1. Agenda 3/21/2018

   Documents:

   AGENDA 3_21_2018.PDF

2. Bike Share Ordinance
   Review a propose bike share ordinance. The Committee may vote to recommend this ordinance to the City Council so public comment will be taken.

   Documents:

   S_TCOMM_BIKESHAREMEMO-ORDINANCE_MAR16-2018DRAFTV2.PDF

3. Bayside Transportation Master Plan
   Review Bayside Transportation Master Plan.

   The Committee may vote to recommend the plan to the Council for adoption so public comment will be taken.

   Documents:

   BAYSIDETRANSPORTMP_DRAFTFINALREPORT-JANUARY2018.PDF
   S_TCOMM_BTMPMEMO_MAR16-2018DRAFT.PDF

4. Climate Action: Resolution To Adopt A Goal To Reduce Greenhouse Gas Emissions Citywide 80% By 2050
   The Committee may vote to recommend this resolution to the City Council so public comment will be taken.

   Documents:

   80X50 RESOLUTION S_T DRAFT.PDF
   80X50 MEMO.PDF

CITY OF PORTLAND, MAINE

Standing Committee Sustainability and Transportation
Councilor Spencer Thibodeau (D2), Chair
Councilor Belinda Ray (D1)
Councilor Brian Batson (D4)

Agenda
March 21, 2018
5:30 PM
Room 24

1. Review and approve minutes from February 15, 2018

2. Sustainability Updates

3. Review Bike Share Ordinance

   The Committee may vote to recommend this ordinance to the City Council for adoption. Public comment will be taken.

4. Review Bayside Transportation Plan

   The Committee may vote to recommend this ordinance to the City Council for adoption. Public comment will be taken.

5. Discuss resolution to adopt a goal to reduce greenhouse gas emissions 80% citywide by 2050

   The Committee may vote to recommend this resolution to the City Council for adoption. Public comment will be taken

6. Other items

TO: Chair Thibodeau and Members of the Sustainability and Transportation Committee

FROM: Bruce Hyman, Transportation Program Manager

DATE: March 16, 2018

SUBJECT: Draft Bike Share Ordinance

CC: Jon Jennings, City Manager
Jeff Levine, Planning and Urban Development Director
Jennifer Thompson, Associate Corporation Counsel
Troy Moon, Sustainability Coordinator

Introduction:

The City of Portland has been looking at the possibility of a bike share system since at least 2012. In 2013, the City received technical assistance from the Environmental Protection Agency and completed a feasibility study that outlined some opportunities and challenges. A non-profit called Portland Bikeshare was created, based on the recommendations of that study, but lacked funding to launch a service. In the past year, the City has received inquiries from several potential bike share operators of various types, including for-profit and non-profit operators during the last several years. These providers may work in conjunction with Portland Bikeshare if feasible.

However, there are no current ordinance provisions defining or governing bike share systems or enabling their regulation. Based on experiences in other cities, there are significant opportunities in bike share in mid-sized cities. However, without a set of rules to govern operations, there is a risk for public safety hazards and costs for City staff. The draft ordinance being presented to the Sustainability and Transportation Committee is intended to fill that void in the city ordinance and delegate the development of bike share regulations to the City Manager.

Draft Ordinance:

The draft ordinance is based on a review of ordinances and other materials from other municipalities and bike share operators and organizations from around the country.

Section 25-27(8) of the draft ordinance proposes a Street Occupancy Permit fee structure governing both Station-less and Station-based/Hybrid Bike Share Systems. It attempts to be neutral in terms of the overall amount of the fee to be paid between the two types of systems of similar size. Station-less system permit fees are proposed to be solely based on the number of bicycles deployed while the Station-based/Hybrid system (using docks) permit fees are based on combination of the number of bikes and the number of docks deployed.

Section 25-31 of the draft ordinance in its elements:

- defines Bike Sharing Systems
- proposes delegating the authority to develop regulations of the systems to the City Manager including setting insurance and bonding requirements, specifying where parking of bicycles as part of a system is allowed and not allowed and other provisions in sub-section (c) "to ensure the safe and effective operation of such a system"
- allows the City Manager to set a cap on the number of systems operating within the city
- establishes that operating a system without a permit is a violation of city ordinance.

Potential Regulatory Framework:

A similar review of bike share system regulations from other municipalities and guidance from the bike share industry/organizations has many common elements. These elements include:

- Safety/Equipment – what minimum national safety standards with which the bicycles need to conform including front and rear lights
- Parking – where parking of station-less and station-based system bicycles are allowed focusing on maintaining adequate sidewalk clearance for bicycles parked there, how users will be educated on proper parking and enforcement mechanisms
- Fleet Size and Service Area – minimum and maximum fleet size and where the system is allowed to operate within the city
- Signage/Advertising/Contact Information – requirements for company contact information on each bicycle and limitations on advertising
- Maintenance/Operations – sets requirements for local responsiveness for customer service requests/complaints, removal of bicycles that are improperly located/parked and maintenance of bicycles.
- Insurance/Bonding/Indemnity – establishes insurance and bonding minimum requirements and requires the operator indemnify the city and employees
- Data Sharing/Reporting – sets requirements for the type and frequency of data sharing and surveying/reporting from each operator. (Adapted from NABSA 'Dockless Bikeshare Regulation Preliminary Guidance, Version 1', January 2018)

The development of the regulations by the City Manager would follow soon after the adoption of the Bike Share ordinance by the City Council. The hope is that, should there be support for the concept, timing may allow for a pilot program this summer.

Sec. 25-27. Fees and fines.

(a) The following fees are hereby established for the issuance of a revocable street and sidewalk occupancy permit:

(1) Objects other than portable signs, including but not limited to tables, chairs, barricades and bollards, eighty-eight dollars ($88.00) for one (1) fiscal year or any portion thereof;

(2) Portable signs, twenty-five dollars ($25.00) plus twenty cents ($0.20) per square foot of signage. Square footage is calculated pursuant to section 14-369(b) of the land use ordinance. Permits remain valid until there is a change:

a. In the sign dimensions; or

b. In the use, lessee or ownership of the business causing a change in the business name, design or dimensions.

(3) Vehicles, equipment, or construction materials, fifteen dollars ($15.00) per day or any portion thereof;

(4) Use of city property (including but not limited to festivals, events, promotions, demonstrations, parades, marches, road races, walkathons, fundraisers, press conferences, rallies, protests, sampling, poll taking, banners and public displays), fee as provided by annual order of the city council;

(5) Use of streets, ways or public places by street goods vendors as defined in Section 19-16 for purposes of vending, thirty-six dollars ($36.00) per day or any portion thereof;

(6) Permit to Portland’s Downtown District or similar organization/business to hold events on not less than twenty-four (24) hours' notice to the city manager, within area or areas designated in permit, one hundred dollars ($100.00) per fiscal year or any portion thereof;

(7) Location of dumpster on city-owned property, except as part of a street festival or other special event declared by the city council, two hundred twenty-five dollars ($225.00) per fiscal year or any portion thereof.

(8) Operation of a bike sharing system (as defined in 25-31 below,) according to the following fee schedule:

Station-less Systems (or Hybrid systems not meeting 50% docking point threshold):
Initial Annual Permit Fee, per operator per calendar year:

Less than 250 bicycles	$1500
251 to 500 bicycles	$2500
More than 500 bicycles	$ 500 per every additional 250 bicycles or fraction thereof

Annual Renewal Fee (Station-less Systems), per operator per calendar year:

Less than 250 bicycles	$1000
251 to 500 bicycles	$2000
More than 500 bicycles	$ 250 per every additional 250 bicycles or fraction thereof

Station-based/Hybrid Systems (Station-based systems must provide at least 50% as many docking points as bikes):
Initial Annual Permit Fee, per operator per calendar year:

Less than 250 bicycles	$ 500
251 to 500 bicycles	$1000
More than 500 bicycles	$ 250 per every additional 250 bicycles or fraction thereof

Plus $50 per approved docking station.

Annual Renewal Fee, per operator per calendar year:

Less than 250 bicycles	$ 500
251 to 500 bicycles	$1000
More than 500 bicycles	$ 250 per every additional 250 bicycles or fraction thereof

Plus $25 per approved docking station.

Within one year following the issuance of the first permit for a bike sharing system, the fee schedule above is to be re-assessed.

Should the number of bicycles be increased during any calendar year requiring additional fees, the difference in permit fees paid to date will be payable and a revised permit application is to be filed before their deployment. A reduction in bicycles in any one calendar year will not trigger a refund of permit fees paid.

25-31 Bike Sharing Systems

(a) A “bike sharing system” is defined as a system of bicycles, electric bicycles, helmets, or similar bike-share-related merchandise that is made available for rent for general public use, generally for short periods of time, and may include docks

or stations for storing bicycles when not in use.

(b) Bike sharing systems require annual revocable street occupancy permits pursuant to this section and section 25-27(8), above.

(c) The City Manager or her/his designee is hereby authorized to develop regulations to further delineate reasonable rules for operation of a bike sharing system, including limits on the number of bikes (including per operator), where bikes and other bike-share-related merchandise may be stored or parked on public ways, requirements for insurance, indemnity and bonding, the conduct and responsiveness of bike share operators, requirements for data sharing and reporting, restrictions on advertising and signage, and other relevant factors to ensure safe and effective operation of such a system.

(d) The City Manager may set a cap on the number of bike sharing systems that may operate in the city at one time. If such a limit is set, the City shall determine operators through a competitive bidding process.

(e) In addition to the street occupancy permit fees outlined in 25-27 above, in the event that any installation, reinstallation, relocation, repair or maintenance of any existing or future improvements owned by, constructed by or on behalf of the City is made costlier by virtue of a bike sharing system, the operator of that bike sharing system shall pay to the City an amount equal to such additional cost as reasonably determined by the City Manager or the City Manager's duly authorized representatives.

(f) It shall be considered a violation of the City Code to park, leave standing, or leave unattended a bicycle that is part of a bike sharing system, as defined in Sect 25-31(a), on any sidewalk, street, or public right-of-way except as authorized under a valid street occupancy permit. Bicycles parked, left standing, or left unattended constitute a public nuisance subject to abatement and removal by duly designated authorities by the City Manager. Failure to obtain a street occupancy permit as required by this section, parking or leaving unattended a bicycle in an unauthorized location, and any other violations of this Section or the Rules and Regulations governing Bike Sharing systems shall be subject to the fines outlined in Section 1-15 of the City Code.

prepared for:

PACTS and City of Portland

DRAFT

BAYSIDE TRANSPORTATION MASTER PLAN

January 2018

T·Y·LIN INTERNATIONAL

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1.1 INTRODUCTION

The Bayside area has been a major focus area for redevelopment plans in the Portland peninsula, and planning efforts have been part of reshaping this area. Beginning with A New Vision for Bayside in 2000, implementation of the Bayside Trail, Chestnut Street Extension, and continuing with the re-extension of Somerset Street, with potential changes to Franklin Street. Land uses in Bayside can be described as mixed-use, and current dominant uses include regional scale retail (grocery), a gym, banking, automotive services, regional scale medical offices, and mid-rise residential. The City's Public Works offices and yards are also located in the study area.

