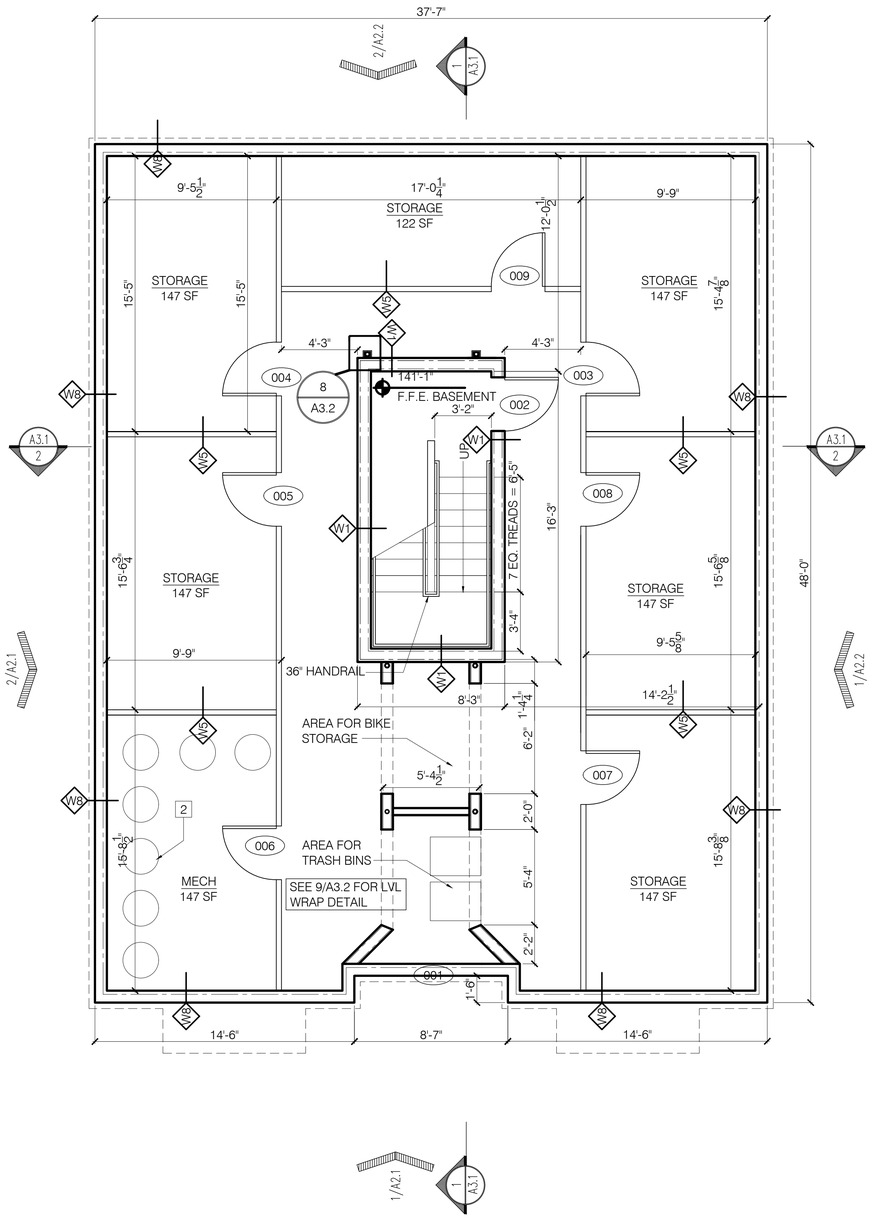
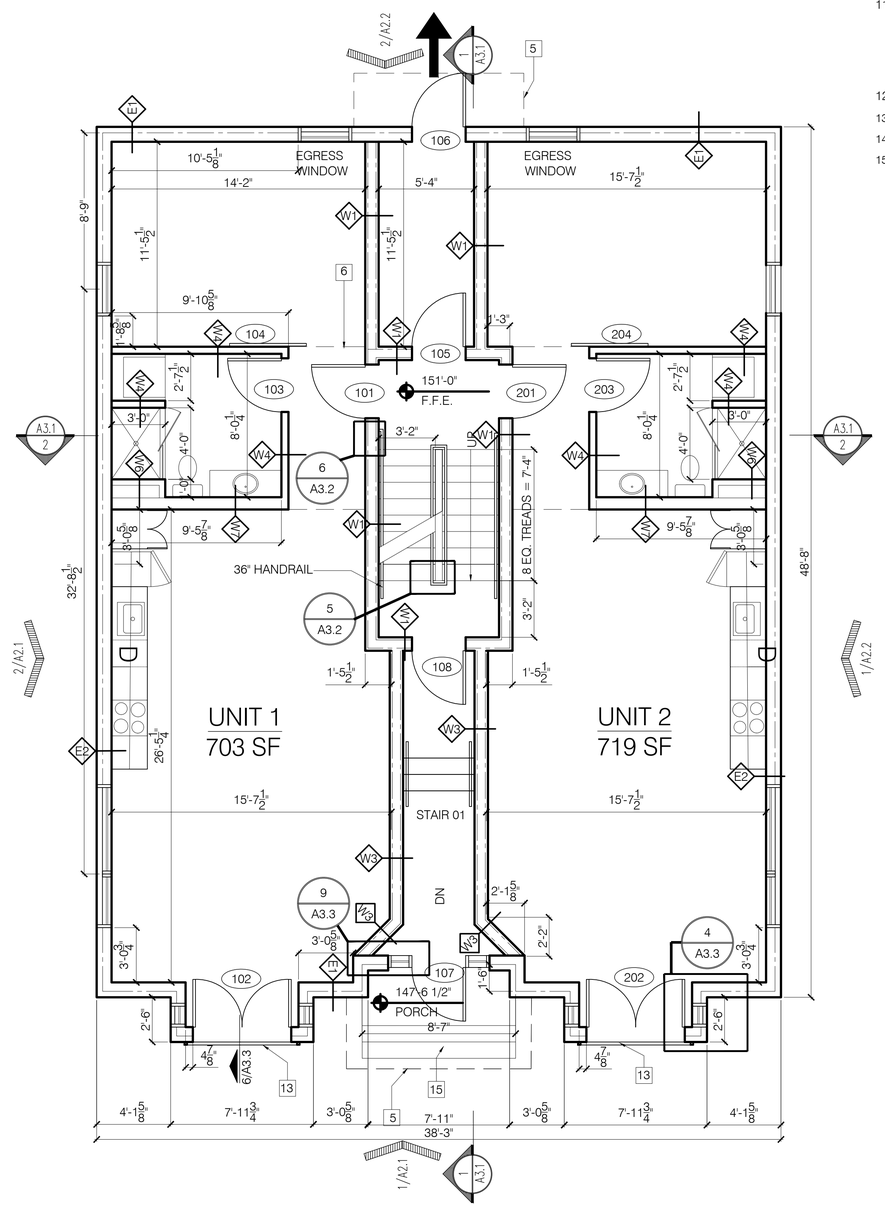


1 BASEMENT

SCALE: 1/4" = 1'-0"



2 FIRST FLOOR

SCALE: 1/4" = 1'-0"

X KEYNOTES:

1. -
2. WATER HEATERS
3. ELECTRICAL PANELS
4. FRAMED STAIR OPENING ABOVE
5. LINE OF AWNING ABOVE
6. LINE OF LOWER CEILING
7. LOCATION FOR INSTALLATION OF HEAT PUMP UNITS
8. ROOF SCUPPER - SEE 10/A3.2 FOR DETAIL
9. - NOT USED -
10. MEMBRANE ROOF
11. 1/8" TAPERED INSULATION CRICKET TO PROVIDE POSITIVE SLOPE TO TOP OF ROOF DRAIN /SCUPPER
12. - NOT USED -
13. FABRICATED METAL RAILING
14. ROOF DECK SYSTEM
15. CONCRETE STEPS AND PORCH

Bild Architecture
PO Box 8235
Portland, ME
04104
207.408.0168
evan@bildarchitecture.com

bild ARCHITECTURE

LICENSED ARCHITECT
2/24/17
EVAN A. CARROLL
No. 3687
STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND
PORTLAND, ME

REVISIONS
1 03-15-2017
2 -
3 -
4 -
5 -

PERMIT SET
NOT FOR CONSTRUCTION

DRAWN BY
EAC
SHEET TITLE
BSMNT / FIRST

ISSUE DATE
2/24/17
SHEET SCALE
1/4" = 1'-0"

A

1.1

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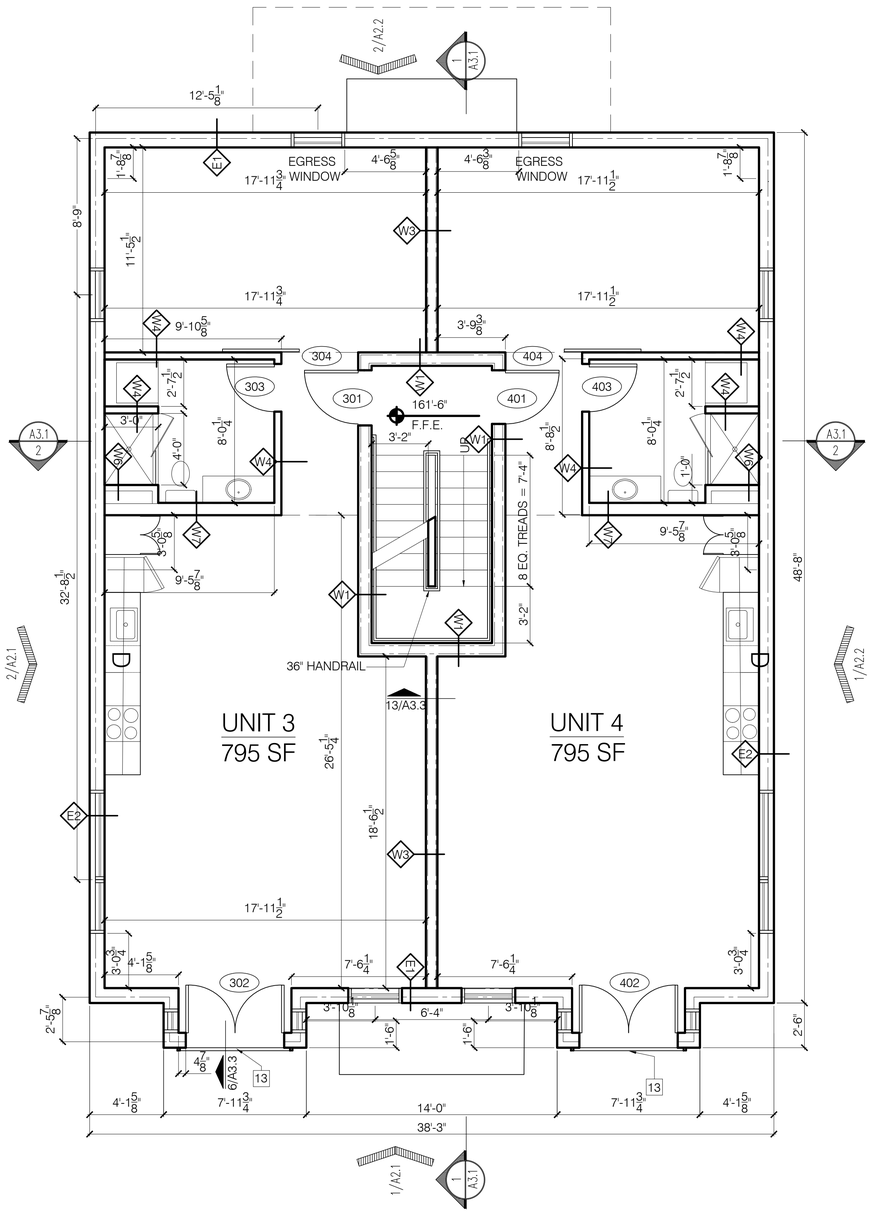
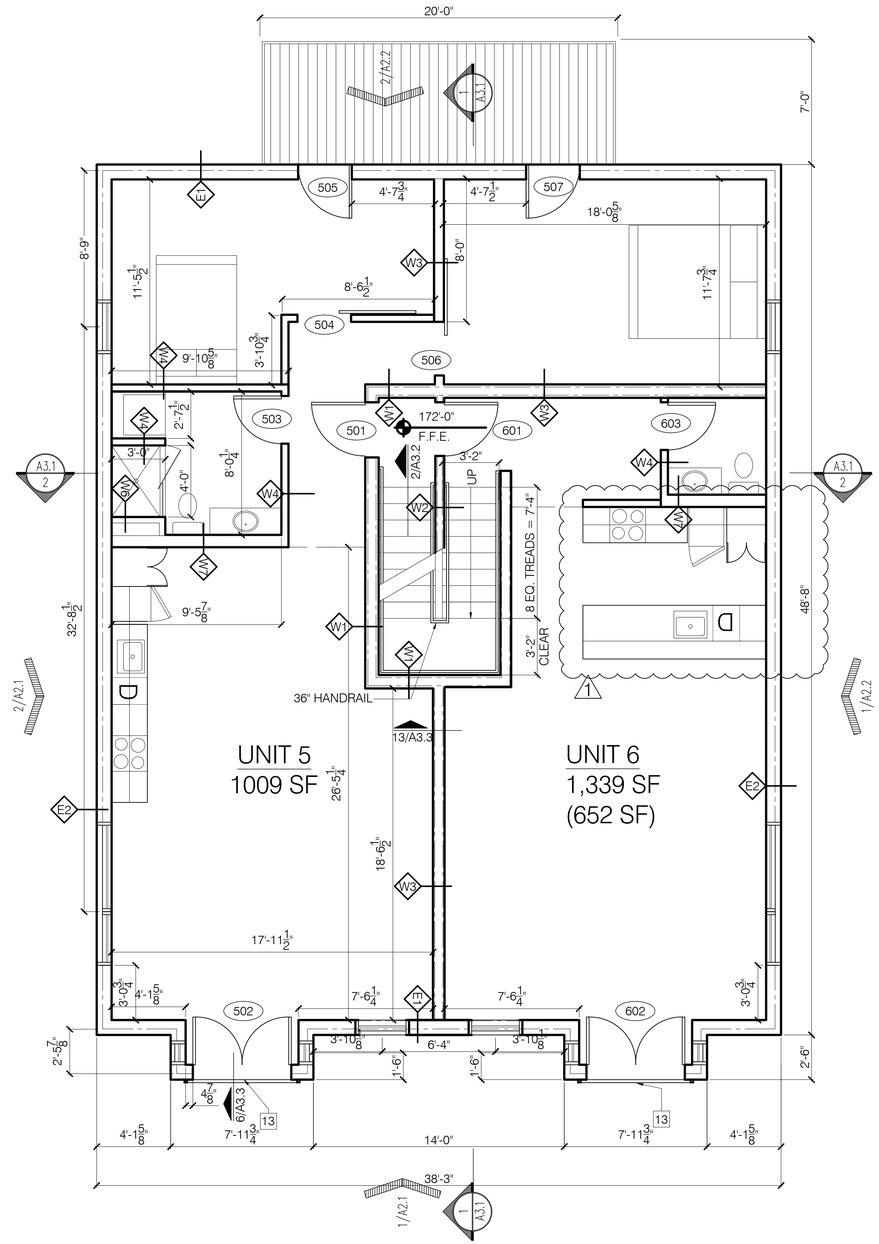