The study area (**Figure 1-2**) also includes residential neighborhoods. Two such distinct areas are the neighborhoods to the north of and along Cumberland Avenue, and along and to the west of Washington Avenue.

The **Bayside Transportation Master Plan** is designed to be an integrated multi-modal and land use initiative, examining pedestrian, bicycle, vehicular and transit access; connectivity, land use and urban form, guided by the City's and MaineDOT's Complete Streets Policy (**Figure 1-1**).

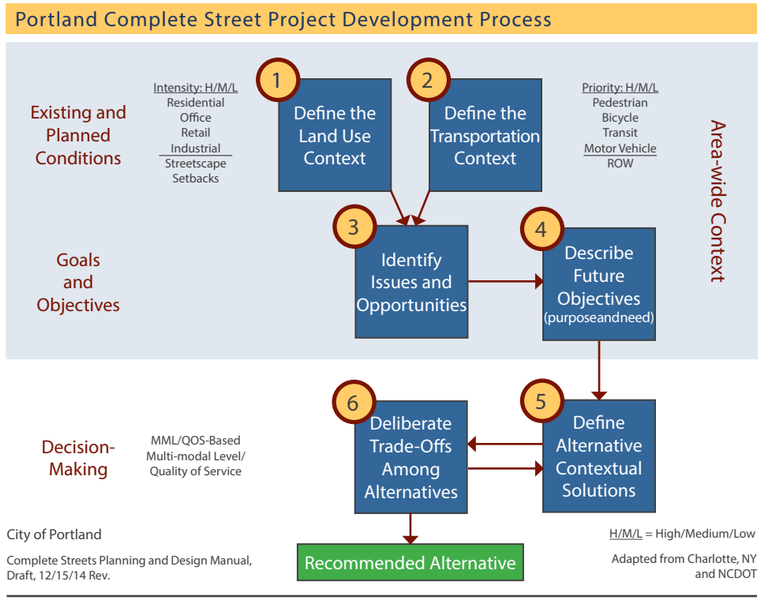


Figure 1-1: Portland Complete Streets Project Process

The Bayside Neighborhood within Portland has become one of the most dynamic areas of the City with a variety of near- and long-term activities that prompted the City and PACTS to pursue a master plan to inform transportation initiatives. With so much change happening, a comprehensive review is desirable to ensure a sustainable transportation system is planned and supports land use and economic development goals.

In many respects, the area has not been reviewed recently in a comprehensive fashion, and thus lacks an updated vision where the transportation system can serve existing and future demands and needs of all users—and meet the City's Complete Streets Policy. A comprehensive system is also important from a development and MaineDOT review perspective, particularly for the streets that interface with I-295.

Private development in the area is significant, and in many respects, the planning review process would benefit greatly from an adopted transportation master plan. An adopted plan would allow the City to better partner with private developers to implement the vision. The City is in the process of designing a Stormwater Storage Conduit within Marginal Way. This facility will address stormwater needs, but given its location, the City intends, as practicable, to leverage its construction to implement street improvements.

1.2 STUDY AREA/FOCUS AREA

The Master Plan area is a large and diverse area bounded by I-295 to the north, Washington Avenue to the east, Cumberland Avenue to the south, and Forest Avenue to the west (see **Figure 1-2** on the following page). The Master Plan will provide an overall comprehensive transportation vision for the Bayside Neighborhood, in addition to providing more detailed recommendations for the following Focus Areas:

1. **Oxford Street/Portland Street** – The City has generally identified a need for multi-modal and streetscape improvements to Portland Street between Forest Avenue and Preble Street (including Oxford Street between Alder Street and Preble Street). An issue that needs to be addressed is the lack of east-west connectivity within Bayside between Franklin Street and Alder Street. Oxford Street will be assessed for the potential benefits of a conversion to two-way for all, or a portion of its length, from Alder Street to Pearl Street.
2. **Pearl Street Extension** – The City has been envisioning the extension of Pearl Street to Marginal Way, and thus creating a full cross-peninsula north-south street. The recently approved Midtown project is incorporating a street/driveway to the Bayside Trail that can potentially be adapted for a full connection to Marginal Way in the future. The key issue for this task is understanding what alignment is required to intersect Marginal Way, and potential property impacts, and how this new connection interacts with traffic signals at Franklin Street (existing) and Chestnut Street (near-term).
3. **Lancaster Street** – Lancaster Street in the Bayside Neighborhood may prove beneficial from a re-connected street grid and connectivity perspective. Key options to be reviewed include:
   - provide a pedestrian connection across Franklin Street;
   - provide a two-way roadway through Whole Foods; and
   - the roadway configuration between Elm Street and Brattle Street.
4. **Preble and Elm Streets** – Similar to other streets in the City and in the Bayside Neighborhood, the study will investigate Preble and Elm Streets' configuration, connectivity, integration with Marginal Way, Somerset Street, and the Midtown project, and improving bicycle and pedestrian facilities.
5. **Marginal Way** – Approximately 10 years ago, the City established a vision for Marginal Way and incrementally is being implemented. Given changes in the area and within the City, this study will review the principles of the Marginal Way Master Plan, and extend the Plan to the Portland Water District treatment plant. The Plan needs to address the inconsistent roadway configuration, safety deficiencies, poor access management, incomplete bicycle and pedestrian facilities, and streetscape needs.
6. **Transit Access and Service** – For the Bayside Neighborhood to be truly multi-modal, a healthy transit system is necessary. Mixed-use development with a significant residential housing component will trigger the need to provide transportation options for residents. For many of the current and future residents, car ownership is not an assumed choice, and having quality transit transportation options will be important for the success for developments, and transportation balance.

Figure 1-2: Key Focus Area Map

1.3 OTHER STUDIES AND PROJECTS

The intent of the Master Plan is generally to integrate prior planning and development initiatives with future assumptions. This will include City projects and development activity where site plans have been approved. **Figure 1-3** notes projects or initiatives that were considered in the plan. Details on the Transportation and Land Use context elements are discussed in Section 2.

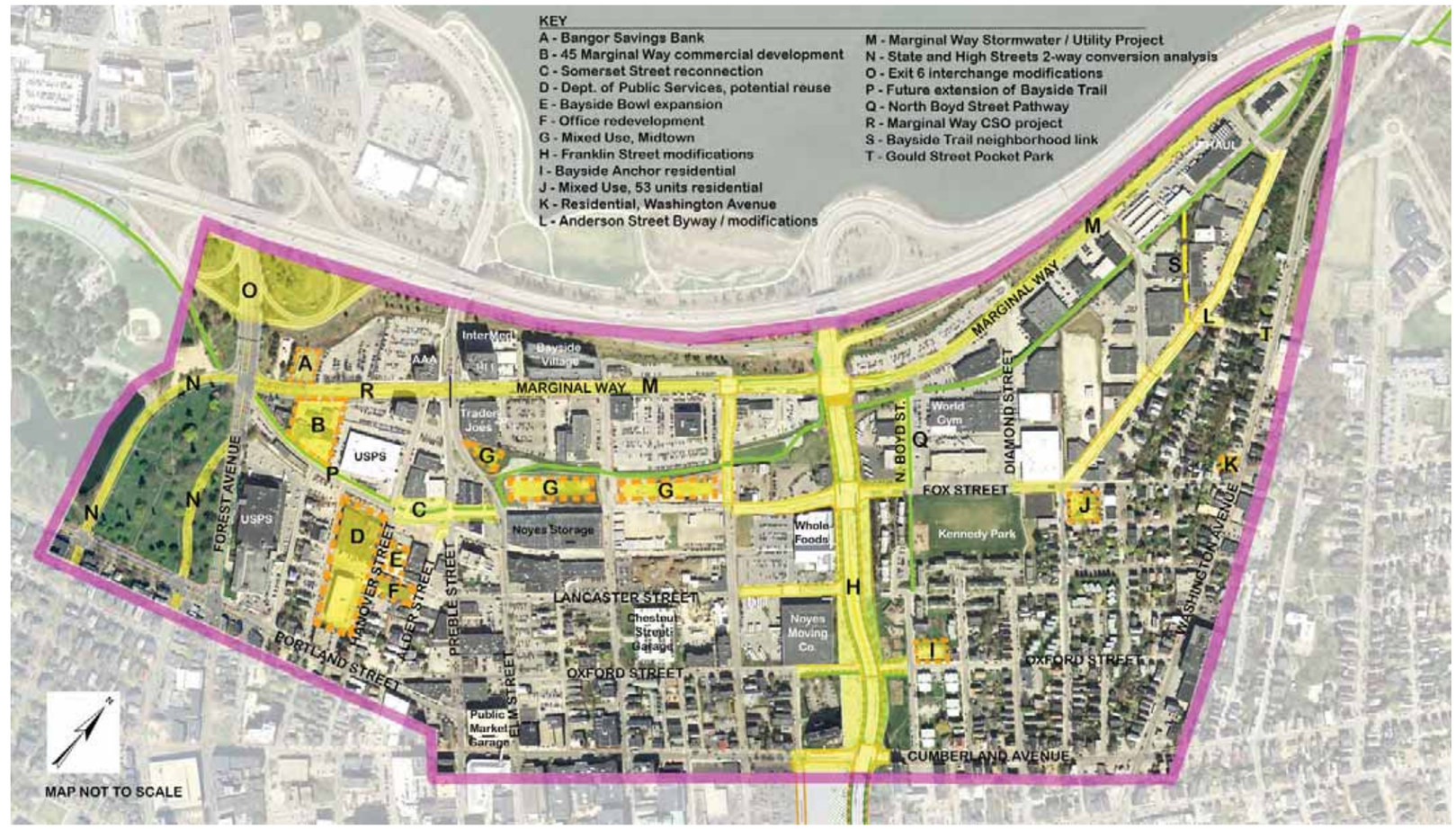


Figure 1-3: Existing Projects Map

2.0 DEFINE EXISTING AND PLANNED LAND USE CONTEXT

2.1 Existing Land Use Context

2.1.1 Introduction

Developing a baseline understanding of the existing land use / urban design context allows for an informed multi-modal street design process using Complete Streets principles. By reviewing streets, land use, and urban form simultaneously, concerns and opportunities regarding the future of the city are considered holistically rather than in isolation. Ultimately, this approach should result in places where policy, zoning, economic development, urban character, and mobility are aligned to either guide neighborhoods through change or stabilize the character of established neighborhoods.

There are often demands working at cross-purposes in regards to the form, function, and character of a neighborhood. As planners and designers, every contingency cannot be anticipated, however, it is possible to strive to remain aware of the large and small forces influencing urban life, and embrace bottom up and top down efforts to make the city a better place to live.

2.1.2 Zoning and Design Standards

The 250-acre +/- study area includes ten different zoning districts as shown on **Figure 2-1**. In general, these zones reflect the underlying existing uses. This is not an uncommon pattern for used based zoning. The one exception is the B7 Zone, which was created to implement The New Vision for Bayside adopted in 2000. While there are always existing uses and urban design characteristics that do not reflect the intent of zone, the B7 Zone has guided development meeting the goals for the area. There has been a lag time for vacant and underutilized in achieving the B7 vision. This lag time, however, should be considered positive, because the City is guiding growth with zoning and design standards, creating streets and buildings that reflect the long-term vision of the community.

It should be noted that in a streets-based approach to urban design ¬– where the street is the framework for economic development, defining / supporting land uses, creating a sense of proportional scale with the "outdoor room"— zoning in the study area is not always the same on both sides of the street. The study area includes a range of locations where a zone is the same on both sides of the street – even if only for a lot deep – such as Portland Street between Forest Avenue and Alder Street. In other cases, the centerline of the street is the edge between two zones, such as Lancaster Street and Oxford Street between Chestnut Street and Wilmot Street.

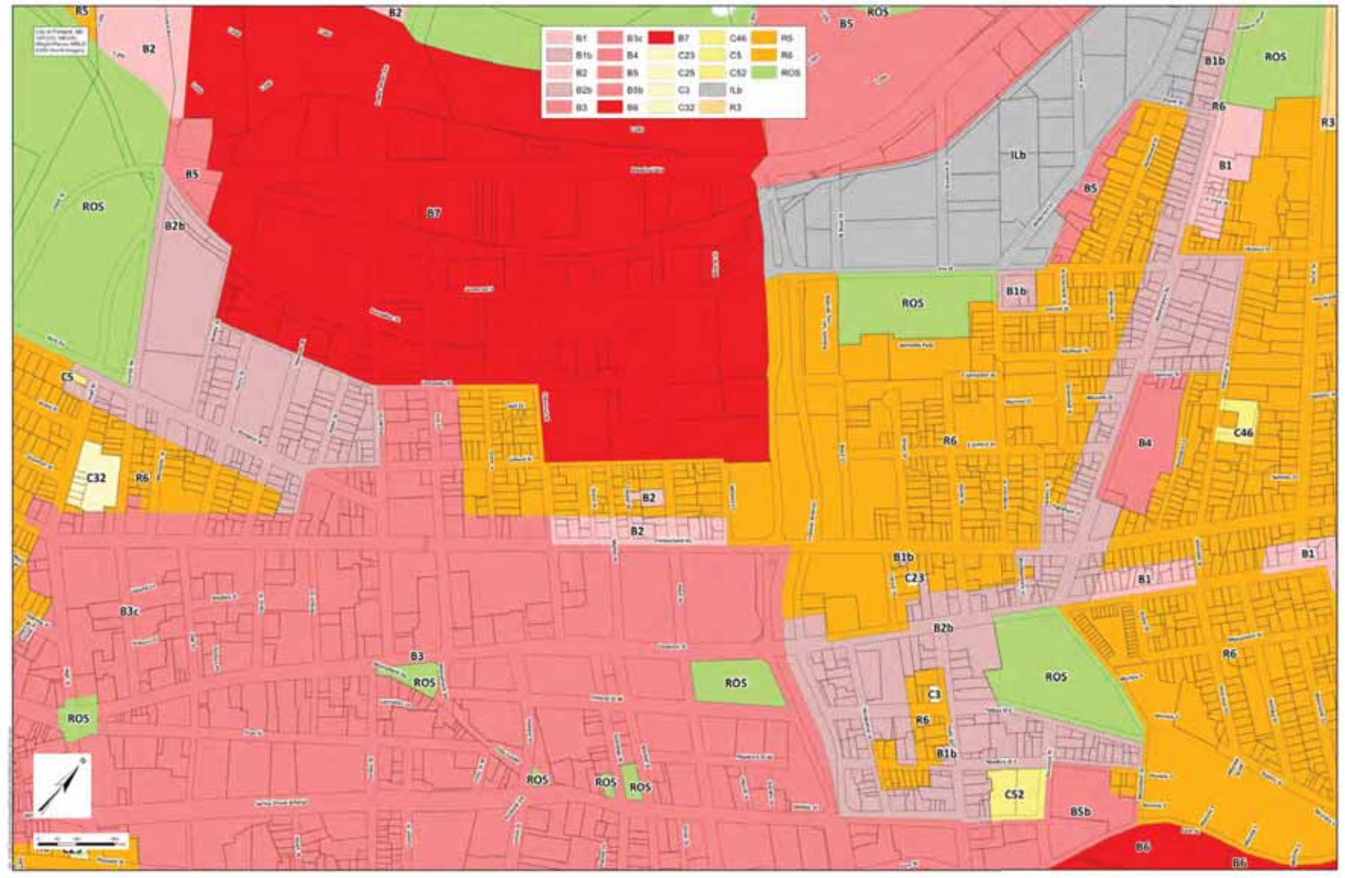


Figure 2-1: Existing Study Area Zoning (Source: City of Portland)

However, as noted in Section 14-50 Zone Boundaries, when uncertain, the City has a standard policy of establishing zone lines at the centerline of streets.

When considering urban design in relation to a Complete Streets and Form Based Codes approach, this policy may lead to streets that are incomplete and formless due to the non-mirrored nature of the outdoor room and allowable uses. This does not mean that a vibrant street cannot be achieved, but the policy, in general may be at cross-purposes to a holistic approach to planning and design. Clearly there are exceptions to this philosophy, such as the portion of

Forest Avenue where the civic presence and scale of the Post Office frames the open space of Deering Oaks Park on the opposite side of the street.

Following is summary of the study area zoning and key design standards. Note that the intent of this summary is to convey the general desired character of each zone and the Zoning Ordinance includes more specific standards than detailed here.

B1b Neighborhood Business Zone – *Washington Avenue*

Purpose

- The purpose of the B1b neighborhood business zone is to provide limited areas for the location of small-scale commercial establishments intended to serve a local market. As a result, uses shall be complementary, quiet, and generally do not disturb the comfort and enjoyment of the adjoining neighborhood environment. Uses shall be designed for the pedestrian scale and will provide convenient access for nearby residents and workers to walk to purchase goods and services. Buildings and uses shall be designed with attractive storefronts or similar features, with windows and doors convenient to a public sidewalk. Building additions are encouraged but not required to meet the maximum setbacks of 14- 165(c)(3). This zone shall encourage mixed-use buildings, such as commercial first floor with residential uses above, or combined retail/office uses in a multi-story structure. The zone also provides the opportunity for mixed-use and high-residential density in on-peninsula locations.
- Suitable locations for this zone may include street intersections and arterial streets with existing or proposed traditional neighborhood retail and service uses.

Key Street Relationship/Urban Design Standards

See **Table 2-1** at the end of this section for a general summary of dimensional standards for the districts in the Study Area.

- There shall be no off street parking in the front yard between the street line and the required maximum setback line.

B2 Community Business Zone – *Cumberland Avenue frontage between Wilmot Street and Chestnut Street*

Purpose

- To provide appropriate locations for the development and operation of community centers offering a mixture of commercial uses, housing, and services serving the adjoining neighborhoods and the larger community.
- The variety, sites and intensity of the permitted commercial uses in the B-2 zone are intended to be greater than those permitted in the B-1 neighborhood business zone.
- The B-2 zone will provide a broad range of goods and services and general businesses with a mixture of large and small buildings, such as grocery stores, shops, and services located in major shopping centers, and along arterial streets. Such establishments should be readily accessible by automobile, pedestrians, and bicycles. Development in the B-2 zone should relate to the surrounding neighborhoods by design, orientation, and circulation patterns.

Key Street Relationship/Urban Design Standards

See **Table 2-1** at the end of this section for a general summary of dimensional standards for the districts in the Study Area.

- Drive-throughs associated with a permitted use in the B-2 zone provided that such do not include drive-throughs on any lot adjacent to any residential use or zone. For purposes of this section only, “adjacent to” shall include uses across a street if within 100 feet of the subject lot boundary.
- Building and site design – The exterior design of the structures, including architectural style, facade materials, roof pitch, building form, established setbacks and height, shall be of a commercial, rather than industrial character.
- A building will be determined to have an active street frontage upon meeting the following guidelines to the greatest extent practicable as determined by the Planning Board or Planning Authority – the primary building façade shall be within ten feet of the front street line; there shall be no parking on the lot within 35 feet of the front street line; no more than 25% of the first floor primary façade shall consist of access to garages, service entrances, storage or mechanicals, and the remaining minimum 75% shall have an average depth of a minimum of 20 feet for residential or commercial uses; all primary ground floor entries to multi-family buildings must orient to street, not to interior blocks or parking lots.

B2b Community Business Zone – *Forest Avenue to Preble Street and Lancaster Street to Cumberland Avenue*

Purpose

- The B-2b zone is intended to provide neighborhood and community retail, and business and service establishments that are oriented to and built close to the street. The B-2b zone is appropriate in areas where a more compact urban development pattern exists, such as on-peninsula or in areas off-peninsula where a neighborhood compatible commercial district is established which exhibits a pedestrian scale and character. Such locations may include the peninsula and other arterials and intersections with an existing urban or neighborhood oriented building pattern.

Key Street Relationship/Urban Design Standards

See **Table 2-1** at the end of this section for a general summary of dimensional standards for the districts in the Study Area. In general, refer to standards summarized above for the B2 Zone.

B3 Downtown Business Zone – *Lancaster Street to Cumberland Avenue and Elm Street to Preble Street*

Purpose

- Maintain and enhance the role of the downtown, as the business and commercial center of the region;
- Enhance and promote the orderly expansion of retail and service businesses downtown, satisfying the related needs of the city’s residents, and working and visitor populations;
- Encourage increased housing opportunity downtown for a diverse residential population;
- Enhance the pedestrian environment through the encouragement of intensive mixed-use activities, through the enhancement and maintenance of public and private open space, and through the enlivenment and increased attractiveness of the street environment;
- Encourage excellence in urban design;
- Preserve and capitalize on the unique character and historic fabric of the downtown through the encouragement of reuse of significant existing structures;
- Provide opportunity for an enhanced presence and integration of the arts and cultural activities downtown;

- Reinforce the role of the downtown as a meeting place for community residents and visitors alike from all walks of life, and all socio-economic groups;
- Provide adequate parking and transportation facilities, which promote accessibility, enhance and encourage development opportunity, and enhance and protect the pedestrian environment;
- Provide for the relocation of residents who are displaced by development.

Key Street Relationship/Urban Design Standards

See **Table 2-1** at the end of this section for a general summary of dimensional standards for the districts in the Study Area.

- All development as defined in article V, all building and site alterations, and all provision of landscaping or other pedestrian amenities shall be consistent with the Downtown Urban Design Guidelines.

B4 Commercial Corridor Zone – *Nissen Building and adjacent warehouse/food spaces along eastern side of Washington Avenue*

Purpose

- To provide appropriate locations in the city for the development and operation of businesses catering primarily to highway-oriented trade along major arterials. (Uses which have market areas which are primarily dependent on the regional highway network or serve a regional or larger market); or
- To provide appropriate locations for large-scale commercial uses and commercial uses that require larger land areas to accommodate their operations.