SECOND FLOOR

SCALE: 1/4" = 1'-0"



THIRD FLOOR

SCALE: 1/4" = 1'-0"

X KEYNOTES:

1. -
2. WATER HEATERS
3. ELECTRICAL PANELS
4. FRAMED STAIR OPENING ABOVE
5. LINE OF AWNING ABOVE
6. LINE OF LOWER CEILING
7. LOCATION FOR INSTALLATION OF HEAT PUMP UNITS
8. ROOF SCUPPER - SEE 10/A3.2 FOR DETAIL
9. - NOT USED -
10. MEMBRANE ROOF
11. 1/8" TAPERED INSULATION CRICKET TO PROVIDE POSITIVE SLOPE TO TOP OF ROOF DRAIN /SCUPPER
12. - NOT USED -
13. FABRICATED METAL RAILING
14. ROOF DECK SYSTEM
15. CONCRETE STEPS AND PORCH

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LICENSED ARCHITECT
2/24/17
EVAN A. CARROLL
No. 3687
STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND
PORTLAND, ME

REVISIONS
1 03-15-2017
2 -
3 -
4 -
5 -

PERMIT SET
NOT FOR CONSTRUCTION

DRAWN BY
EAC
SHEET TITLE
2ND 3RD FLOOR

ISSUE DATE
2/24/17
SHEET SCALE
1/4" = 1'-0"

A

1.2

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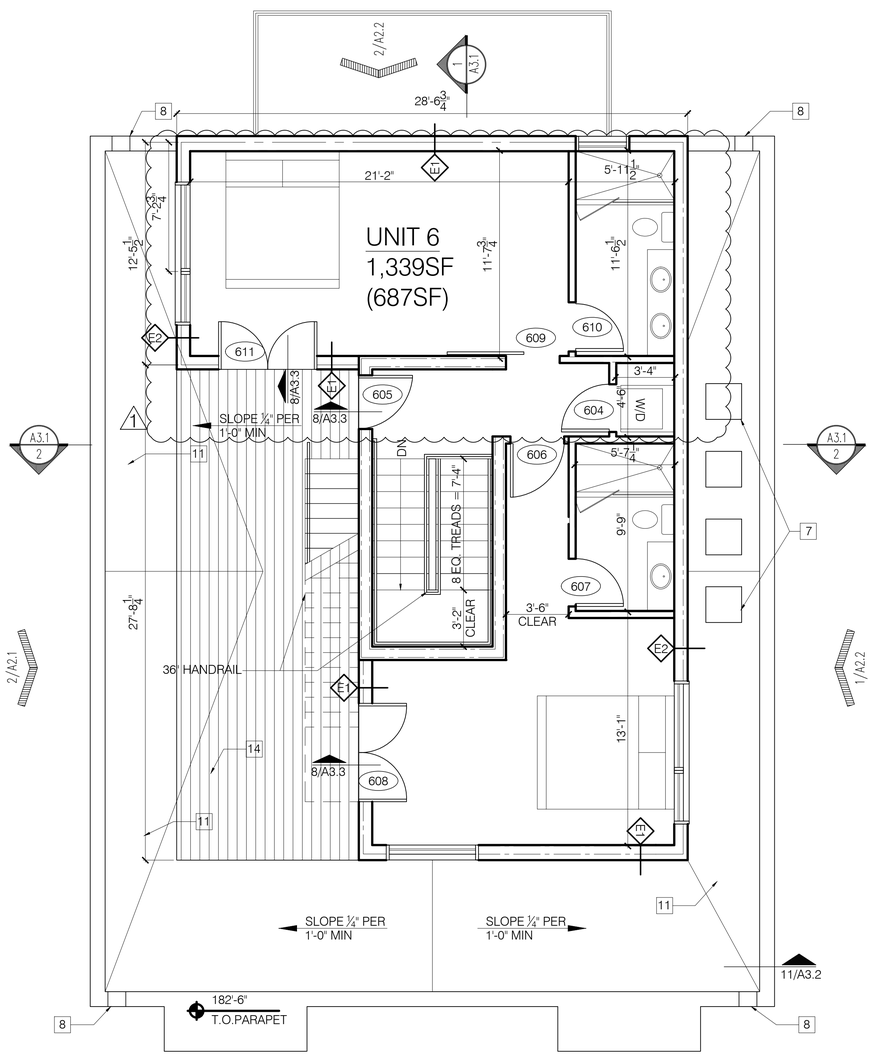
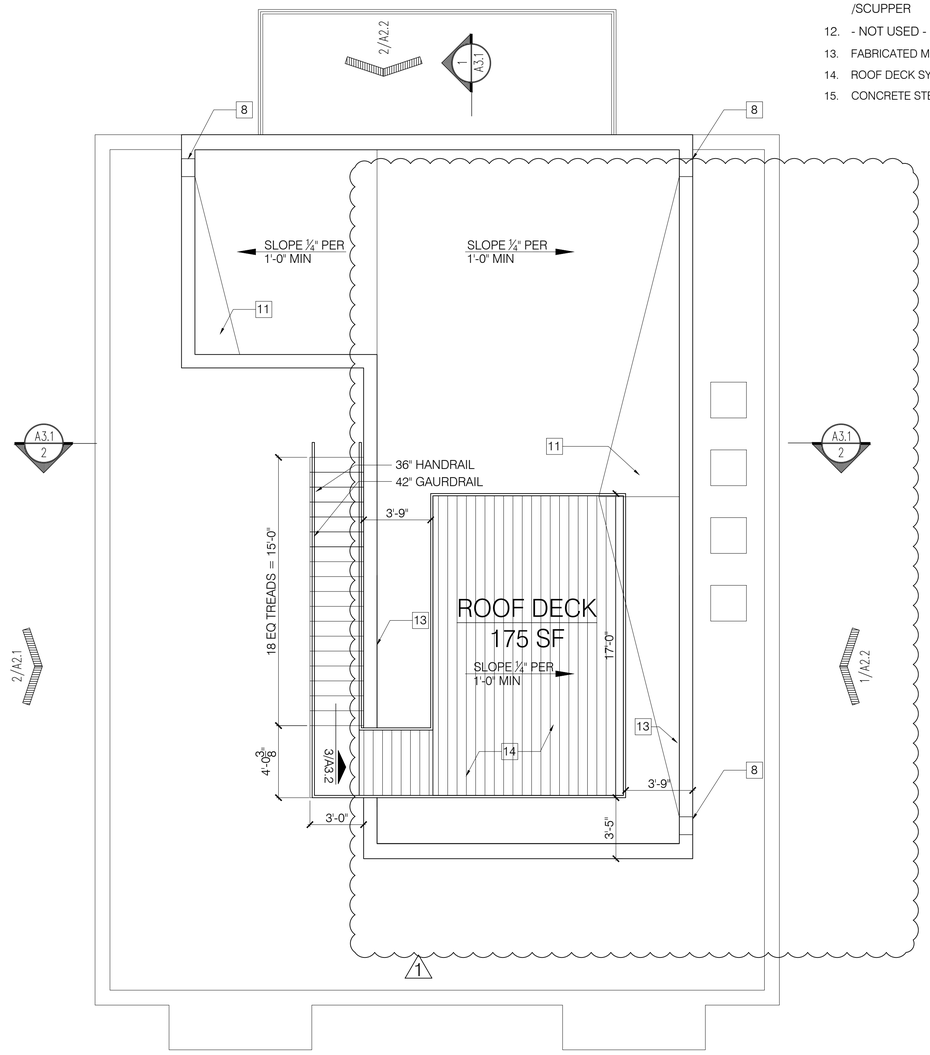
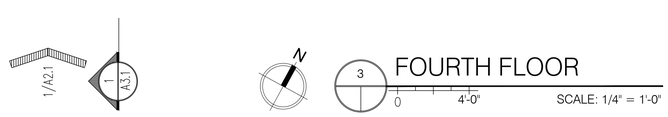
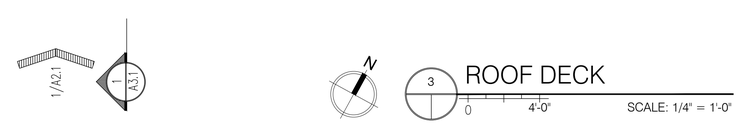
X KEYNOTES:.

1. -
2. WATER HEATERS
3. ELECTRICAL PANELS
4. FRAMED STAIR OPENING ABOVE
5. LINE OF AWNING ABOVE
6. LINE OF LOWER CEILING
7. LOCATION FOR INSTALLATION OF HEAT PUMP UNITS
8. ROOF SCUPPER - SEE 10/A3.2 FOR DETAIL
9. - NOT USED -
10. MEMBRANE ROOF
11. 1/8" TAPERED INSULATION CRICKET TO PROVIDE POSITIVE SLOPE TO TOP OF ROOF DRAIN /SCUPPER
12. - NOT USED -
13. FABRICATED METAL RAILING
14. ROOF DECK SYSTEM
15. CONCRETE STEPS AND PORCH









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LICENSED ARCHITECT
2/24/17
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7 CUMBERLAND
PORTLAND, ME

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1| 03-15-2017
2| -
3| -
4| -
5| -

PERMIT SET
NOT FOR CONSTRUCTION

DRAWN BY
EAC
SHEET TITLE
4TH AND ROOF

ISSUE DATE
2/24/17
SHEET SCALE
1/4" = 1'-0"

A
1.3

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WINDOW SCHEDULE				
TYPE	SIZE (ROUGH OPENING)	MATERIAL	OPERATION	NOTES
A	-	-	-	1,2,4
B	2'-6" X 3'-0"	-	AWNING	1,2,4
C	2'-6" X 5'-0"	-	FIXED	1,2,4
D	5'-0" X 3'-0"	-	CASEMENT	1,3,2,4
E	5'-0" X 5'-0"	-	FIXED	1,2,4
F	7'-0" X 1'-4"	-	FIXED	1,2,4
G	7'-0" X 5'-6"	-	SWING	1,2,4,5

WINDOW SCHEDULE NOTES:

1. SAFETY GLAZING MAY BE REQUIRED FOR WINDOWS NEAR A SLIDING DOOR
2. ALL WINDOWS TO HAVE A MAXIMUM U-FACTOR OF 0.35
3. WINDOWS LABELED "EGRESS WINDOW" IN PLAN MUST COMPLY WITH: MIN AREA: 5.7SF
   MIN HEIGHT: 24"
   MIN WIDTH: 20"
4. WINDOWS TP BE THERMALLY BROKEN
5. SEE DOOR SCHEDULE

WINDOW SPECIFICATIONS:

1. Size and window configuration.	See Window Schedule
2. Color options.	To be selected
3. Factory Mulling Capabilty.	Preferred
4. Design Pressure Rating	25
5. U Factor	0.35 or lower
6. Material	To be selected
7. Glazing Type	To be selected
8. Hardware type.	To be selected
9. Exterior Washing Capability	Washing from interior preferred
10. Warranty (Window & glazing units)	10 years
11. Insect Screens	Standard Insect Screens

GENERAL NOTES:

A. GLAZING IN ALL DOORS IS REQUIRED TO BE SAFETY GLAZING

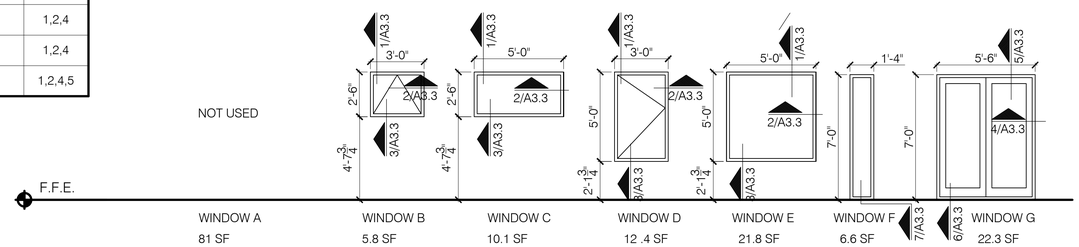
B. FINAL FINISHES TO BE SELECTED BY OWNER.

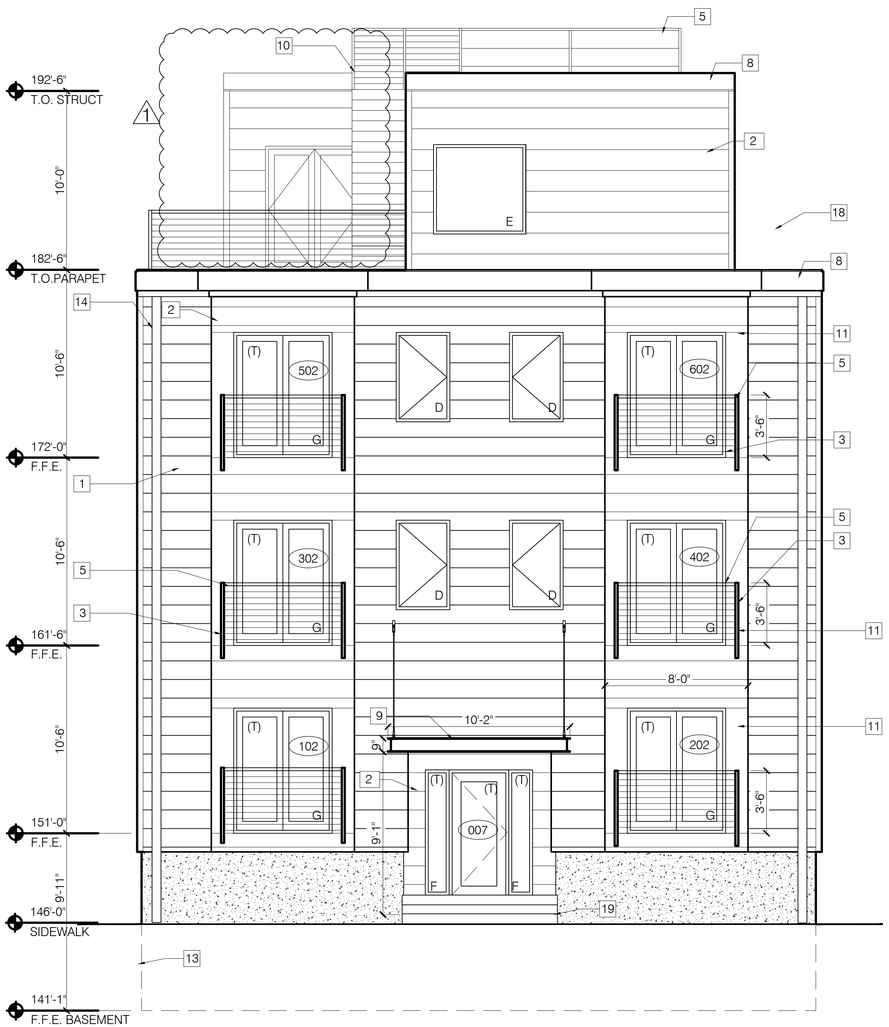
C. ----

D. ----

X KEYNOTES:

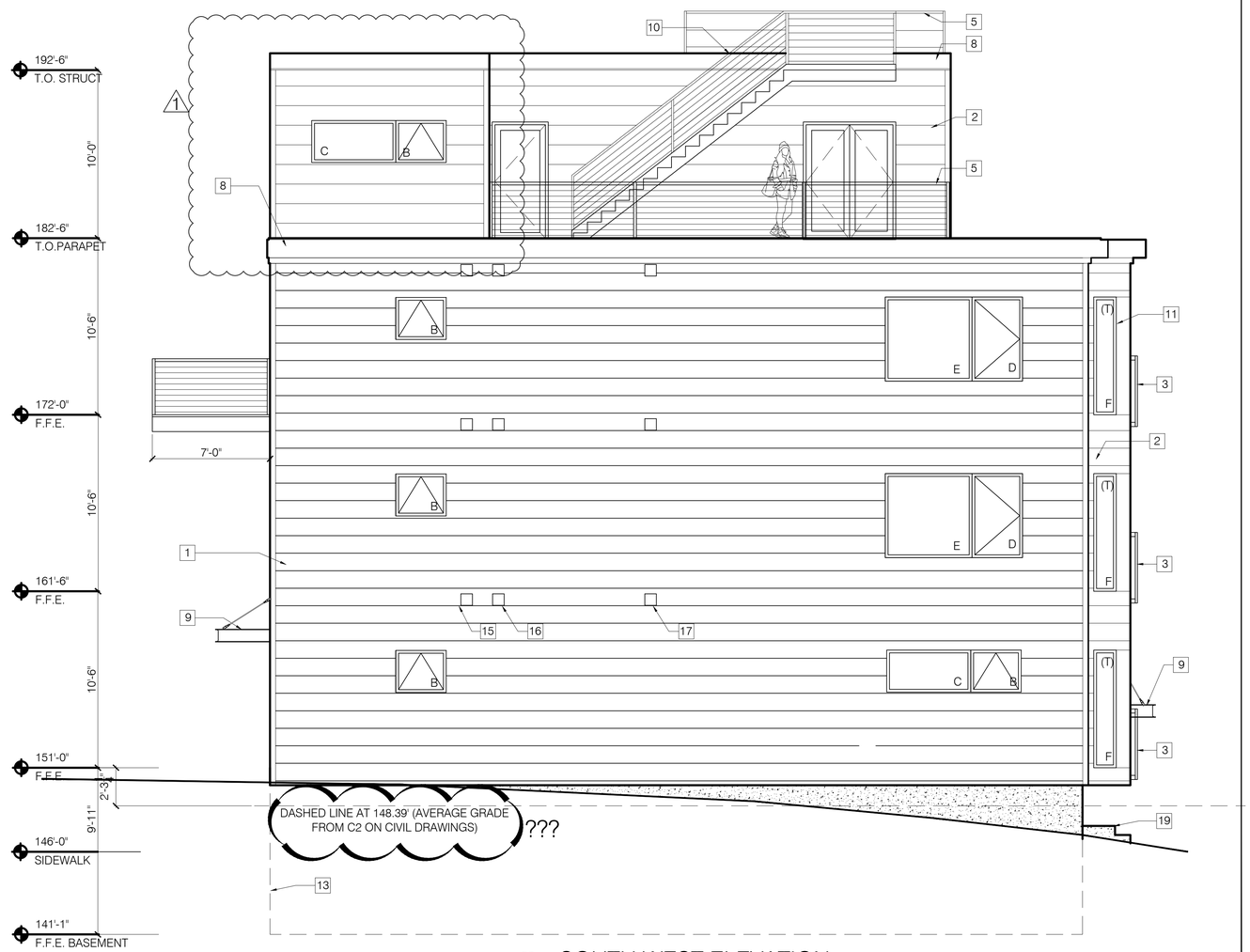
1. LP SMART SIDING - SMOOTH FINISH - CLAPBOARD - 11.84 WIDTH - COLOR 1
2. LP SMART SIDING - SMOOTH FINISH - CLAPBOARD - 11.84 WIDTH - COLOR 2
3. FABRICATED METAL GUARD SYSTEM - WEDGE LOCK 3000 BY DECK-RAIL OR SIMILAR
4. -
5. HANDRAIL W/ 42" HISS HSS GUARDRAIL W/ HORIZONTAL STEEL RODS @ 3 1/2" O.C.
6. -
7. -
8. GALVANIZED FINISHED BREAK METAL COPING
9. FABRICATED METAL AWNING WITH METAL ROD SUPPORTS
10. EXTERIOR STAIR
11. BREAK METAL WINDOW TRIM DETAIL
12. LINE OF ROOF BEYOND
13. LINE REPRESENTS BASEMENT BELOW GRADE
14. SCUPPER AND DOWNSPOUT -SEE DETAIL 10/A3.2
15. DRYER VENT
16. HVAC EXHAUST
17. HVAC INTAKE
18. LOCATION FOR INSTALLATION OF HEAT PUMP UNITS
19. CONCRETE STEPS





1 FRONT (SOUTH EAST) ELEVATION

0 4'-0" SCALE: 1/4" = 1'-0"



2 SOUTH WEST ELEVATION

0 4'-0" SCALE: 1/4" = 1'-0"

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LICENSED ARCHITECT 2/24/17 EVAN A. CARROLL No. 3867 STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND PORTLAND, ME

REVISIONS
1| 03-15-2017
2| -
3| -
4| -
5| -

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DRAWN BY **EMW**
SHEET TITLE
ELEVATIONS

ISSUE DATE **2/24/17**
SHEET SCALE **1/4" = 1'-0"**

A

2.1

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MAX WALL OPENING					
ELEVATION	SEPARATION DISTANCE	NFPA SPRINKLERED	PROTECTED OPENINGS	ALLOWABLE AREA	% OF WALL OPENING
SOUTH WEST -1ST	5' TO 10'	NO	NO	10%	5.38%
SOUTH WEST -2ND	5' TO 10'	NO	NO	10%	9.45%
SOUTH WEST -3RD	5' TO 10'	NO	NO	10%	9.45%
SOUTH WEST - 4TH	15' TO 20'	NO	NO	25%	17% 1
NORTH EAST - 1ST	5' TO 10'	NO	NO	10%	5.38%
NORTH EAST - 2ND	5' TO 10'	NO	NO	10%	9.45%
NORTH EAST - 3RD	5' TO 10'	NO	NO	10%	9.45%
NORTH EAST - 4TH	5' TO 10'	NO	NO	10%	4% 1
SOUTH EAST	30' OR GREATER	NO	NO	N/A	-
NORTH WEST	30' OR GREATER	NO	NO	N/A	-

GENERAL NOTES:

A. GLAZING IN ALL DOORS IS REQUIRED TO BE SAFETY GLAZING

B. FINAL FINISHES TO BE SELECTED BY OWNER.

C. ----

D. ----

X KEYNOTES:

1. LP SMART SIDING - SMOOTH FINISH - CLAPBOARD - 11.84 WIDTH - COLOR 1
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8. GALVANIZED FINISHED BREAK METAL COPING
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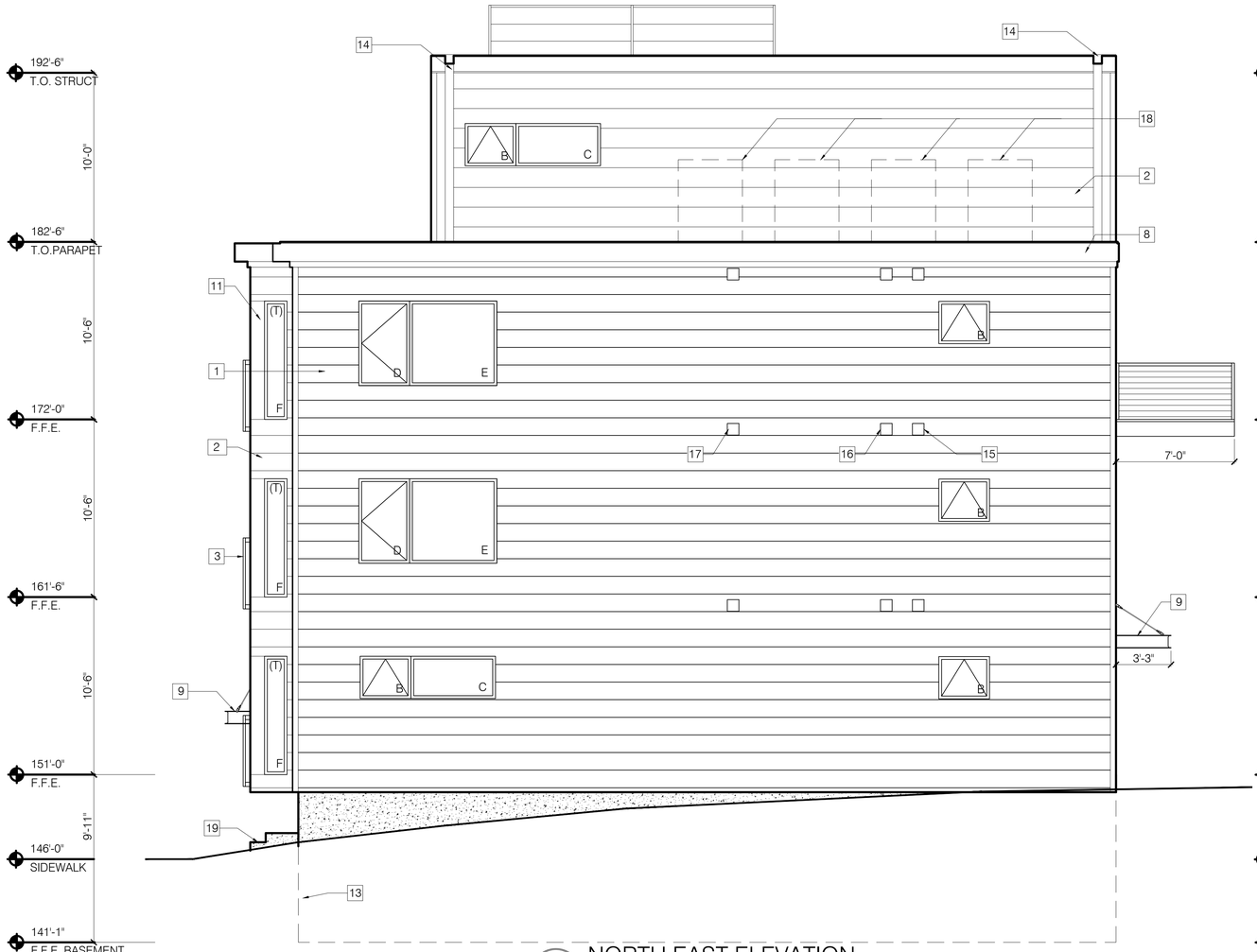
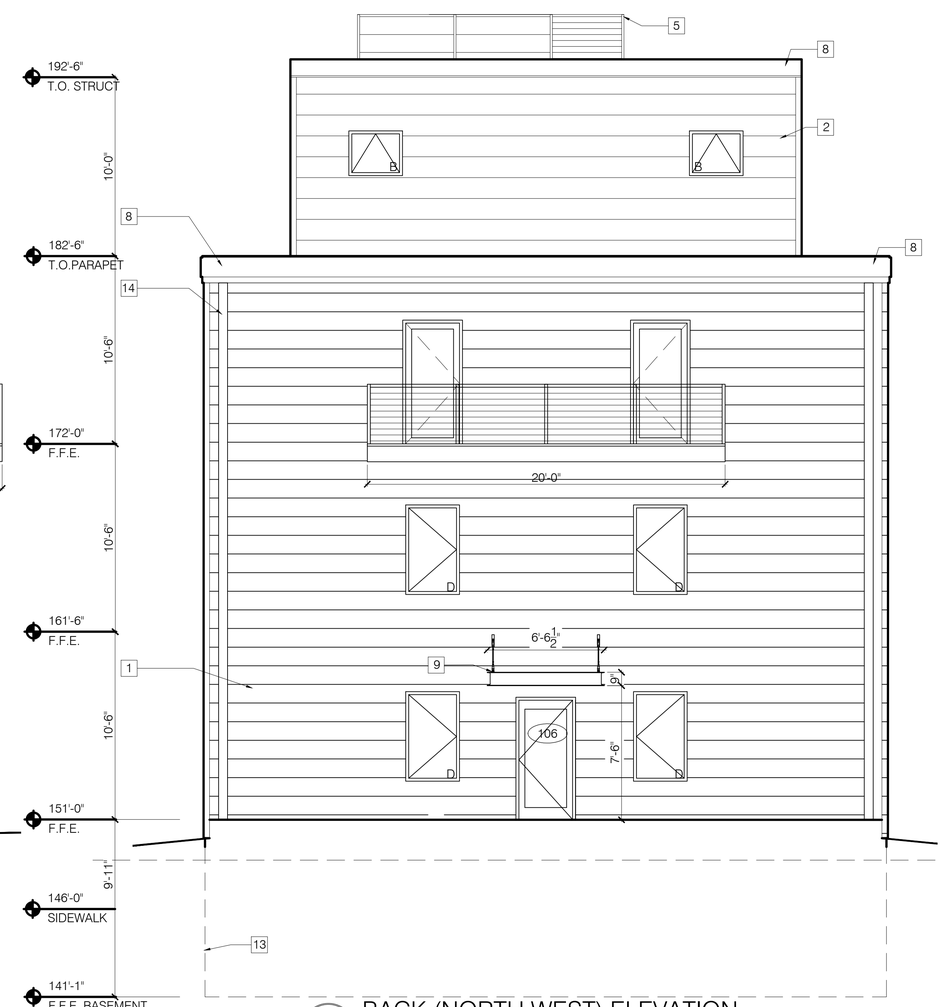
19. CONCRETE STEPS