Note: This zone, in general, applies to the Nissen Building on Washington Avenue.

B5 Urban Commercial Mixed Use – *Marginal Way east of Franklin Street and the east side of the Marginal Way/Forest Avenue intersection*

Purpose

- The purpose of the B-5 and B-5b zones is to provide zones in areas of the peninsula near the central business district where a mixture of uses, including marine, industrial, commercial, and residential, is encouraged. Larger, underdeveloped lots characterize the B-5 and B-5b zones with potential for denser, clustered, urban mixed-use development, and more efficient reuse of existing land and buildings.
- It is anticipated that such denser, mixed uses would rely on a shared infrastructure system, including service alleys, parking lots, public transportation facilities, stormwater management, and driveways.

Key Street Relationship/Urban Design Standards

See **Table 2-1** at the end of this section for a general summary of dimensional standards for the districts in the Study Area.

B7 Urban Commercial Mixed Use – *Marginal Way to Lancaster Street and Franklin Street to Brattle Street*

Purpose

- The purpose of the B-7 mixed development district zone is to establish a zoning district for urban areas in which the city has adopted master plans for redevelopment. Certain districts, including but not limited to Bayside, lie at the perimeter of the established downtown and contain significant redevelopment opportunities. The B-7 zone encourages these districts to acquire a distinctly urban form through dense development featuring a mix of uses such as housing, retail, offices, research and development, and artisan studios, emphasizing a quality pedestrian experience, promoting public transit, and demonstrating exemplary urban design. Utilization of transportation, other than the automobile, is strongly encouraged. The zone promotes a wide range of uses in high quality structures and public open spaces to achieve twenty-four (24) hour urban vitality, and shared parking infrastructure.
- The following regulatory framework is intended to promote the mixed-use development pattern envisioned on Portland's peninsula. District-specific design standards and overlay maps can be found at the city planning and development office.
- Specific Mixed Use Urban Zone Design Principles and Standards were adopted in 2008, in addition to the standards noted below from the Zoning Ordinance. The introduction to the Design Principles and Standards includes the following purpose statement:
- The B-7 Design Principles and Standards are intended to guide Bayside neighborhood residents, developers, designers, City officials and staff, and others in the creation of a vibrant, aesthetic and sustainable neighborhood which is dense, mixed-use, and pedestrian-friendly. The B-7 Design Standards support excellence in urban and architectural design which contributes to a strong sense of place, encourages 24-hour activity, promotes multi-modal transportation, provides public spaces, and protects scenic views.

The B-7 Design Standards meet the following goals:

- Support and reinforce the goals of A New Vision for Bayside;
- Accentuate Bayside as a gateway to the city by highlighting major corridors and corners;
- Preserve the neighborhood building scale that is typical of the small blocks of Portland; and
- Extend the existing street grid and create mid-block permeability, in order to provide opportunities for multi-modal access, service alleys, public spaces, view corridors, and access to light and air. Design pedestrian-oriented streets with significant landscaping.
- Preserve view corridors toward Back Cove and the White Mountains, as well as views looking toward the spine of the Portland peninsula, as shown in the Bayside Height Map;
- Create dense, mixed-use, multi-modal development that is adjacent to infrastructure, highways, jobs, and educational opportunities;
- Create spaces of various scales that are attractive to creative industries, such as art, architecture, design, film, media, music, performing arts, and publishing and software design; and
- Allow building heights that create space for a critical mass of people needed to make a new urban neighborhood successful. Ensure that development is human in scale at the pedestrian level; and

- Encourage architecture, which expresses the aesthetic of the time in which it was built, that respects local urban design patterns, and compatible with adjacent traditional residential neighborhoods. The Portland Peninsula has been Maine's most urban area for several centuries and new architectural styles and materials are often introduced here. It is expected that this will continue to be the case as sites in the B-7 Zone are redeveloped.
- Incorporate "green" design, smart growth policies, and sustainable technology into the urban design, site plan design, and architectural designs of the Bayside neighborhood; and
- Create a variety of mixed-use commercial opportunities that serve the neighborhood, city and region. Ensure that commercial development, which is regional in scale, is compatible in design and massing to the adjacent traditional residential neighborhoods; and
- Provide a hierarchy of green spaces on public and private land with parks, playgrounds, plazas and trails. Ensure that the streetscape design enhances the pedestrian experience;
- Use authentic building materials and construction methods that are of the highest quality and appropriate to an urban environment and expected to last at least 50 years; and
- Adaptively reuse existing buildings.

One of the key planning principles for the B7 Zone is Access and Circulation. This street-based approach is integral to realizing the Complete Streets/ multi-modal potential for Bayside. There are specific standards for the Access and Circulation, including:

- Streets and alleys;
- Street connectivity;
- Mid-block permeability sidewalks and crosswalks Green Streets
- Multi-modality;
- Continuity of street level uses, traffic-calming, streetscape, design encroachments; and lighting.

Key Street Relationship/Urban Design Standards

It should be a clear goal of the B7 standards to reduce the amount of surface parking in Bayside. The following standard seems arbitrary and blurs the line between grandfathering and setting forth strong policy to guide growth.

Project-by-project redevelopment is the best opportunity to create a walkable urban environment while increasing the tax base. If surface parking is associated as a highest and best use, the economics of developing in Bayside will maintain a suburban typology for years to come.

- Surface parking existing as of March 9, 2005, and in continuous existence thereafter, including the reorganization of parking spaces and maneuvering aisles. This section shall apply to surface parking accessory to a principle use and a parking lot as a principle use. Existing surface parking that does not comply with the standards of sec. 14- 299 (f) may continue, provided that any modifications to the site layout, development constituting a site plan, or building renovations exceeding a value of thirty (30) percent of the assessed value of the building on file at the City of Portland Assessor's Office, shall require the parking to be upgraded to meet the standards of sec. 14-299 (f) to the extent practicable.

Again, the following standard exacerbates suburban type property values in what is envisioned as a high value urban location.

- Surface parking created after March 9, 2005, provided that the spaces and newly created maneuvering aisles are thirty-five (35) feet or greater from a street and further that the standards below (a to c) are also met. This section shall apply to surface parking accessory to a principal use or a parking lot as principle use. The thirty-five (35) foot setback need not apply in the case of a property in which eighty (80%) of the property frontage has a building within ten (10) feet of the property frontage and or a driveway located perpendicular to the site. The parking area shall meet the standards of sec. 14- 299 (f).

The following standards are clearer in the intent to promote structured and on-street parking while maximizing the value of parcels with development potential:

- The first floor of any parking structure shall contain one or more permitted uses (not conditional uses) found in §14-295 along all primary street frontages (excluding frontage dedicated to entrances, lobbies, and stair towers). Such first floor space shall be provided with a minimum of nine (9) foot floor-to-ceiling clearance height and a minimum twenty-five (25) foot depth (measured from the exterior building wall); or
- The parking structures shall be set back at least thirty-five (35) feet from the primary street right-of-way. The land located between the parking structure and the street right-of-way may not be occupied by surface parking, and shall be designated for future use development. Such land between the garage and the street shall not by lease or other prohibition be encumbered against future development. The land shall be provided with all stubbed utilities and other provisions needed to accommodate further development; or
- The parking structures shall be designed with a façade (to a height of the first two floors) that enhances the pedestrian experience as described in the City of Portland B-7 Bayside design standards.
- Buildings in the bayside gateway urban height district a greater than one-hundred twenty-five (125) feet but no more than one-hundred sixty-five (165) feet in height with conditions.

See **Figure 2-2** for Bayside Height Overlap Map on the following page.

- Portions of such buildings higher than one hundred twenty-five (125) feet shall be stepped back at upper levels to provide light and air to adjacent streets, trails, and open spaces, with a ratio of no less than at least to the extent that the ratio of building height to width of adjacent streets, trails and open spaces is equivalent to 1.5 to 1;
- Such buildings provide publicly accessible and usable open space, meeting the B-7 urban design standards, of at least ten (10) percent of the building lot area; and
- If located on lots including or adjacent to planned or proposed street or pedestrian way connections, land dedication to such street or connection shall be credited toward the ten (10) percent open space requirement. Buildings over one hundred and twenty-five (125) feet in height that are being reviewed as separate phases of a Master Development plan shall be entitled to meet the ten (10%) percent open space requirement of Section 14-296(a)(5)(c) in aggregate for all such buildings over one hundred and twenty-five (125) feet in height, provided that the open space shall not fall below ten (10%) percent at any built phase or combination of built phases; and
- Such development shall comply with all other zoning requirement and B-7 urban design standards as required by this article.

- Lots having frontage on streets in which the curve of the street frontage precludes a rectangular shaped building along the street line, for purposes of calculating the setback, the average setback of the building from the street line may be used, but in no All buildings shall have a minimum of one (1) public pedestrian entrance facing the street frontage of the lot. Such building entrances shall meet the average setback along the length of the building edge and not exceed an average setback of fifteen (15) feet nor shall the maximum setback exceed twenty (20) feet. The increased setback shall not be used for surface parking, vehicular loading or vehicular circulation. Such building entrances shall also be reviewed under the B-7 bayside design standards.

ILb Industrial Zone – *Bayside Trail South to Fox Street and East to Anderson Street*

Purpose

- The I-L zone is located adjacent to residential neighborhoods, business uses, and other industrial uses where the low intensity nature of the uses, as well as their strict performance standards, will ensure the compatibility of the uses with other adjacent industrial and non-industrial uses.
- Performance standards for uses in the I-L zone are designed to maintain compatibility between low-impact industrial uses and neighboring non-industrial and industrial uses. Performance standards include full enclosure of uses and requirements for buffers and screening from adjacent properties.

Note: This is the only zone in the study area that prohibits residential uses. In addition, retail is only allowed as an accessory use.

Figure 2-2: Bayside Height Overlay Map

ROS Recreation and Open Space Zone – Fox Street Field

Purpose

- To preserve and protect open space as a limited and valuable resource;
- To permit the reasonable use of open space, while simultaneously preserving and protecting its inherent open space characteristics to assure its continued availability for public use as scenic, recreation, and conservation or natural resource area, and for the containment and structuring of urban development;
- To coordinate with and carry out federal, state, regional, and city recreation and open space plans;
- To provide a suitable location for large-scale regional sports and athletic facilities; and
- To develop an open space system throughout the downtown, which provides the highest quality parks, plazas, and pedestrian environment.

R6 Residential Zone: Lancaster/Oxford to non-frontage Cumberland Avenue parcels east to Franklin Street – *Franklin Street to non-frontage Washington Avenue parcels and Oxford Street to Cumberland Avenue*

Purpose

- 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 to conserve the existing housing stock and residential character of neighborhoods by controlling the scale and external impacts of professional offices, and other nonresidential uses.
- In cases of qualifying small, vacant, underutilized lots located in the urban residential and business zone, to encourage new housing development consistent with the compact lot development pattern typically found on the peninsula.

Key Street Relationship/Urban Design Standards

See **Table 2-1** for a general summary of dimensional standards for the districts in the Study Area.