1 NORTH EAST ELEVATION

0 4'-0" SCALE: 1/4" = 1'-0"



2 BACK (NORTH WEST) ELEVATION

0 4'-0" SCALE: 1/4" = 1'-0"

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LICENSED ARCHITECT
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EVAN A. CARROLL
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PROJECT NAME
7 CUMBERLAND PORTLAND, ME

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ELEVATIONS

DRAWN BY
EMW
SHEET TITLE

ISSUE DATE
2/24/17
SHEET SCALE
1/4" = 1'-0"

A
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1 RENDERING
0 NTS SCALE: NTS

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EMW
SHEET TITLE
RENDERING

ISSUE DATE
2/24/17
SHEET SCALE
1/4" = 1'-0"

A
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1 RENDERING
0 NTS SCALE: NTS

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LICENSED ARCHITECT
2/24/17
EVAN A. CARROLL
No. 3867
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SHEET SCALE
1/4" = 1'-0"

A
2.4

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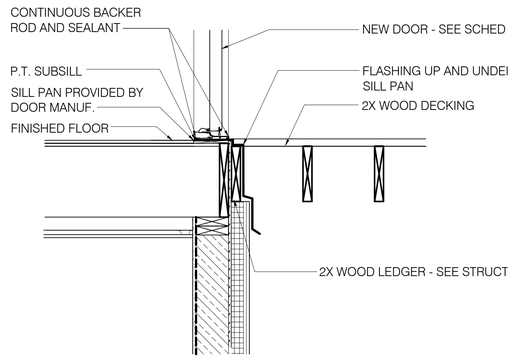


5 DECK DETAIL

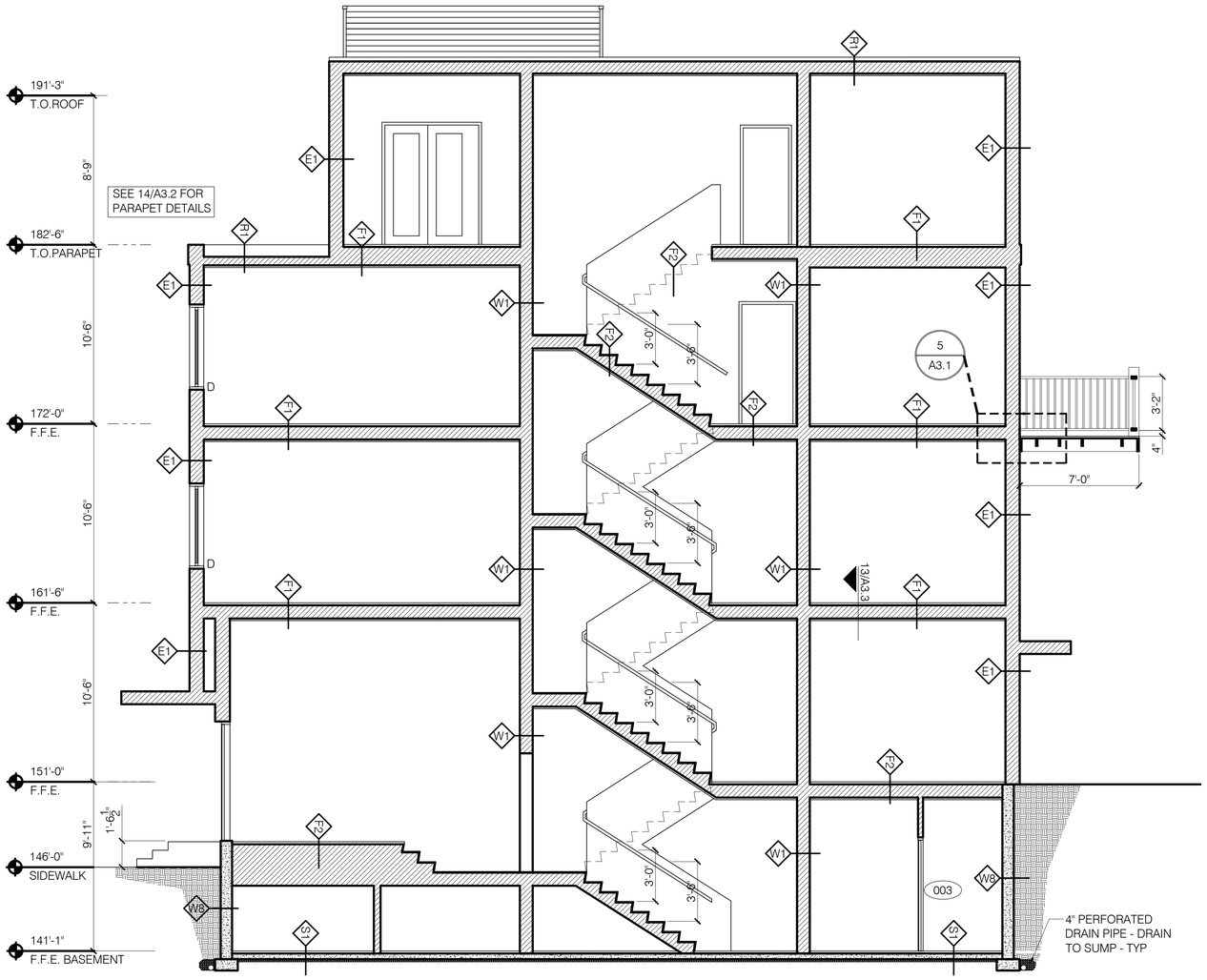
0 1'-0" SCALE: 1" = 1'-0"

3 NOT USED

0 1'-0" SCALE: 1" = 1'-0"

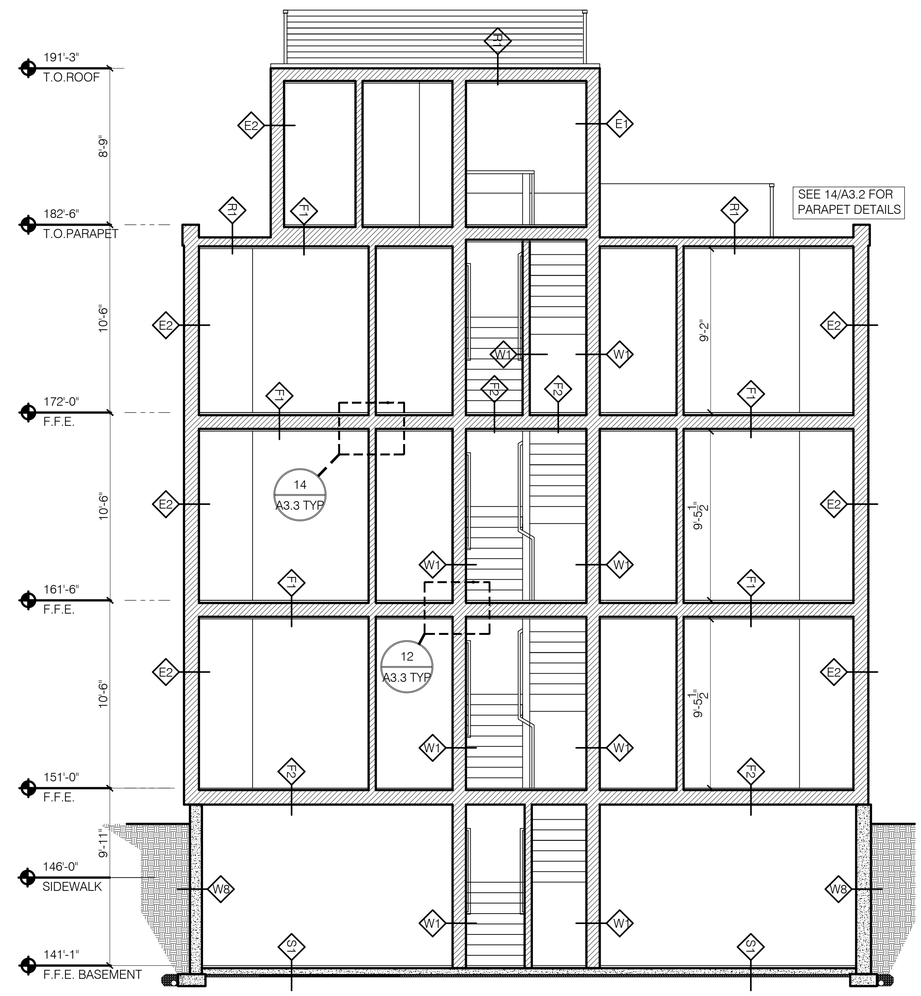
4 NOT USED

0 1'-0" SCALE: 1" = 1'-0"



1 BUILDING SECTION

0 4'-0" SCALE: 1/4" = 1'-0"



2 BUILDING SECTION

0 4'-0" SCALE: 1/4" = 1'-0"

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bild ARCHITECTURE

LICENSED ARCHITECT 2/24/17 EVAN A. CARROLL No. 3687 STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND PORTLAND, ME

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SHEET TITLE **BUILDING SECT**

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SHEET SCALE **1/4" = 1'-0"**

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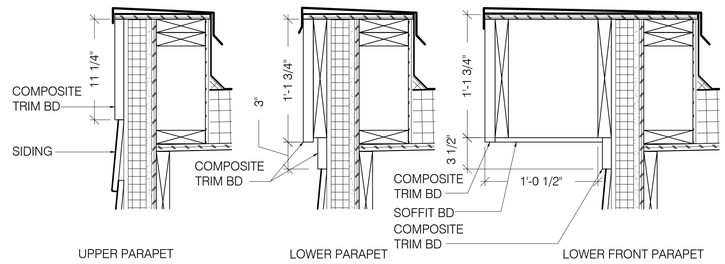
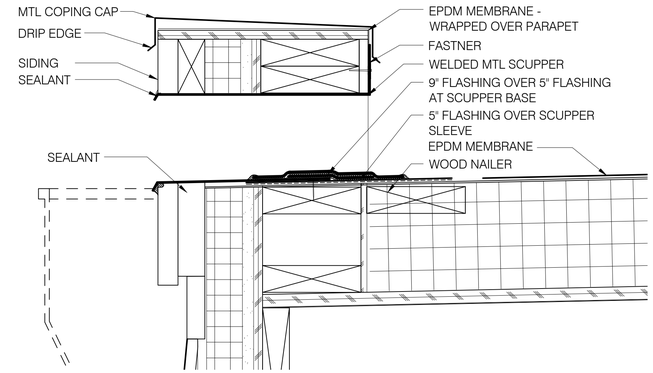
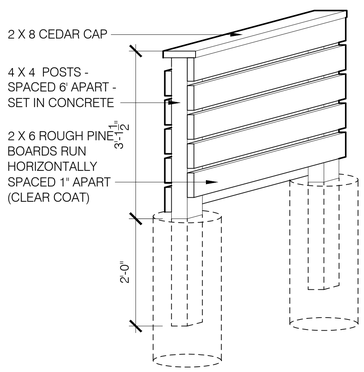


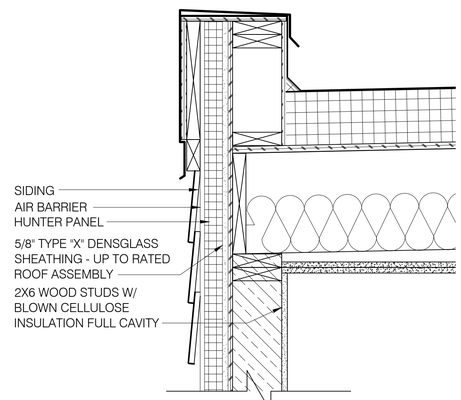
14 PARAPET DETAILS
0 8" SCALE: 1-1/2" = 1'-0"



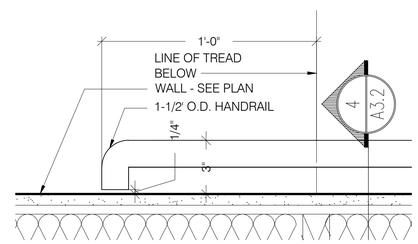
10 SCUPPER DETAIL
0 4" SCALE: 3" = 1'-0"



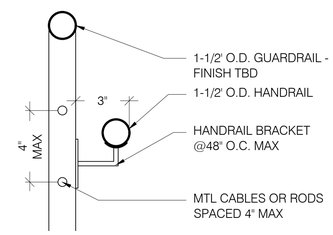
13 FENCE DETAIL NEAR CURB
A3.1A3.3 0 1' - 4" SCALE: 3/4" = 1'-0"



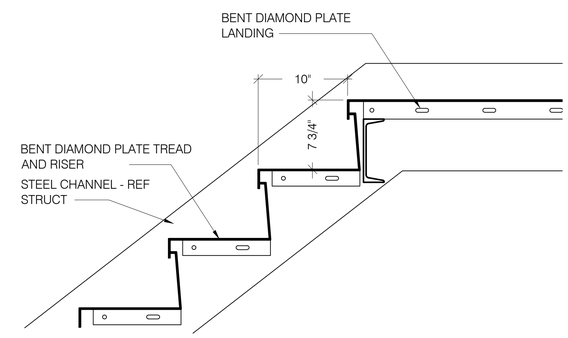
11 T.O. RATED EXT WALL DETAIL
A3.1A3.3 0 8" SCALE: 1-1/2" = 1'-0"



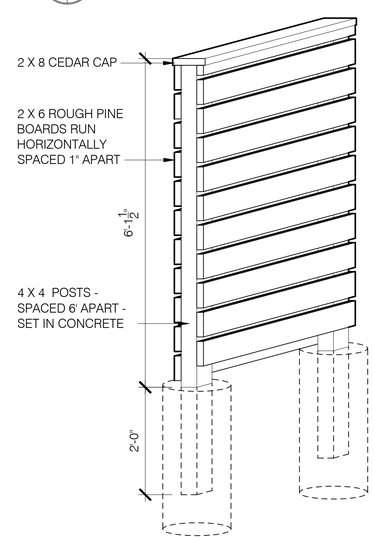
6 HANDRAIL DETAIL
0 4" SCALE: 3" = 1'-0"



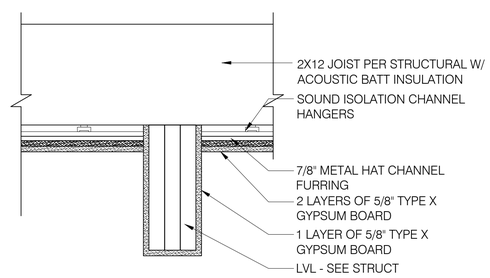
7 HANDRAIL SECTION
0 4" SCALE: 3" = 1'-0"



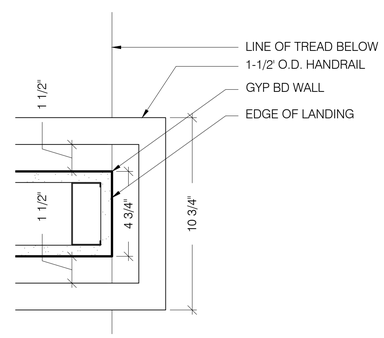
3 EXTERIOR TREAD/RISER DETAIL
A3.2A3.2 0 8" SCALE: 1-1/2" = 1'-0"



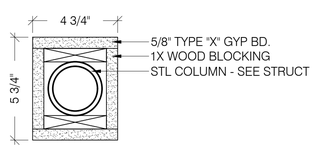
12 FENCE DETAIL
A3.1A3.3 0 1' - 4" SCALE: 3/4" = 1'-0"



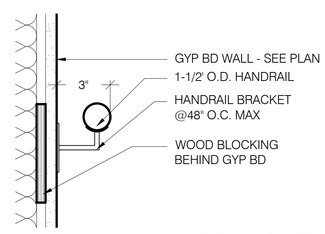
9 LVL WRAP DETAIL
A3.1A3.3 0 8" SCALE: 1-1/2" = 1'-0"



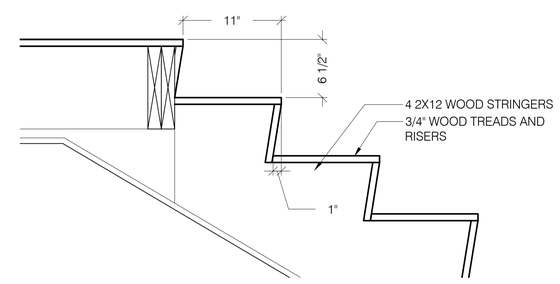
5 HANDRAIL DETAIL
0 4" SCALE: 3" = 1'-0"



8 COLUMN WRAP DETAIL
A1.1A3.3 0 4" SCALE: 3" = 1'-0"



4 HANDRAIL SECTION
0 4" SCALE: 3" = 1'-0"



2 TYP. RISER TREAD DETAIL
A3.1A3.2 0 8" SCALE:1-1/2" = 1'-0"

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LICENSED ARCHITECT 2/24/17 EVAN A. CARROLL No. 3687 STATE OF MAINE

PROJECT NO. 16035
PROJECT NAME 7 CUMBERLAND PORTLAND, ME

REVISIONS
1 03-15-2017
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3 -
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ISSUE DATE 2/24/17
SHEET SCALE VARIES

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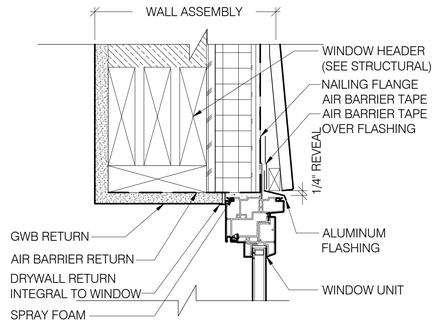
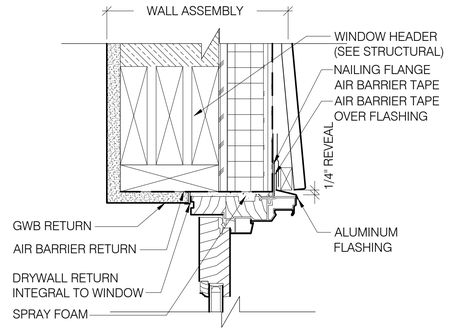


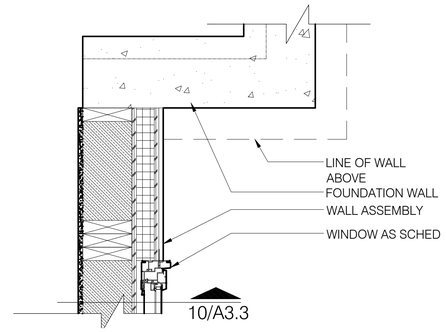
1 HEAD - TYPICAL WINDOW

0 4" SCALE: 3" = 1'-0"



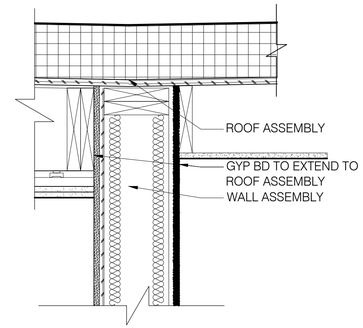
5 HEAD - BALCONY DOOR

0 4" SCALE: 3" = 1'-0"



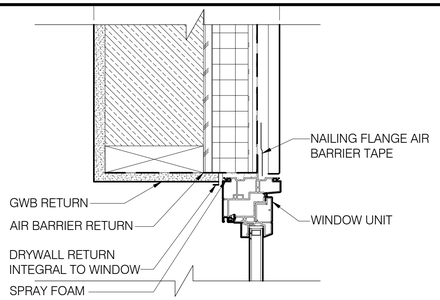
9 JAMB - FRONT SIDE LIGHTS

0 8" SCALE: 1-1/2" = 1'-0"



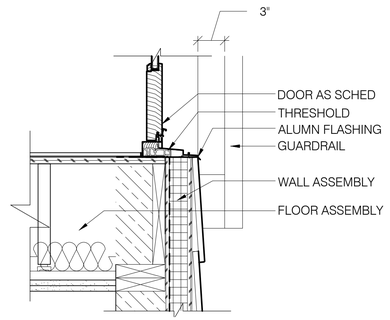
11 T.O. WALL @ STAIR SHAFT

0 8" SCALE: 1-1/2" = 1'-0"



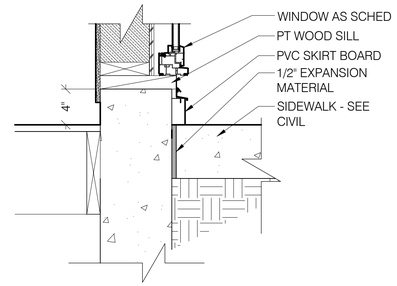
2 JAMB - TYPICAL WINDOW

0 4" SCALE: 3" = 1'-0"



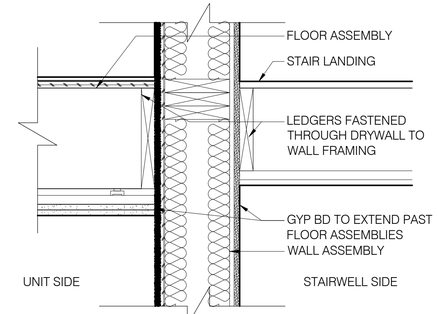
6 SILL - BALCONY DOOR

0 4" SCALE: 1-1/2" = 1'-0"



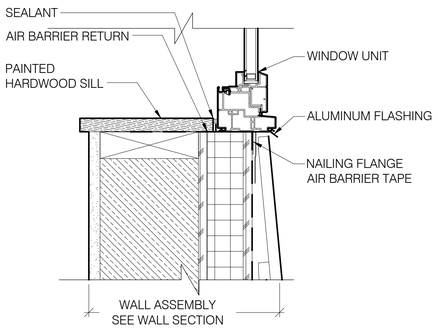
10 SILL - FRONT SIDE LIGHTS

0 8" SCALE: 1-1/2" = 1'-0"



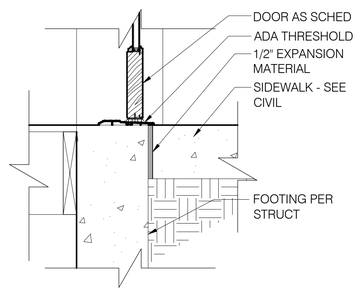
12 RATED WALL STAIR/UNIT

0 8" SCALE: 1-1/2" = 1'-0"



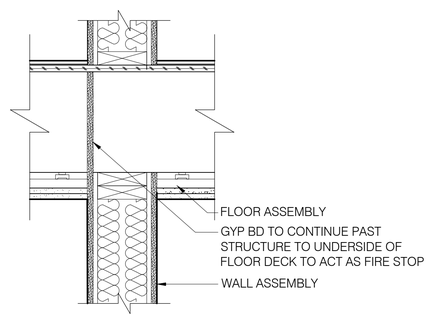
3 SILL - TYPICAL WINDOW

0 4" SCALE: 3" = 1'-0"



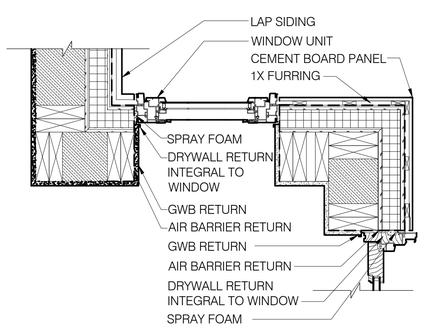
7 SILL - FRONT ENTRY DOOR

0 8" SCALE: 1-1/2" = 1'-0"



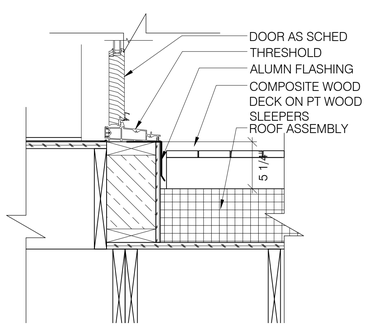
13 RATED WALL BETWEEN UNITS

0 8" SCALE: 1-1/2" = 1'-0"



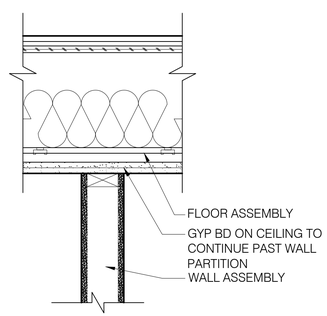
4 JAMB - BAY WINDOW

0 8" SCALE: 1-1/2" = 1'-0"



8 SILL - ROOFTOP DOOR

0 8" SCALE: 1-1/2" = 1'-0"



14 T.O. PARTITION

0 8" SCALE: 1-1/2" = 1'-0"

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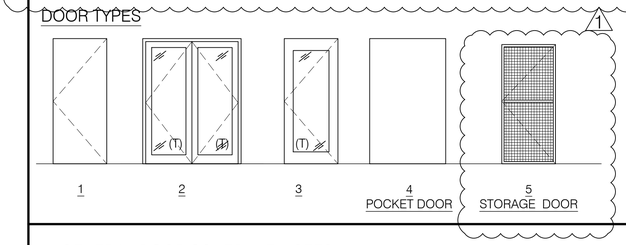
DOOR SCHEDULE

DOOR #	FROM	TO	SIZE	DOOR MATERIAL	DOOR TYPE	DOOR RATING	FRAME	HARDWARE SET	NOTES
001	NOT USED								
002	STAIRCASE	BASEMENT	3'-0" X 7'-0"	HM	1	1.5 HRS	HM	05	-
003 TO 009	BASEMENT	STORAGE	3'-0" X 6'-8"	2X WD	5	-	2X WD	06	3
101, 201	STAIRCASE	UNIT ENTRANCE	3-0" X 7'0"	SOLID CORE	1	1.5 HRS	HM	01	-
102, 202	UNIT	BALCONY	5'-6" X 7'-0"	COMPOSITE	2	-	COMP	03	1
103, 203	UNIT	TOILET	3'-0" X 7'-0"	SOLID CORE	1	-	WD	02	-
104, 204	UNIT	BEDROOM	4'-3" X 6'-8"	WD	4		N/A	07	
105	STAIRCASE	LOBBY	3-0" X 7'-0"	SOLID CORE	1	1.5HRS	HM	05	-
106	LOBBY	EXTERIOR	3'-0" x 7'-0"	IA	3	-	ALUM	04	1,2
107	EXTERIOR	STAIR 01	3'-0" X 7'-0"	INSUL ALUMN	3	-	ALUMN	04	1,2
108	STAIRCASE	LOBBY	3-0" X 7'-0"	SOLID CORE	1	1.5HRS	HM	05	-
301, 401	STAIRCASE	UNIT ENTRANCE	3-0" X 7'-0"	SOLID CORE	1	1.5 HRS	HM	01	-
302, 402	UNIT	BALCONY	5'-6" X 7'-0"	COMPOSITE	2	-	COMP	03	1
303, 403	UNIT	TOILET	2-8" X 7'-0"	SOLID CORE	1	-	WD	02	1
304,404	UNIT	BEDROOM	4'-3" X 6'-8"	WD	4	-	N/A	07	-
501, 601	STAIRCASE	UNIT ENTRANCE	3-0" X 7'-0"	BY WIN MANUF	1	1.5 HRS	HM	01	-
502, 602	UNIT	BALCONY	5'-6" X 7'-0"	COMP	2	-	COMP	03	1
503, 603	UNIT	TOILET	2-8" X 7'-0"	SOLID CORE	1	-	WD	02	-
504, 506	UNIT	BEDROOM	4'-3" X 6'-8"	WD	4	-	N/A	07	-
505, 507	BEDROOM	DECK	3'-0" x 7'-0"	COMPOSITE	3	-	COMP	03	1
604	HALLWAY	W/D	3'-0" x 7'-0"	SOLID CORE	1	-	WD	08	-
605	HALLWAY	ROOF DECK	3'-0" x 7'-0"	COMPOSITE	1	-	COMP	03	-
606	HALLWAY	BEDROOM	3'-0" x 7'-0"	SOLID CORE	1	-	WD	02	-
607,610	BEDROOM	TOILET	3'-0" x 7'-0"	SOLID CORE	1	-	WD	02	-
608, 611	BEDROOM	DECK	5'-6" X 7'-0"	COMPOSITE	2	-	COMP	03	-
609	UNIT	BEDROOM	4'-3" X 6'-8"	WD	4	-	N/A	07	-

DOOR TYPES



GENERAL DOOR SCHEDULE NOTES:

- ALL DOOR HANDLES TO BE ADA COMPLIANT LEVER HANDLES.
- ALL INTERIOR DOOR HARDWARE FINISH TBD
- DOORS WITHIN UNITS FINISH TBD
- PROVIDE A COMMON SPACES KEY FOR TENANT ENTRANCES AND STORAGE AREA (ISSUED TO EACH TENANT)

DOOR SCHEDULE NOTES:

1. SAFETY GLAZING
2. INSULATED
3. 2X WOOD FRAME WITH WIRE MESH
4. -
5. -
6. -

HARDWARE SETS:

01	UNIT ENTRY DOORS:	PEEP HOLE, (3) HINGES, SOFT CLOSE DAMPER, STRIKE, DOOR STOP, SINGLE CYLINDER DEADBOLT, ENTRY LOCKSET, THROW-BOLT, LATCH ASSEMBLY, LEVER, CLOSER, THRESHOLD, SWEEP
02	BATHROOM DOORS:	(3) HINGES, STRIKE, DOOR STOP, LEVER, BED/BATH LOCKSET
03	PATIO DOORS:	(3) HINGES, ESCUTCHEON PLATE, HANDLE, DEADBOLT LOCKSET
04	ENTRY DOOR:	(3) HINGES, STRIKE, DOOR STOP, THRESHOLD, SWEEP ENTRY LOCKSET, GASKET, LEVER, METAL PROTECTIVE TRIM, CLOSER
05	STAIRWAY/HALLWAY DOOR	(3) HINGES, SOFT CLOSE DAMPER, STRIKE, DOOR STOP, FREE PASSAGE LATCH ASSEMBLY, LEVER, CLOSER
06	STORAGE DOOR:	(3) HINGES, PADLOCK HARDWARE
07	BARN DOORS:	TRACK, COASTERS, DOOR GUIDE, DECORATIVE PULL
08	UTILITY ROOM DOOR	HINGES, STRIKE, PASSAGE LEVER

FINISH SCHEDULE

UNIT #	ROOM	FLOOR	WALLS N	WALLS S	WALLS E	WALLS W	BASE	CEILING	COUNTERTOP/ BACKSPLASH	NOTES
-	STORAGE & BASEMENT	CONC	-	-	-	-	-	PT	-	1
-	STAIR	CPT	PT	PT	PT	PT	RWB	PT	-	
1	STUDIO	VL	PT	PT	PT	PT	WD	PT	-	-
1	BATHROOM	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
1	KITCHEN	VL	PT	PT	PT	PT	WD	PT	C2	-
2	STUDIO	VL	PT	PT	PT	PT	WD	PT	-	-
2	BATHROOM	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
2	KITCHEN	VL	PT	PT	PT	PT	WD	PT	C2	-
3	STUDIO	VL	PT	PT	PT	PT	WD	PT	-	-
3	BATHROOM	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
3	KITCHEN	VL	PT	PT	PT	PT	WD	PT	C2	-
4	STUDIO	VL	PT	PT	PT	PT	WD	PT	-	-
4	BATHROOM	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
4	KITCHEN	VL	PT	PT	PT	PT	WD	PT	C2	-
5	BEDROOM 1	VL	PT	PT	PT	PT	WD	PT	-	-
5	BEDROOM 2	VL	PT	PT	PT	PT	WD	PT	-	-
5	BATHROOM	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
5	KITCHEN	VL	PT	PT	PT	PT	WD	PT	C2	-
6	POWDER ROOM	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
6	KITCHEN	VL	PT	PT	PT	PT	WD	PT	C2	-
6	BEDROOM 1	VL	PT	PT	PT	PT	WD	PT	-	-
6	BATHROOM 1	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2
6	BEDROOM 2	VL	PT	PT	PT	PT	WD	PT	-	-
6	BATHROOM 2	T	PT/T	PT/T	PT/T	PT/T	T	PT	C1	2

GENERAL FINISH SCHEDULE NOTES:

- PAINT SHEENS TO BE AS FOLLOWS
  - WALLS: EGGSHELL SATIN FINISH
  - CEILINGS: FLAT
  - TRIM: SEMI-GLOSS

SPECIFIC FINISH SCHEDULE NOTES:

1. ANY EXPOSED DRYWALL IN BASEMENT TO BE PAINTED ACCORDING TO GENERAL NOTE #1.
2. SHOWERS TO BE TILE WALLS. SHOWER BASE TO BE SPECIFIED BY DEVELOPER.
3. -
4. -
5. -

LEGEND:

CODE:	MATERIAL:	SPECIFICATION BY DEVELOPER:
CONC	CONCRETE	
PT	PAINT	
CPT	CARPET	
T	TILE	
C-1	BATH COUNTERTOP	
C-2	KITCHEN COUNTERTOP	
RWB	RUBBER WALL BASE	
VL	ENGINEERED VINYL PLANK	
WD	WOOD	

KITCHEN APPLIANCES

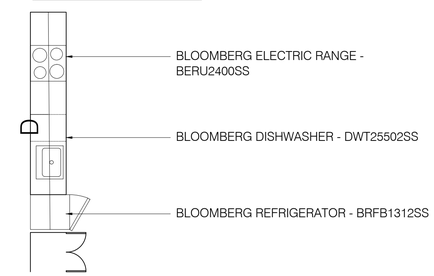


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bild ARCHITECTURE

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1 CUMBERLAND AVE WEST
0 30'

2 CUMBERLAND AVE EAST
0 30'

N

5 SITE MAP
0 NTS

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Portland, ME
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bild ARCHITECTURE

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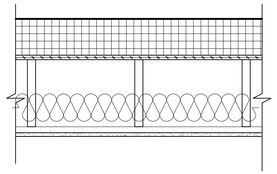
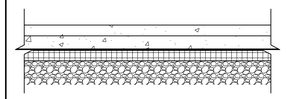
ROOF ASSEMBLY TYPES

GRAPHIC DESCRIPTION	DESCRIPTION
	• ADHERED MEMBRANE ROOFING SYSTEM • 6" TAPERED EXTRUDED POLYISOCYANURATE (MIN R-30) • 5/8" ZIP SYSTEM SHEATHING (AIR BARRIER) • 2X12 JOIST PER STRUCTURAL • 6 1/2" FIBERGLASS BATT INSULATION (R-20) • 7/8" METAL HAT CHANNEL FURRING • 5/8" TYPE X GYPSUM BOARD

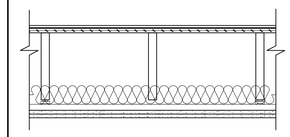
TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
R1	1-HR	SIM L528 & L513	N/A	53.06

SLAB ASSEMBLY TYPES

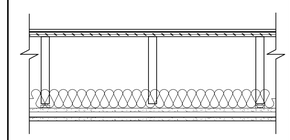
GRAPHIC DESCRIPTION	DESCRIPTION
	• 4" TROWELED, AND WAXED CONCRETE SLAB. REINFORCE PER STRUCTURAL DRAWINGS. • 6 MIL POLY VAPOR BARRIER • 2" RIGID INSULATION • 6" CRUSHED STONE

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
S1	N/A	N/A	N/A	10.00

FLOOR/CEILING ASSEMBLY TYPES

GRAPHIC DESCRIPTION	DESCRIPTION
	• 8MM ENGINEERED VINYL PLANK • .11" INSULAYMENT PAD • 3/4" PLYWOOD T&G SUB-FLOOR • 2X12 JOIST PER STRUCTURAL W/ ACOUSTIC BATT INSULATION • SOUND ISOLATION CHANNEL HANGERS • 7/8" METAL HAT CHANNEL FURRING • 2 LAYERS OF 5/8" TYPE X GYPSUM BOARD

TYPE	FIRE RATING	UL NUMBER	IIC RATING	STC RATING	R-VALUE
F1	1-HR	L569	48	58	N/A

GRAPHIC DESCRIPTION	DESCRIPTION
	• 8MM ENGINEERED VINYL PLANK • .11" INSULAYMENT PAD • 3/4" PLYWOOD T&G SUB-FLOOR • 2X12 JOIST PER STRUCTURAL W/ ACOUSTIC BATT INSULATION • SOUND ISOLATION CHANNEL HANGERS • • 5/8" TYPE X GYPSUM BOARD • 7/8" METAL HAT CHANNEL FURRING • 5/8" TYPE X GYPSUM BOARD

TYPE	FIRE RATING	UL NUMBER	IIC RATING	STC RATING	R-VALUE
F2	2-HR	SIM L511	48	58	N/A

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101

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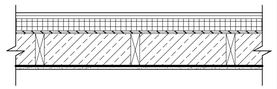
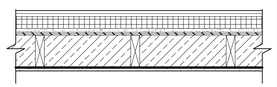
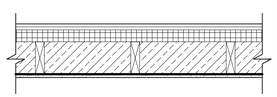
WALL ASSEMBLY TYPES

GRAPHIC DESCRIPTION	DESCRIPTION
	• LP SMART SIDING - SMOOTH FINISH - CLAPBOARD • COMMERCIAL AIR/VAPOR BARRIER • HUNTER PANEL XCI NB • 1/2" PLYWOOD SHEATHING. REFER TO STRUCTURAL DWGS FOR FASTENING SIZE, SPACING, AND BLOCKING REQUIREMENTS. • 2X6 WOOD STUDS W/ BLOWN CELLULOSE INSULATION FULL CAVITY • 6 MIL POLY VAPOR BARRIER • 5/8" TYPE X GYPSUM BOARD (SEE X/A3.3 FOR EXTERIOR TOP OFF WALL DETAIL)

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
E1	1-HR (FROM INTERIOR)	U354	N/A	33.70

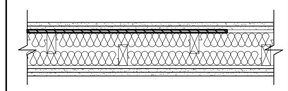
GRAPHIC DESCRIPTION	DESCRIPTION
	• LP SMART SIDING - SMOOTH FINISH - CLAPBOARD • COMMERCIAL AIR/VAPOR BARRIER • HUNTER PANEL XCI NB • 5/8" TYPE "X" DENSGLASS SHEATHING. REFER TO STRUCTURAL DWGS FOR FASTENING SIZE, SPACING, AND BLOCKING REQUIREMENTS. • 2X6 WOOD STUDS W/ BLOWN CELLULOSE INSULATION FULL CAVITY • 6 MIL POLY VAPOR BARRIER • 5/8" TYPE X GYPSUM BOARD (SEE X/A3.3 FOR EXTERIOR TOP OFF WALL DETAIL)

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
E2	1-HR (FROM INT + EXT)	U364	N/A	33.63

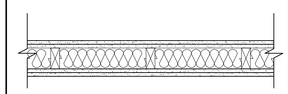
GRAPHIC DESCRIPTION	DESCRIPTION
	• LP SMART SIDING - SMOOTH FINISH - CLAPBOARD • COMMERCIAL AIR/VAPOR BARRIER • HUNTER PANEL XCI NB • 2X6 WOOD STUDS W/ BLOWN CELLULOSE INSULATION FULL CAVITY • 6 MIL POLY VAPOR BARRIER • 5/8" TYPE X GYPSUM BOARD (SEE X/A3.3 FOR EXTERIOR TOP OFF WALL DETAIL)

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
E3	1-HR (FROM INTERIOR)	SIM U354	N/A	33.70

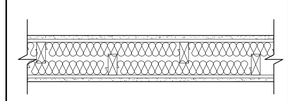
WALL ASSEMBLY TYPES

GRAPHIC DESCRIPTION	DESCRIPTION
	STAIR SEPARATION ASSEMBLY • (2) LAYER 5/8" TYPE X GWB SEALED TO UNDERSIDE OF DECK. • 1/2" RESILIENT CHANNELS @ 16" O.C. HORIZONTALLY - SEE NOTE • 2X6 WOOD TOP AND BOTTOM PLATES TO UNDERSIDE OF DECK. REFER TO STRUCTURAL DWGS FOR STUD SIZE, SPACING, AND ALIGNMENT REQUIREMENTS. (2X4 STAGGERED @ 12" C/C U.N.O.) CONTINUOUS SOUND ATTENUATION BATTS. • 1/2" RESILIENT CHANNELS @ 16" O.C. HORIZONTALLY • (2) LAYER 5/8" TYPE X GWB SEALED TO UNDERSIDE OF DECK. WHEREVER STRUCTURAL LEDGERS ARE NEEDED - PLACE IN 1/2 PLYWOOD BLOCKING IN LIEU OF CHANNEL

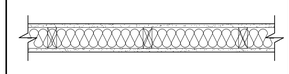
TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W1	2-HR	SIM U301	54	N/A

GRAPHIC DESCRIPTION	DESCRIPTION
	• (2) LAYER 5/8" TYPE X GWB SEALED TO UNDERSIDE OF DECK. • 2X6 WOOD TOP AND BOTTOM PLATES TO UNDERSIDE OF DECK. REFER TO STRUCTURAL DWGS FOR STUD SIZE, SPACING, AND ALIGNMENT REQUIREMENTS. (2X4 STAGGERED @ 12" C/C U.N.O.) CONTINUOUS SOUND ATTENUATION BATTS. • (2) LAYER 5/8" TYPE X GWB SEALED TO UNDERSIDE OF DECK

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W2	2-HR	U301	NA	NA

GRAPHIC DESCRIPTION	DESCRIPTION
	UNIT SEPARATION ASSEMBLY • (1) LAYER 5/8" TYPE X GWB SEALED TO UNDERSIDE OF DECK. • 1/2" RESILIENT CHANNELS @ 16" O.C. HORIZONTALLY • 2X6 WOOD TOP AND BOTTOM PLATES TO UNDERSIDE OF DECK. REFER TO STRUCTURAL DWGS FOR STUD SIZE, SPACING, AND ALIGNMENT REQUIREMENTS. (2X4 STAGGERED @ 12" C/C U.N.O.) CONTINUOUS SOUND ATTENUATION BATTS. • 1/2" RESILIENT CHANNELS @ 16" O.C. HORIZONTALLY • (1) LAYER 5/8" TYPE X GWB SEALED TO UNDERSIDE OF DECK. (3/A3.3) PROVIDE 2X FIRE BLOCKING AT CEILING LEVEL OR ALTERNATIVE METHOD APPROVED BY IBC 2009.

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W3	1-HR	U340	54	N/A

GRAPHIC DESCRIPTION	DESCRIPTION
	• 5/8" GYPSUM BOARD • 2X4 OR 2x6 WOOD STUDS @ 16" O.C. - SEE PLAN • 5/8" GYPSUM BOARD NOTE: PROVIDE MOISTURE RESISTANT GWB AT BATHROOMS AND KITCHENS.

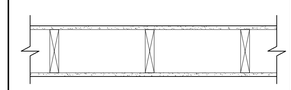
TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W4	N/A	N/A	N/A	N/A

GRAPHIC DESCRIPTION	STORAGE PARTITION WALL
	• WELDED WIRE FENCING • 2X4 WOOD STUDS @ 16" O.C. • WELDED WIRE FENCING

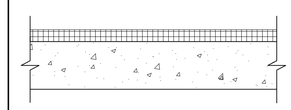
TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W5	N/A	N/A	N/A	N/A

GRAPHIC DESCRIPTION	CHASE WALL
	• 2X4 WOOD STUDS @ 16" O.C. • 5/8" GYPSUM BOARD • MOISTURE RESISTANT GYP IN BATHS & WET AREAS

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W6	N/A	N/A	N/A	N/A

GRAPHIC DESCRIPTION	PLUMBING WALL
	• 5/8" GYPSUM BOARD • 2X8 WOOD STUDS @ 16" O.C. • 5/8" GYPSUM BOARD

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W7	N/A	N/A	N/A	N/A

GRAPHIC DESCRIPTION	DESCRIPTION
	• 2" THERMAX SHEATHING (R-13) • 8" CONC WALL

TYPE	FIRE RATING	UL NUMBER	STC RATING	R-VALUE
W8	N/A	N/A	N/A	14.32

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bild ARCHITECTURE

LICENSED ARCHITECT 2/24/17 EVAN A. CARROLL No. 3687 STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND
PORTLAND, ME

REVISIONS
1 | 03-15-2017
2 | -
3 | -
4 | -
5 | -

PERMIT SET
NOT FOR CONSTRUCTION

DRAWN BY
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SHEET TITLE
CONSTRUCTION ASSEMBLIES

ISSUE DATE
2/24/17
SHEET SCALE
NTS

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Maine Human Rights Act (ANSI A117.1 - Use the Fair Housing Guidelines)

2. Applicability. This section applies to multifamily housing accommodations constructed for first occupancy after March 13, 1991.