- Each unit shall have the long side of the unit parallel to the street line where the required street frontage is met.
- Each unit shall be provided with at least two (2) trees meeting the city's arboricultural specifications and which are clearly visible from the street line and are located so as to visually widen the narrow dimension or proportion of the unit.

Note: There are provisions for Small Residential Lot Development, providing more flexibility for infill redevelopment.

DISTRICT	Minimum Lot Size	Structure Height	Minimum Street Frontage	Minimum Lot Width	Minimum Front Yard Setback	Maximum Front Yard Setback	Minimum Rear Yard Setback	Side Yard Setback	Maximum Impervious
B1b	None	45-50-ft	20-ft	None	None	10-ft	10-ft	None	90%
B2	None	45-ft	20-ft	None	None	10-ft	None	None	80%
B2B	(in general, reference B2 Standards)								
B3	None	35-ft (max 65-150-ft)	15-ft	None (street wall build-to-line 5-ft)	NA	NA	NA	NA	100%
B4	(note–this district is limited to the Nissen Building))								
B5	None	35-ft (with provisions for lower buildings along Anderson)	None	None	None	10-ft	None	None	100%
B7	None	125-165-ft	None	NA	75% within 10-ft	NA	NA	NA	100%
IIb	None	35-75-ft	60-ft	NA	None	10-ft street setback	None - 25-ft when abutting residential	None - 25-ft when abutting residential	100%
ROS	NA	NA	NA	NA	NA	NA	NA	NA	NA
R6	4,500 SF	45' max	40-ft	40-ft	10-ft	NA	20-ft	10-15-ft	Open Space Ratio: 20%

Table 2-1: District Dimensional Standards

2.1.3 Mix and Intensity of Land Uses

As noted on **Figure 2-3**, there is a wide-range of uses in the study area. In general, residential neighborhoods with smaller parcels are on the slopes to the south downhill and along Cumberland Ave, and to the east downhill and along Washington Ave, with the highest concentration of residential uses in the East Bayside R6 Zone. The East Bayside typical residential building type is the single family home, often divided into two or more dwelling units. These low-rise/ small lot neighborhoods, with buildings set close to the street, are a desired form and pattern of use, in contrast to Franklin Towers and Kennedy Park.

It is interesting to compare density of housing types. Franklin Towers has 198 dwelling units as compared to Kennedy Park – with a much larger footprint – and only 174 dwelling units. In either case, it is not the number of units that is the issue, but the form, scale, extent of open space, and relationship to traditional grid street networks, that is worthy of consideration. Franklin Towers is too urban for Bayside and Kennedy Park is too suburban for Bayside. Franklin Towers is too intense of a land use, and Kennedy Park lacks intensity.

In reviewing the land use map by parcel, it is important to note that a use such as Governmental requires further consideration. In additional analysis of parcels coded Governmental, there are uses including the post office, Department of Public Works site, Bayside Trail, Franklin Towers, vacant land, pump stations, playfields along Fox Street, and Kennedy Park.

Another example of a land use code worthy of consideration is Retail & Personal Service. The two lots comprising Whole Foods reveal an interesting relationship between use, building form, and parking. Whole Foods is shown as spanning two parcels, with the parking lot coded Retail & Personal Service ,comprising a larger land area than the building. This ratio of parking to building square footage is not uncommon for a suburban typology. This is the wrong typology for this location. Not the wrong use.

Washington Avenue is probably the most mixed-use neighborhood in the study area. In recent years there has been investment in a number of properties, new construction, and redevelopment of buildings both large and small. The Nissen Building is almost the length of two city blocks, but has very low vacancy rates. The many small businesses fronting Washington Avenue benefit from both the high-density residential neighborhoods surrounding the area, as well as the higher traffic volumes. On more than one occasion, it has been noted that Washington Avenue—terminating with 295 off- and on-ramps, is a prototype for the potential redevelopment of Franklin Street.

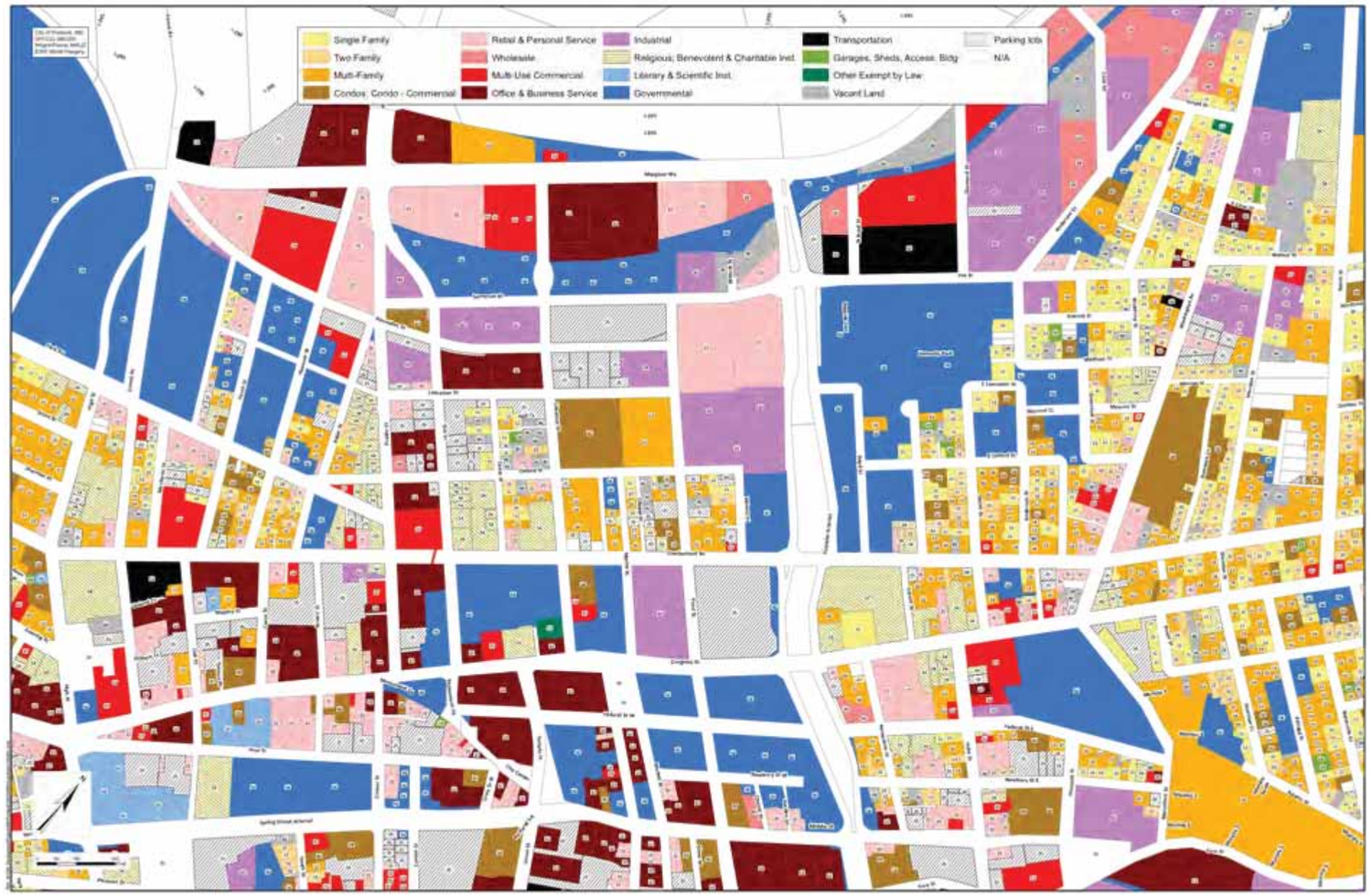


Figure 2-3: Existing Study Area Land Uses (Source: City of Portland)

Figure 2-4: Figure Ground Illustration

2.1.4 The Figure Ground City

Figure 2-4 is a figure/ground analysis of the study area and the surrounding neighborhoods. In general, the larger footprints are in areas with minimal topography as these uses require large flat floor plates. In the study area, there is a direct correlation between the size of the building footprint and the steepness of the terrain. The steeper the terrain, the smaller the building footprint. Furthermore, the smaller the building footprint, the greater the likelihood that the primary land use is residential.

Figure 2-4 also reveals that the typical block in the study area runs between 300 and 500 feet, with the ideal urban block being 250 to 400 feet in terms of the length a pedestrian is comfortable walking, as well as allowing for cost-effective and efficient building footprints—regardless of use.

2.1.5 A New Vision for Bayside

In 2000, the City adopted a New Vision for Bayside. This comprehensive document for Bayside as illustrated in **Figure 2-5**, provided the City with a blueprint for revitalizing Bayside. The 2000 study area did not include East Bayside, which is part of the Bayside Transportation Master Plan. There have been other studies for East Bayside, but a formal master plan process has not been adopted. Franklin Street has been studied extensively, with the most recent plan adopted in July 2015.

East Bayside has seen economic development, particularly along Fox, Diamond, and Anderson Streets, at a parcel-by-parcel, organic scale. Many users have located in East Bayside because of the affordable rents, and large building footprints. Renters and homeowners are finding affordable options to such neighborhoods as Munjoy Hill or the West End. Besides one new construction residential development on Anderson Street with fewer than ten units, East Bayside has seen the redevelopment of existing buildings. Anderson Street was redesigned and is under construction to accommodate the new growth and better serve pedestrians. The East Bayside Lofts at the corner of Anderson and Fox will add another 53 new units to the area, greatly increasing pedestrian activity.

As noted previously, the 80 +/- acre B7 Zone was established to enable the Vision for Bayside. The Vision was adopted in 2000 and the zoning, policy, and standards were not adopted until 2008. However, the standards are in place, and projects have been developed, particularly along Marginal Way between Franklin and Elm Street, testing the vision and the standards.

Since the adoption of the Vision in 2000, which noted the potential for 940 dwelling units, approximately 359 new housing units have been built (with approximately half of these units in the expanded study area east of Franklin Street):

- Pearl Place: 114 Units
- Bayside Village: 100 Units
- Unity Village: 33 Units
- Chestnut Street Lofts: 37 Units
- 409 Cumberland: 57 Units
- Thomas Heights: 18 Units Committed
- East Bayside Lofts: 53 Units
- Midtown: 400 Units Permitted
- Bayside Anchor: 42 Units Permitted

Between the completed projects and the projects in development, the total count for new housing units is 854 +/-. This number is in keeping with the housing goals for A New Vision for Bayside. And with the Portland Housing Authority's conceptual plans to create more dense developments in East Bayside, such as Bayside Anchor, as well as additional redevelopment parcels throughout Bayside, housing, which is in high demand in Portland and key to the success of a neighborhood, could become one of prominent future land uses in Bayside and East Bayside.

Bayside: A Series of Neighborhoods

The 2000 Bayside Plan incorporates a narrative of five overlapping districts suggesting a future scenario of possible neighborhood character and development growth.