3. Standards. Facilities subject to this section must meet the following standards.

A. Doors designed to allow passage into and within all premises within those accommodations must be sufficiently wide to allow passage by a person in a wheelchair.

B. A route accessible to a person in a wheelchair into and through the dwelling unit must exist.

C. Light switches, electrical outlets, thermostats and other environmental controls must be in locations accessible to a person in a wheelchair.

D. Bathroom walls must have reinforcements to accommodate the installation of grab bars.

E. Kitchens and bathrooms must be accessible to and usable by a person in a wheelchair.

Zoning:

Building, height of: The vertical measurement from grade, or the predevelopment grade on the islands, to the highest point of the roof beams in flat roofs

Building Area Information

Building Footprint:	1,676 SF
Building Area:	7,698 SF

NFPA Code Overview

Use:	New Residential Apartment Building
Construction:	No minimum requirement
Sprinkler:	NFPA 13R
Occupancy:	32 Occupants

IBC Code Overview

Use:	R-2, S-1
Construction:	Type VA
Sprinkler:	NFPA 13R
Occupancy:	30 in R-2 + 5 in S-2 = 35 Occupants

IBC - Detail Code Review

Use and Occupancy Classification:

310.1 Residential Group R-2 (Apartments)

311.2 Storage S-1

420.2 Fire Partitions Separating Dwelling Units (709)

420.3 Floor Assemblies Separating Dwelling Units (712)

503	R-2 VA	7,000sf	3 stories	50' tall
	S-1 VA	14,000sf	3 stories	50' tall

504.2 Where a building is equipped throughout with an approved automatic sprinkler system, the maximum building height is increased by 20 feet, and the maximum number of stories is increased by one.

508.4 S-1 and R occupancies shall be separated by 2-HR when sprinkled w/ NFPA 13R

601 Type VA - No fire-resistance rating requirements for building elements

Primary Structural Frame	1hr
Exterior Bearing walls	1hr
Interior Bearing walls	1hr
Nonbearing Exterior	See table 602
Nonbearing Interior	0hr
Floor Construction	1hr
Roof Construction	1hr

602	Separation distance	5'≤X<10'	VA 1-hr exterior wall SW & NE building side (rated from both sides)
		10'≤X<30'	VA 1-hr (inside only)
		X≥30	VA No rating required

704.2 Columns in basement shall be individually wrapped to provide 1hr rating

704.3 Dropped LVLs in basement shall be individually wrapped to provide 1hr rating

704.4 Secondary member in ceiling and walls may be protected as part of ceiling and wall assemblies in wood frame construction

705.2.2 Projections (including balconies) may be of any material

705.5 When exterior walls are required to be rated:

X<10' Rated for exposure from both sides

X>10' Rated from inside

705.8 Exterior wall openings limited by table 705.8 (see table on elevation sheets)

705.11.4 Parapet not required on any exterior walls

707.3.1 Fire Barrier required for shaft enclosure

707.5 Fire barriers: From TOP of floor to bottom of decking above (cont. thru concealed)

707.5.1 Fire Barrier supporting construction shall have same rating

708.1 Shaft enclosures shall be constructed of fire barriers and horizontal assemblies.

708.2 Shaft enclosure is required stair

708.4 Shaft Enclosure: 2 hour when connecting four or more stories

709.1 Fire partitions required to separate dwelling units

709.3 Fire partitions shall be not less than 1-hr

709.4 Fire partition continuity: from TOP of floor to bottom of decking above or to bottom of ceiling assembly (with fireblocking or draftstopping)

712.3 Horizontal Assembly = Dwelling unit and sleeping unit separation in buildings of Type VA construction shall have a fire-resistance rating of not less than 1 hour in buildings equipped with an automatic sprinkler system.

712.4 Supporting construction of horz. assembly between units is required to be rated in VA

713 All Rated vertical and horizontal assemblies shall be complete assemblies in that any penetrations shall be treated as in accordance with this section.

714 All Rated vertical and horizontal assemblies shall be complete assemblies in that any joints shall be treated as in accordance with this section.

715 All Rated vertical and horizontal assemblies shall be complete assemblies in that any openings shall be treated as in accordance with this section.

715.4 Doors in 2-hour stair shaft shall have a rating of 1-1/2 hour

716 All Rated vertical and horizontal assemblies shall be complete assemblies in that any ducts and air transfers shall be treated as in accordance with this section.

716.6.2 Ducts and air transfer openings penetrating a rated ceiling membrane must be installed with a listed ceiling radiation damper

717 Fire blocking and draft-stopping shall be installed in concealed spaces in accordance with this section.

803.9 R-2: Exit enclosures, corridors, rooms and enclosed spaces required to have Class C finishes.

S-1: Exit enclosures, corridors, rooms and enclosed spaces required to have Class C finishes.

901.6.1 Automatic sprinkler system shall be monitored by a supervising station (NFPA 72)

901.6.2 Fire alarm system shall be monitored by a supervising station

903.2.8 Sprinkler System is required for Group R

903.3.1.2 NFPA 13R is permitted up to and including 4 stories

905.3.1 Class III standpipe system shall be installed

906.1 Fire extinguisher REQUIRED

907.2.9.1 Manual pull station fire alarm system is required as building is four stories.

907.2.11.2 Interconnected Smoke Alarms Required:

Outside each sleeping area and in each sleeping room

1003.2 Min egress ceiling height: 7'-6"

1003.5 Exception 1: A single step (under 7") allowed at exterior doors in R-2 that are not required to be accessible doors.

1004.1.1 Occupancy Load for Residential: 200 gross at 5,373 SF is 27 occupants

Occupancy Load for Storage: 300 gross at 1,781 SF is 6 occupants

1005.3 Door swing shall not reduce the required egress width more than half

1006.1 Stair must be illuminated at all times

1007.3 Sprinkler precludes need for wider stair or area of refuge

1008.1.1 Min Door size: 32" clear (36" door)

1008.1.5 Same floor elevation on either side of doors

1008.1.6 Landing not less than width of door

1008.1.8 48" plus door swing between doors in succession

1009.1 Min stair width 36" (for occ. less than 50)

1009.2 Min head clearance 80" (6'-8")

1009.4 7" rise max, and 11" run min

1009.5 Landing width no more than stair width

1009.6 Stair construction can be of any material permitted by construction type

1012.2 Handrails between 34"-38"

1012.6 Railing extensions must be 12" at top of stairs and 11" at bottom.

1013.2 Min Guard Height: 42"

1014.3 NFPA 101 Table A7.6

Sprinkled Apartments common Path Limit: 50'

NFPA 101 30.2.5.3.2: "Travel within a dwelling unit shall not be included when determining the common path of travel

1015.1 One exit is permitting from dwelling units at occupant load for individual units is under 20 and building is sprinkled 13R.

1016.1 Exit Access travel Distance: 250' (for sprinkled 13R R-2)

1018.2 Corridor Min Width: 36" (for occ under 50)

1021.2 Three-story R-2 building is permitted to have one exit if under 4-units per floors, under 50' travel distance to exit, sprinkled 13R, and provided with emergency escape openings.

Basement S-1 can have one exit is 29 occupants and 100 feet travel distance

1022.1 2-hour exit enclosure required when connecting 4-stories

~~Stairway from basement not enclosed. Under 10 occupants and not open to story above~~

1022.8 Floor identification signs shall comply with this section

1023.2 Min exit passageway width: 36" for less than 50 occupants

1023.3 Exits passageway min rating: 1-hr (or rating of connected enclosure if greater: 2-hr)

Constructed of fire barriers and horizontal assemblies.

1029.1 Sleeping rooms below the fourth story shall have emergency escape and rescue openings

1029.2 Min area: 5.7SF

Min height: 24"

Min width: 20"

1029.3 Max height about floor: 44"

1100 Chapter does not apply in the State of Maine

1207 Sound transmission between dwelling units

Walls: STC-50 (45 field tested)

Ceilings: IIC-50 (45 field tested)

2406.4 Safety Glazing: all swinging doors, fixed and sliding panels of sliding door assemblies, glazing in an individual fixed or operable panel adjacent to a door where the nearest exposed edge of the glazing is within a 24 inch arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60 inches above the walking surface, glazing with exposed area of an individual pane greater than 9 square feet, and glazing w/ exposed bottom edge less than 18 inches above floor.

IECC

301.1 Climate Zone 6A

402.1.1 Element:

	Required:	Provided:
Fenestration U-Factor	0.35 max	0.17
Ceiling R-Value	49 min	71
Wood Frame R-Value	20 min	32.6
Floor R-Value	30 min	51
Slab R-Value	10 min	10

NFPA 10

NFPA 106.2.1.1 Each floor shall have a single (2) unit Class A Fire Extinguisher

NFPA 101

3.3.32.5 New Building

6.1.8.1.5 Residential Occupancy - Apartment Building (Chapter 30)

6.1.13 Storage (Chapter 42)

6.1.14.4.1 Required Separation - 2hr between Apt Bldg & Storage

6.1.14.4.3 1 hour separation required in sprinkled building

6.2.2.3 Ordinary Hazard Contents

7.1.3.2.1 Stairs connecting four or more stories shall have a minimum of 2 hour rating

7.1.5.1 Min headroom: 7'-6"

7.1.6.3 Cross Slope limited to 1:48

7.2.1.2.3.2 Egress door min clear width: 32"

7.2.1.4 Door swing and force to open shall comply with this section

7.2.1.5 Door locks, latches and alarms shall comply with this section

7.2.2.2.1.1 Max riser height: 7"

Min Tread depth: 11"

Min headroom: 6'-8"

7.2.2.2.1.2 Min stair width: 36" (for occupancy under 50)

7.2.2.3.2.3 Min landing depth: stair width

7.2.2.4.4.1 Handrail height: 36"

7.2.2.4.4.6 Handrail shape: 1 ½" circular cross section

7.2.2.4.4.9 Handrails shall return to wall or newel post

7.2.2.4.4.10 Handrails shall extend 12" at top of stair and one tread length at bottom

7.2.2.4.5.2 Min guard height: 42"

7.2.2.4.5.3 Open guards shall not allow the passage of a 4" sphere

7.2.2.5.4 Stairway identification shall comply with this section.

7.2.6.3 Stair discharge shall have a 2-hr fire resistance rating.

7.2.12.1.1 Sprinkler precludes need for area of refuge in stair.

7.3.1.2 Occupancy Load

Residential Apartment:	200 gross at 7,164sf is	32 occupants
Storage:	NA	0
Total:		32 occupants

7.3.3.1 0.3 Occ. per in. for Stairs

7.3.4 Min Egress width: 36"

7.4.1.1 See 30.2.4.4 and 42.2.41

7.8 Egress Illumination shall be in accordance with this section.

7.9 Emergency Lighting shall be in accordance with this section.

7.10 Marking for means of egress shall comply with this section.

30.1.6 No minimum construction requirements

30.2.1.1 Means of Egress shall comply with Chapter 7 and Chapter 30

30.2.4.4 Single stair permitted from building given

- 4 stories
- Less than 4 units/floor
- Two exits from basement
- No distance from unit door to stair
- 2-hr rated stair
- Self-closing doors
- No corridors
- 1 hr rating between units

30.2.5	Common Path Limit:	50'
30.2.5.4.2	Dead-End Limit:	50'
30.2.6.2	Max Travel Distance within unit (sprinkled):	125'
30.2.6.3.2	Max Travel Distance from unit door to exit (sprinkled):	200'

30.3.4 Fire detection and alarm system shall comply with this section.

30.3.4.5 Smoke alarms shall be installed:

In every sleeping area

Outside every sleeping area

At least one on each level

30.3.5.2 Sprinkler system NFPA 13R permitted for four or fewer stories.

30.3.6.1.2 Corridor walls (sprinkled): ½ hour

30.3.7.2 Dwelling unit separation (sprinkled): ½ hour

42.1.6 No minimum construction requirements

42.2.4.1 Single means of egress allowed within common path of travel limit.

42.2.5 Dead End Corridor: 100'

Common Path of Travel: 100'

42.2.6 Maximum Travel Distance: 400'

42.2.3.2 Storage area walls and ceilings shall be Class A, Class V or Class C

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bild ARCHITECTURE

LICENSED ARCHITECT
2/24/17
EVAN A. CARROLL
No. 3687
STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND
PORTLAND, ME

REVISIONS
1| 03-15-2017
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3| -
4| -
5| -

PERMIT SET
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EAC
SHEET TITLE
CODE SUMMARY

ISSUE DATE
2/24/17
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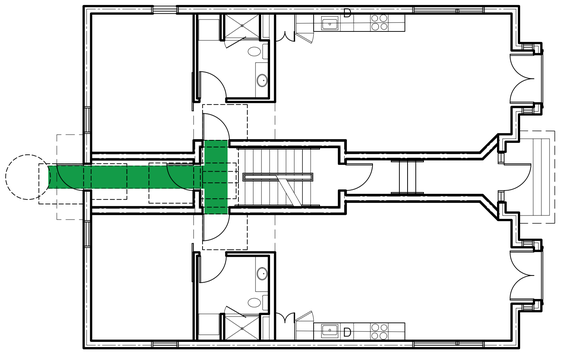
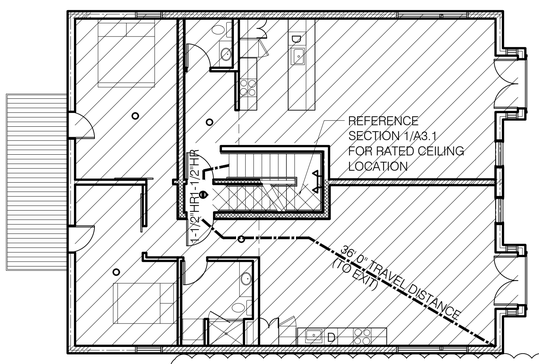


7 FIRST FLOOR ACCESSIBLE ROUTE

0 8'-0" SCALE: 1/8" = 1'-0"