The residential neighborhoods between Cumberland and Lancaster were envisioned as Bayside Heights in the 2000 Vision, "with over 500 new and rehabbed home units." Clearly this has not happened, but the potential for revitalization still exists and the vision is still relevant. The area bounded by Franklin, Fox, and Pearl Streets was to become an 8-acre high-tech neighborhood, like a mini-Kendall Square. This area is the Whole Foods and scrap yards. Again the potential still exists. What was envisioned as Franklin Square has been in part realized at the intersection of Marginal Way and Preble St Extension, with a mix of banking, retail, and other professional offices. Bayside Ave (Marginal Way) is the Vision's district that has been most realized. Kennebec Crossing—the heart of Bayside—has been partially realized in terms of the Bayside Trail and the strategic extension of Chestnut St to Marginal Way. The realization of Midtown will greatly benefit the formation of Kennebec Crossing as a neighborhood anchoring and guiding future growth. The final envisioned neighborhood is Government Center. The Post Office will remain a highly visible civic building anchoring the western edge of the neighborhood. Long-term plans are to relocate Public Works, allowing for anticipated significant mixed-uses opportunities. While the State of Maine relocates, the Dept. of Human Services from Marginal Way, social service agencies, will likely continue to have a presence in Bayside.

It is interesting to note—according to City GIS analysis—that growth for the 250-acre study area between 2000 and 2010 has been 0% or negative, except for an area west from Alder St to Forest Ave, which has seen a 0.1% to 0.3% growth (with the national average at 0.63% over the same time period.)

Since the adoption of the Vision, which noted the potential for 230,000 SF of new commercial uses, approximately 300,000 SF has been developed.

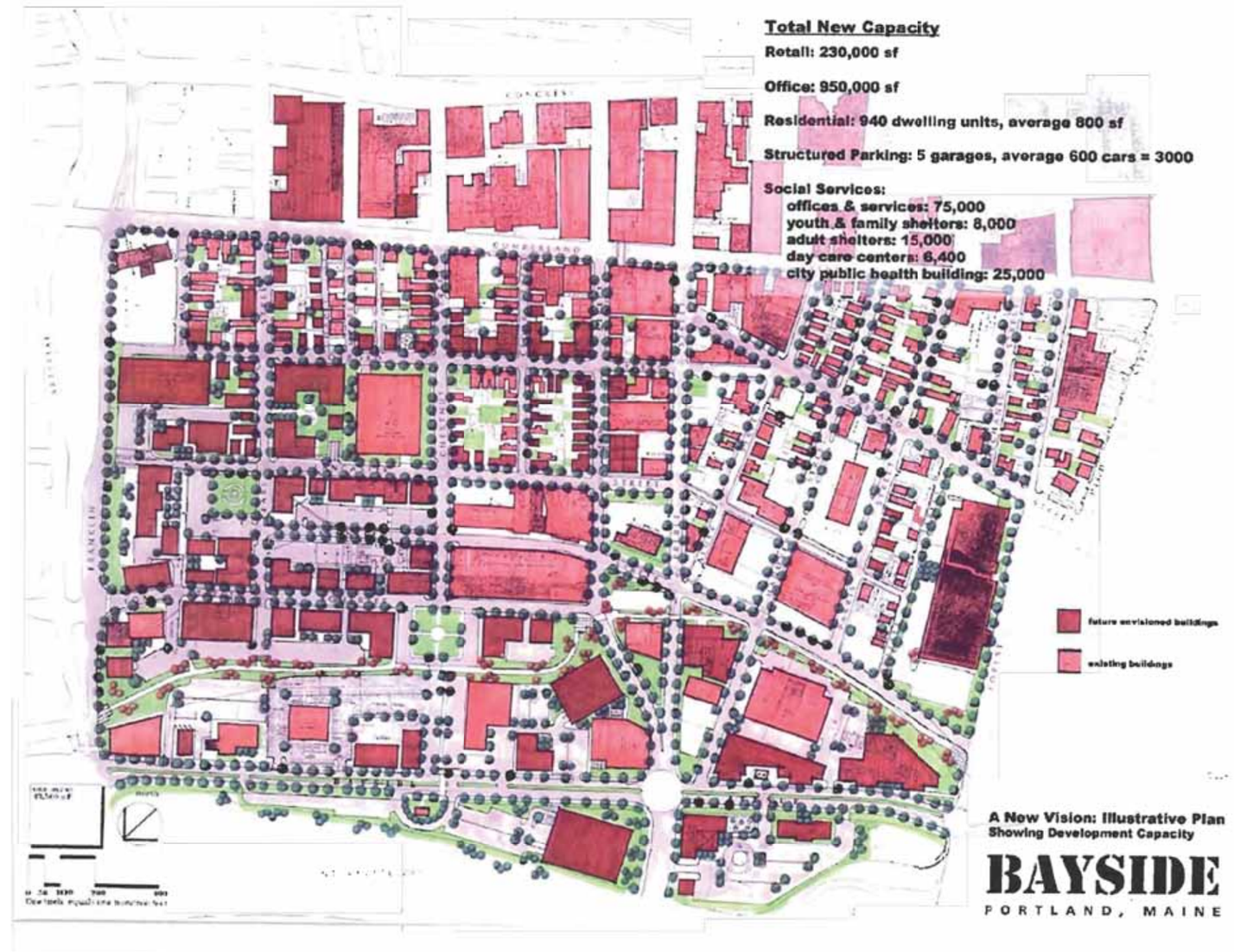


Figure 2-5: A New Vision for Bayside Adopted 2000 (Source: City of Portland)

2.2 Existing Transportation Context

2.2.1 Street Classification and Function

Figure 2-6 notes the designated MaineDOT functional classification of streets in the Bayside area. Most streets within the study area are classified as local roads. Local roads provide access to adjacent land and provide service to travel over relatively short distances as compared to the higher classified streets.

Franklin Street, Marginal Way, Washington Avenue, Elm Street, Preble Street, High Street, State Street, and Cumberland Avenue between Franklin Street and Washington Avenue are classified as Minor Arterials. The definition of a Minor Arterial refers to a series of continuous routes that should be expected to provide for relatively high overall mobility, with minimum interference to through movement; these roads interconnect with, and augment the urban principal arterial system. They distribute travel to geographic areas smaller than those of higher systems.

Forest Avenue south of High Street; Portland Street; Oxford Street between Portland Street and Elm Street, and Cumberland Avenue west of Franklin Street, are classified as Major Urban Collectors. Urban Collectors provide both land access and traffic circulation within urban residential neighborhoods, and commercial and industrial areas.

Most streets within the study area function as local streets with the exception of the following:

- **Franklin Street** – Provides direct access from I-295 to Commercial Street, downtown destinations, and the waterfront.
- **Forest Avenue** – Provides direct access to the downtown from I-295 and points west.
- **Preble Street and Elm Street** – Provides direct access to the downtown from off-peninsula northwesterly neighborhoods.
- **Cumberland Avenue** – Provides east/west peninsula connectivity between Deering Avenue and North Street.
- **Marginal Way** – Provides an east/west circulation function and connectivity with I-295, and between Forest Avenue, Preble Street, and East Bayside.

In addition to the general classification of streets, one-way restrictions impact area accessibility and circulation. **Figure 2-7** notes the existing one-way streets in the study area. Additionally, discontinuance of streets limit circulation and accessibility. Example streets include Oxford Street, Lancaster Street, and Pearl Street.

Figure 2-6: Designated MaineDOT Functional Classification of Streets in the Bayside Area (Source: MaineDOT)

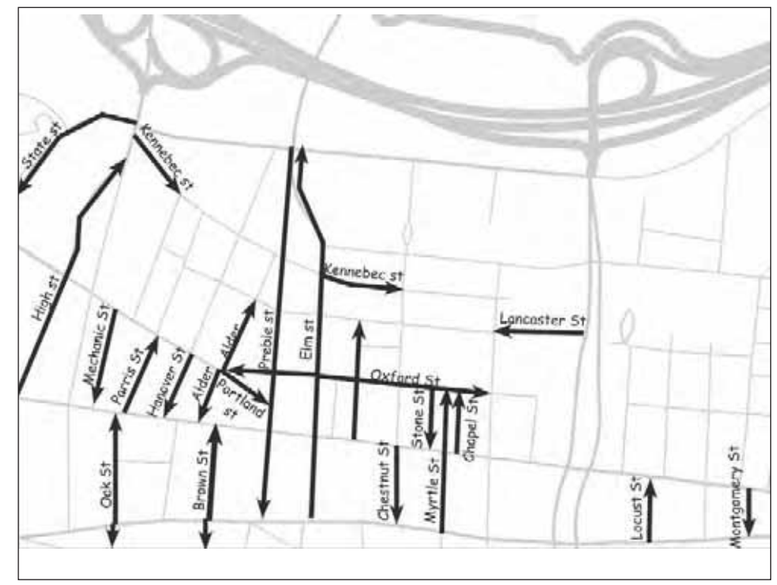


Figure 2-7: One-Way Streets

2.2.2 Daily and Hourly Traffic Volumes

Existing traffic volume data were assembled from available sources. To complement the existing data, weekday morning and afternoon intersection turning movement counts were conducted at a number of locations within the study area. In most cases, the highest traffic volumes occur during the PM peak hour commuter time period (4:30-5:30PM). The turning movement volumes provide key information that is used to determine traffic control requirements (e.g. signalization, etc.), level of service analysis, and intersection operations.

Traffic count data collected revealed a high concentration of pedestrians in various locations throughout the study area during peak hours including near the Preble Street Resource Center, Oxford Street Homeless Shelter, as well as on Congress Street between Preble and Elm Streets.

Bicycles in the study area were also prevalent. There are very few marked bike lanes in the study area, but the low speeds and reasonable grades lend themselves to users.

Average Annual Daily Traffic Volumes (AADT) were obtained from MaineDOT and are depicted on **Figure 2-8**. Main corridors in the study area see the highest daily traffic volume. These roads range from approximately 9,000 – 25,000 vehicles per day and include State and High Streets, Forest Avenue, Marginal Way, Preble Street Extension, Franklin Street, and Washington Avenue. Moderate traffic volumes exist on Cumberland Avenue and Somerset Street, ranging from approximately 6,000 to 8,500 vehicles per day.