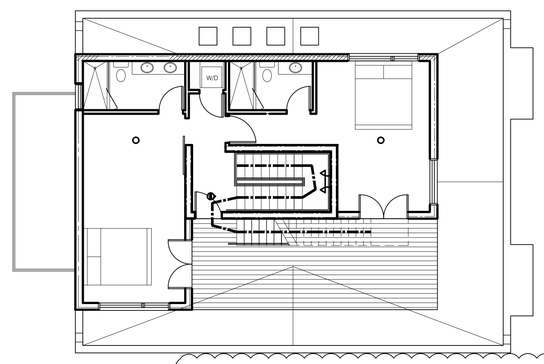
KEY

- EXIT
- COMMON PATH (DISTANCE LABELED ON PATH)
- TRAVEL DISTANCE (DISTANCE LABELED ON PATH)
- SMOKE DETECTOR/ CO2 DETECTOR
- EMERGENCY LIGHTING
- FIRE EXTINGUISHER
- 1-HR RATED WALL ASSEMBLY
- 2-HR RATED WALL ASSEMBLY
- PROVIDE 1-HR RATED CEILING
- PROVIDE 2-HR RATED CEILING



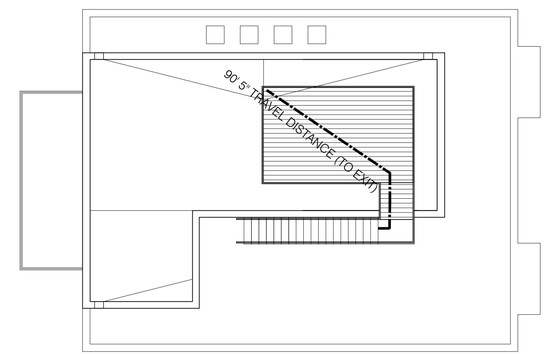
4 THIRD FLOOR

0 8'-0" SCALE: 1/8" = 1'-0"



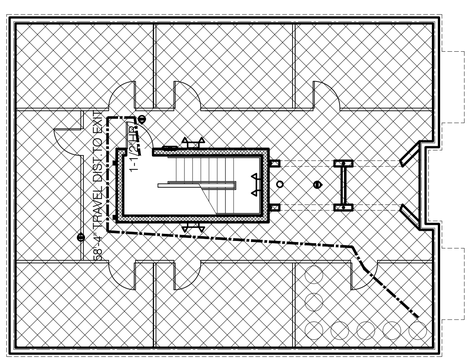
5 FOURTH FLOOR

0 8'-0" SCALE: 1/8" = 1'-0"



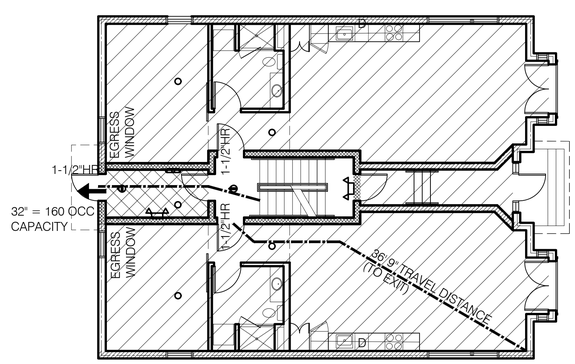
6 ROOF DECK

0 8'-0" SCALE: 1/8" = 1'-0"



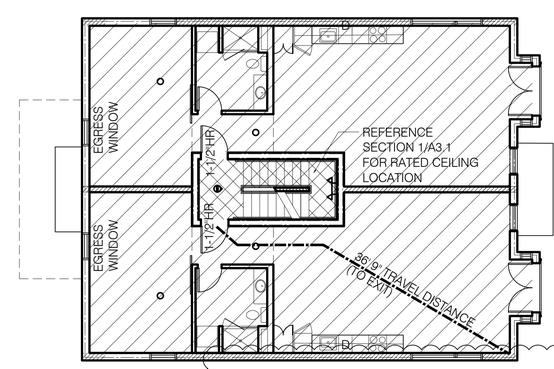
1 BASEMENT

0 8'-0" SCALE: 1/8" = 1'-0"



2 FIRST FLOOR

0 8'-0" SCALE: 1/8" = 1'-0"



3 SECOND FLOOR

0 8'-0" SCALE: 1/8" = 1'-0"

Bild Architecture
PO Box 8235
Portland, ME
04104
207.408.0168
evan@bildarchitecture.com

LICENSED ARCHITECT 2/24/17 EVAN A. CARROLL No. 3687 STATE OF MAINE

PROJECT NO.
16035
PROJECT NAME
7 CUMBERLAND PORTLAND, ME

REVISIONS
1| 03-15-2017
2| -
3| -
4| -
5| -

PERMIT SET
NOT FOR CONSTRUCTION

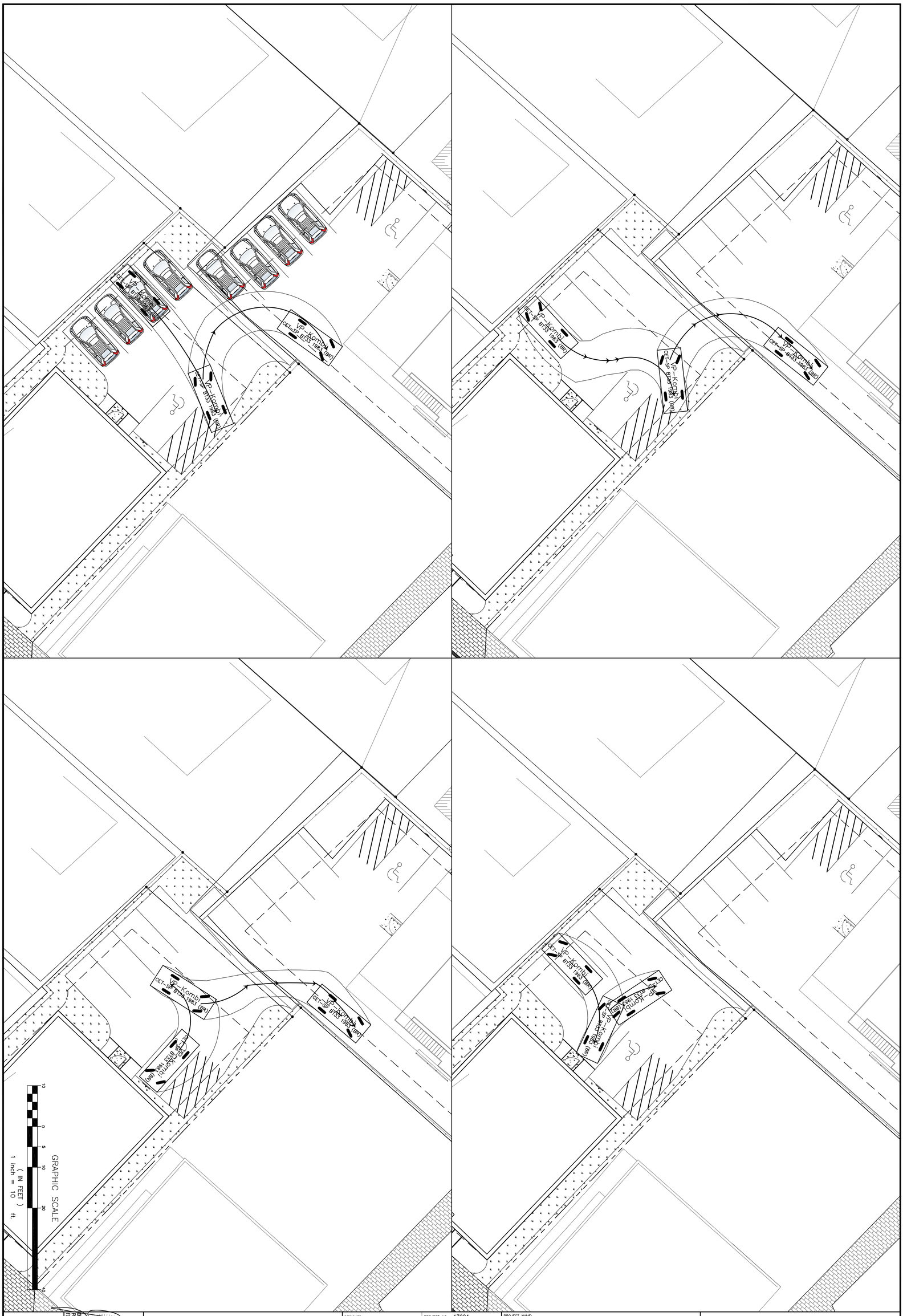
LIFE SAFTEY

DRAWN BY **EAC**
SHEET TITLE

ISSUE DATE **2/24/17**
SHEET SCALE **1/8" = 1'**

G

104



SHEET 1 OF 1

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STATE OF MAINE
RICHARD J. DUGAS
No. 6400
LICENSED
PROFESSIONAL ENGINEER

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P.O. Box 46 30 Lower Detroit Road
Plymouth, Maine 04969
Tel: (207) 257-2071 Fax: (207) 257-2130
info@plymouthengineering.com
www.plymouthengineering.com

DESIGNED:	PROJECT NO. 17004
DRAWN:	DRAWING NO.
CHECKED:	FIELDBOOK:
APPROVED:	SCALE:
PLAN DATE:	DATE ISSUED:

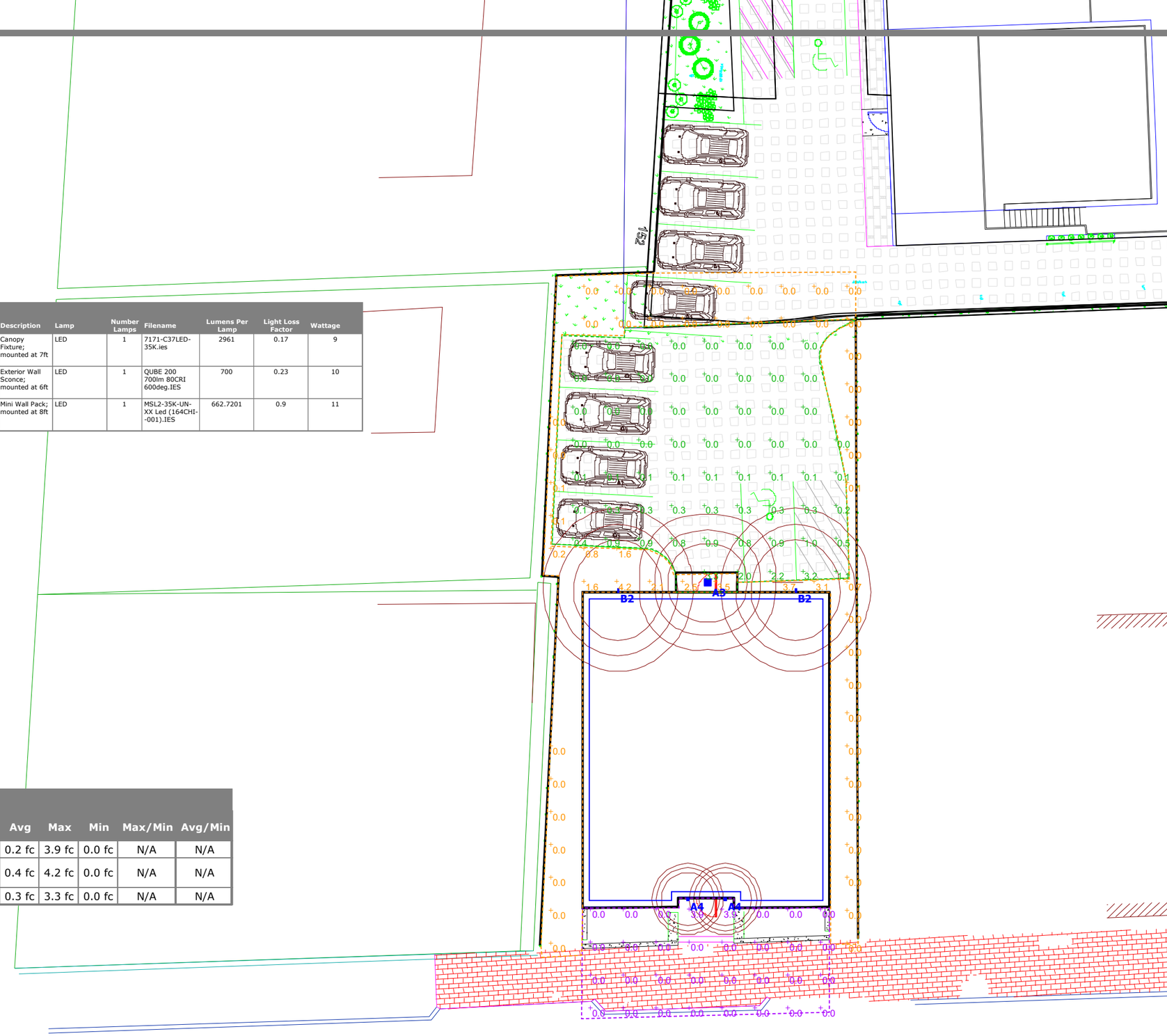
CLIENT & OWNER:
BANNER PROPERTIES, LLC
126 UNDERWOOD DRIVE
FALMOUTH, ME 04105

PROJECT NAME:
7 CUMBERLAND AVE.
PORTLAND MAINE

SHEET NAME:
TURNING TEMPLATES

REVISIONS

NO.	DATE	DESCRIPTION	DRAWN	APP'D.



Plan View
Scale - 1" = 16ft

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A3	1	Brownlee Lighting	7171 8 B6LED 40K ES	Canopy Fixture; mounted at 7ft	LED	1	7171-C37LED-35K.ies	2961	0.17	9
	A4	2	V2 Lighting	Q2SS-DVW-078340-XX	Exterior Wall Sconce; mounted at 6ft	LED	1	QUBE 200 700lm 80CRI 600deg.IES	700	0.23	10
	B2	2	JUNO LIGHTING GROUP, INC	MSL2-35K-UN-BZ	Mini Wall Pack; mounted at 8ft	LED	1	MSL2-35K-UN-XX Led (164CHI--001).IES	662.7201	0.9	11

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Front of Building	+	0.2 fc	3.9 fc	0.0 fc	N/A	N/A
Outside of Parking Lot	+	0.4 fc	4.2 fc	0.0 fc	N/A	N/A
Parking Lot	+	0.3 fc	3.3 fc	0.0 fc	N/A	N/A

7 CUMBERLAND AVE
Portland, ME
Parking Lot Lighting

Designer
Heidi G. Connors
Visible Light, Inc.
24 Stickney Terrace
Suite 6
Hampton, NH 03842

Date
2/20/2017

Scale
Not to Scale

Drawing No.

Summary