Figure 2-8: Study Area Average Annual Daily Traffic Volumes (Source: MaineDOT)

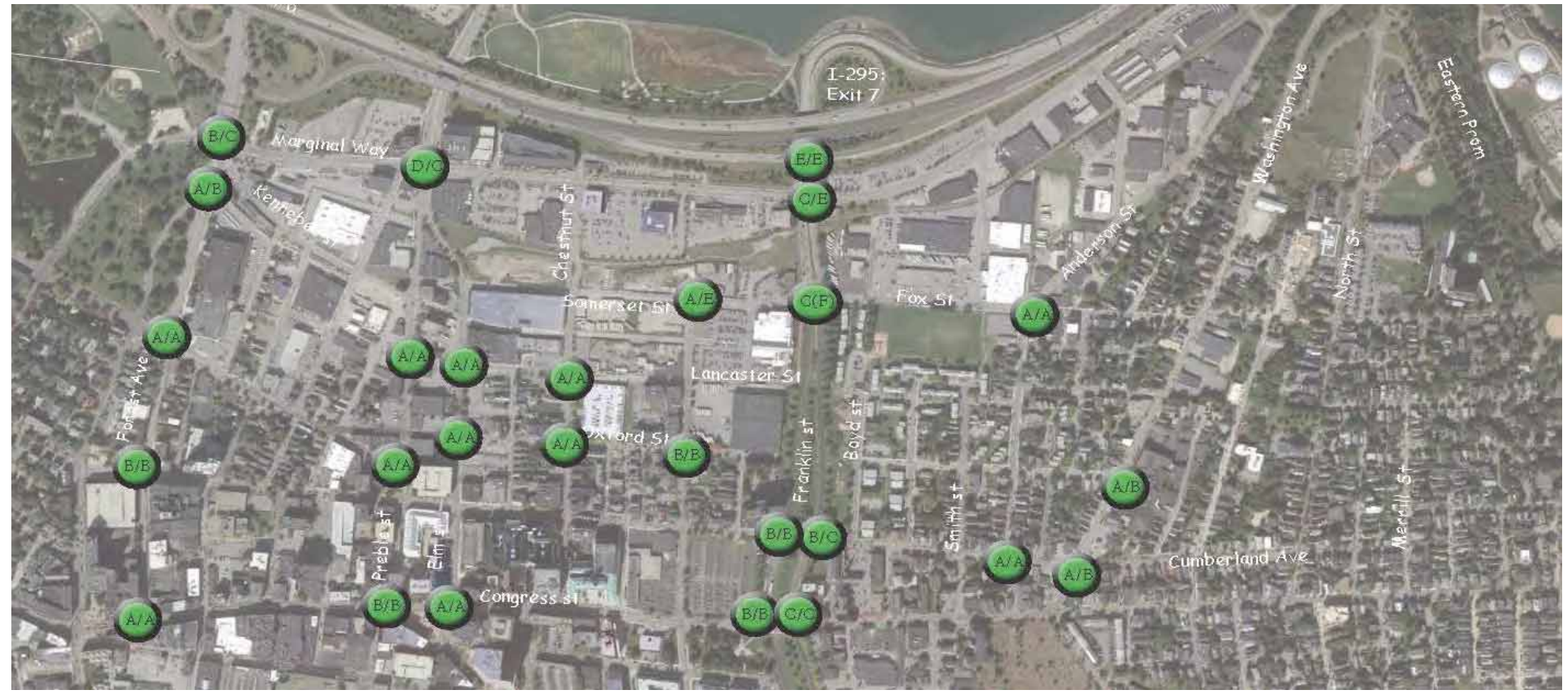


Figure 2-9: AM/PM Existing Level of Service Summary. (Source: MaineDOT and City of Portland)

2.2.3 Level of Service

An understanding of existing traffic operations was derived from a combination of existing studies and analyses performed from new turning movement volumes collected. A summary of the overall intersection results is located on **Figure 2-9**. There are several intersection movements within those intersections with failing levels of service within the study area – most notably on side streets of two-way STOP controlled intersections. Additionally, while Franklin Street analyses indicate the north end corridor is at capacity, proposed modifications along Franklin Street forecast improved flow, as well as provided improved alignment, pedestrian and bicycle accommodations, and connections, among other modifications. These proposed modifications, as well as others, will be discussed further in Section 5 of this report.

2.2.4 Posted Travel Speeds

Figure 2-10 (on the following page) depicts speed limits in the study area and are consistent with other speed limits throughout the City. The highest speed limits (35 mph) are located on Franklin Street, Marginal Way, and Preble Street Extension. Park Avenue and many of the I-295 ramps have speed limits of 30 mph. The remainder of the local roads have 25 mph speed limits, and loop ramps from I-295 are posted at 20 mph. Travel time studies were performed on Franklin Street showing average speeds below the posted 35 mph. Some speeding on Washington Avenue and downhill on Elm Street was observed in the field.

Figure 2-10: Study Area Existing Speed Limits (Source: T.Y. Lin International)

2.2.5 Safety

There are 10 high crash intersections and five (5) high crash segments in the project study area. A High Crash Location is defined as an intersection or roadway segment that has eight (8) or more crashes, and a Critical Rate Factor of 1.0 or more over a three-year period. These locations are highlighted on **Figure 2-11** and summarized in **Table 2-2**.

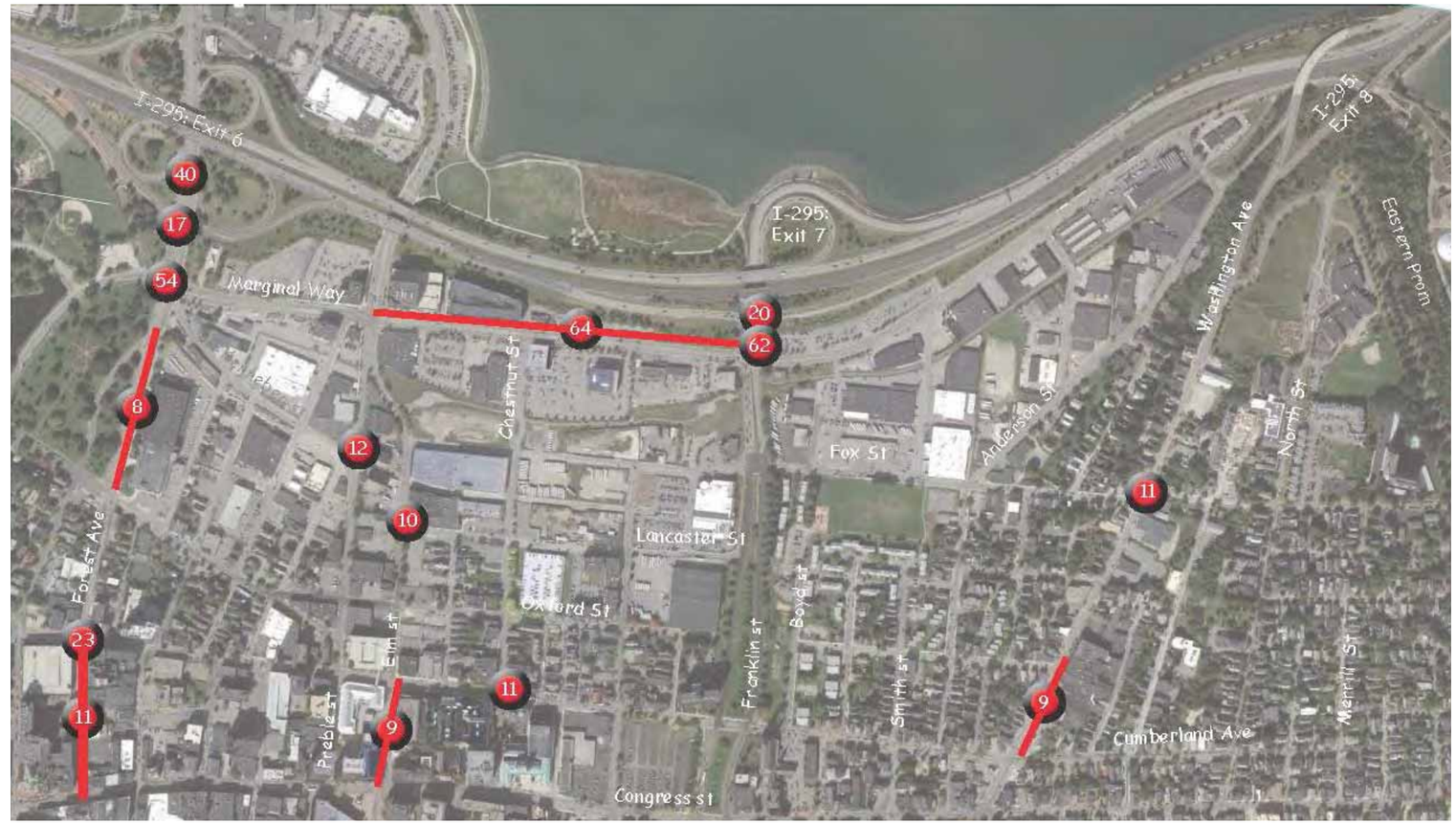


Figure 2-11: Study Area High Crash Locations (Source: MaineDOT)

Intersection/Segment	No. of Crashes	Crash Rate Factor*	Percent Injury
Intersection of I-295 Exit 7 NB Off-Ramp onto Franklin Street SB	20	1.20	20%
Intersection of Franklin Street and Marginal Way	62	1.52	29.0%
Intersection of Kennebec Street and Preble Street	12	4.57	25.0%
Intersection of Chestnut Street and Cumberland Avenue	11	3.17	36.4%
Intersection of Elm Street and Lancaster Street	10	4.57	25.0%
Segment of Forest Avenue between Cumberland Avenue and Congress Street	11	2.27	9.1%
Segment of Marginal Way between Preble Street/Elm Street and Franklin Street	64	3.33	39.1%
Segment of Elm Street between Cumberland Avenue and Congress Street	9	3.35	22.2%
Intersection of I-295 Exit 6 NB Off-Ramp onto Forest Avenue SB	17	3.46	17.6%
Intersection of Fox Street/Walnut Street and Washington Avenue	11	2.38	27.3%
Segment of Washington Avenue between East Oxford Street and Cumberland Avenue	9	1.78	14.3%
Intersection of Forest Avenue, Kennebec Street, Marginal Way, and State Street	54	1.43	25.9%
Intersection of I-295 Exit 6 NB Off-Ramp onto Forest Avenue NB	40	8.17	30.0%
Intersection of Cumberland Avenue and Forest Avenue	23	1.27	43.5%
Segment of Forest Avenue between High Street and Park Avenue/Portland Street	8	1.29	50.0%

Table 2-2: 2012-2014 Summary of High Crash Intersections and Segments (Source: MaineDOT)

Many intersections have distinctive crash patterns. The most common type of collision were rear-end collisions at the end of I-295 off-ramps (on Franklin Street and Forest Avenue), motorists running stop signs, improper lane changes, and rear-end collisions/failure to yield at traffic signals.

**The Critical Rate Factor is a comparison of the safety of the location compared with other similar locations in the state. For example a CRF or 1.50 defines a crash rate 50% higher than locations with comparable characteristics.*

There were 31 bicycle crashes in the study area (see Figure 2-12). Aside from bicyclists making illegal movements (darting into traffic, traveling the wrong way on one-way streets, running red lights, etc.) crash patterns throughout the study area included:

- Bicyclists hit by turning vehicles;
- Bicyclists in crosswalks being hit by vehicles;
- Bicyclists hit by opening car doors ("Dooring"); and
- Bicyclists in driveways hit by vehicles.

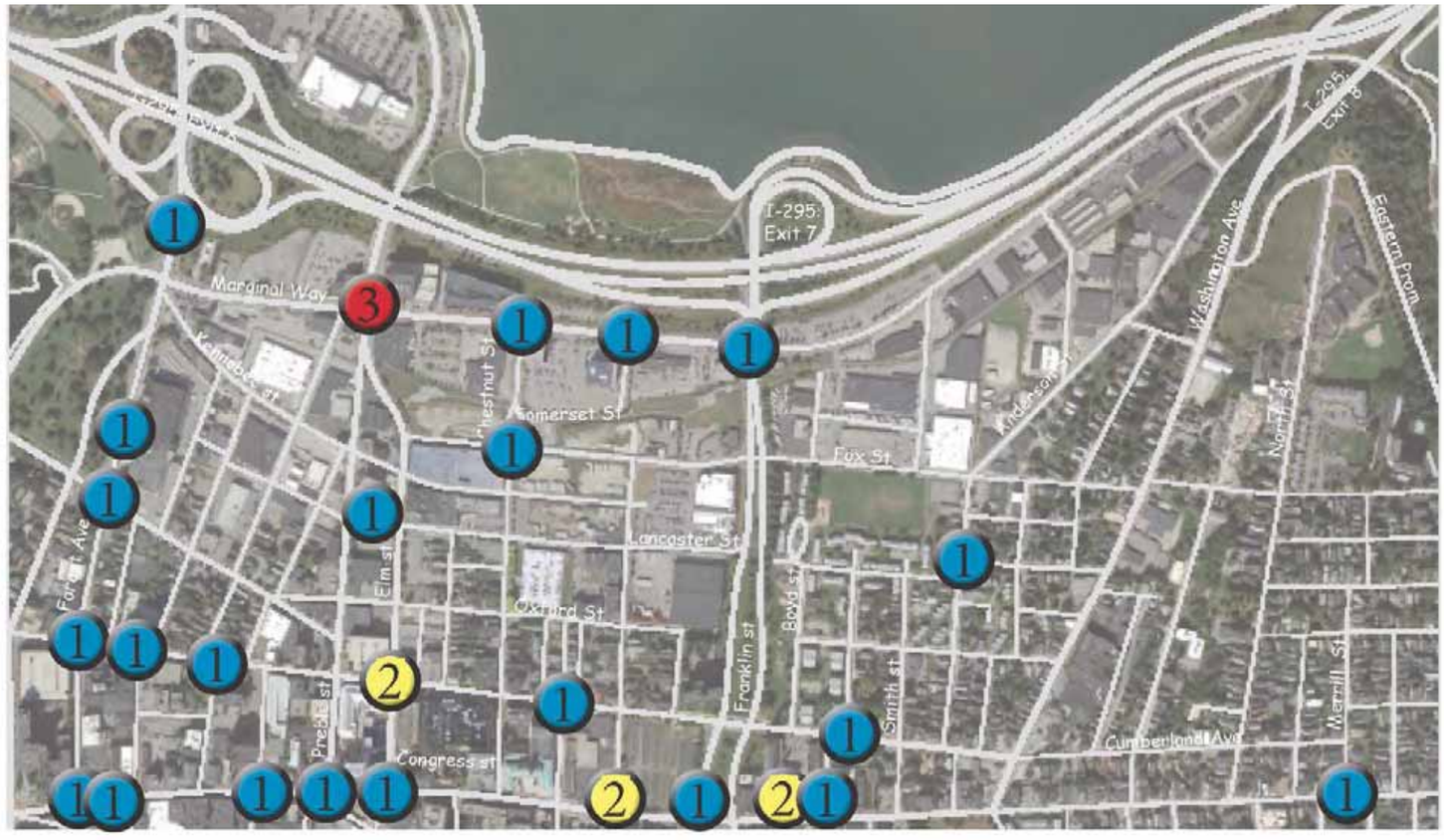


Figure 2-12: 2012-2014 Bicycle Crash Locations (Source: MaineDOT)

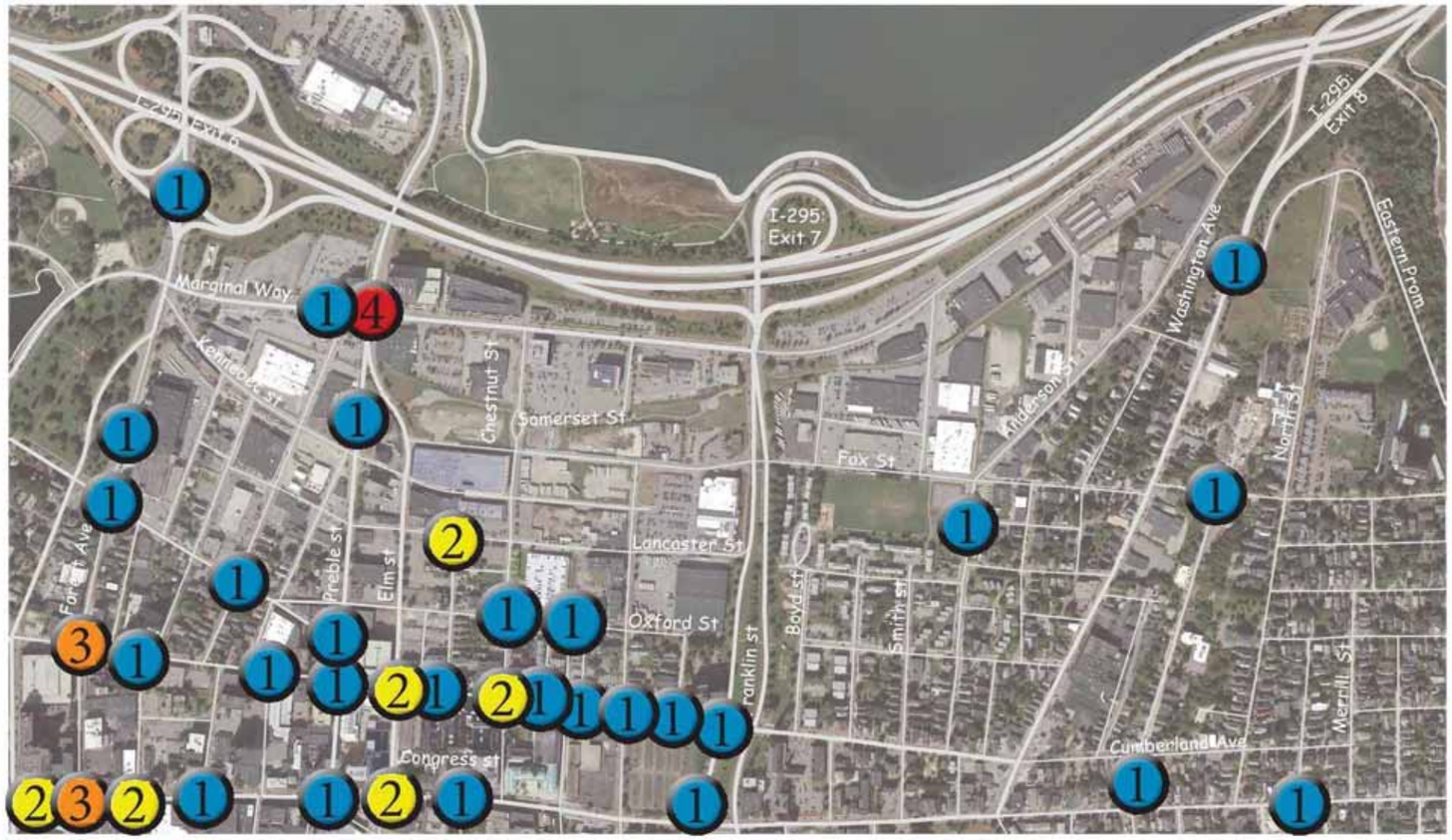


Figure 2-13: 2012-2014 Pedestrian Crash Locations (Source: MaineDOT)

There were 49 pedestrian crashes in the study area (see **Figure 2-13**). A large number of the crashes were on Cumberland Avenue between Franklin Street and Forest Avenue. Aside from pedestrians darting out into traffic, or walking against the walk signal, many pedestrians were hit by vehicles not yielding to pedestrians in crosswalks—often vehicles turning right who didn't see them or at locations with two through lanes, where one vehicle stopped and the second vehicle did not.

2.2.6 On-Street Parking

A brief summary of parking on major streets follows:

- Portland Street has meters between Alder Street and Oxford Street, otherwise 15 minute to 2 hour limits. New striping allows for a back-in parking for the one-way block from Alder Street to Preble Street.
- Cumberland Avenue parking time limits range from 15 minutes to 2 hours.
- Oxford Street has parking from Elm Street to Wilmot Street. All time limits are one hour.
- Lancaster Street parking is limited by parking lots and wide driveways. Alder Street to Preble Street has a one-hour limit.
- Kennebec Street has several sections of all day and unrestricted parking; no parking is allowed from Preble Street to Elm Street.
- Somerset Street allows for parking from Elm Street to Pearl Street only.
- Fox Street parking varies between one and two hours from Diamond Street to Washington Avenue; no parking is allowed from Franklin Street to Boyd Street.
- Marginal Way provides on-street parking along the majority of the corridor. Towards the westerly end, parking is most often in the form of bump out parking sections varying from 15 minutes to 2 hours. Towards the easterly end, on-street parking is longer term wide truck parking to accommodate the high volume of large trucks by the U-Haul. There is additional parking off street in many of the local businesses including a parking garage at Intermed.
- Forest Avenue parking varies from 1 to 2 hours, and short-term parking in front of the post office on both sides of Forest Avenue.
- Minor streets vary with short-term parking, often unrestricted. Most streets have a street cleaning schedule.

2.2.7 Pedestrian and Bicycle Facilities/Streetscape

Existing bicycle and pedestrian facilities were inventoried and assessed as part of this study. For this assessment, the study area was divided into four quadrants. Data sources for **Figure 2-14** include GIS source information provided by the City of Portland, GPCOG, MEGIS, ESRI World Imagery, in addition to field work.

I-295
I-295
I-295

South West Quadrant is the area from Deering Oaks to Franklin St, and from Portland St and Cumberland Avenue, to Kennebec St. This quadrant includes landmarks such as the Post Office, Department of Public Works (DPW) buildings, Bayside Bowl, Preble Street Resource Center, and many other social services facilities; the Chestnut Street parking garage, Franklin Towers, Pearl Place apartments (Avesta), Noyes & Sons moving specialists, and Whole Foods Market. The streets in this area are mostly residential streets with 30- to 50-foot rights-of-way. Several streets are one-way and most have on-street parking and sidewalks on both sides. As shown in **Figure 2-15**, there are many missing sidewalks and many of the existing sidewalks do not meet ADA requirements and are in need of repair or replacement. Parts of Lancaster Street and Kennebec Street are missing sidewalks. This area has well-marked crosswalks, although there is inconsistency in the painting symbol. Some crosswalks are solid white two-line style, and some are block style markings, which are more visible and the current City standard. It was noted that crosswalks were nonexistent in many locations on the more heavily traveled intersections (e.g., Preble and Lancaster, Chestnut and Lancaster, and Chestnut and Kennebec). Refer to the existing conditions base map for sidewalk and crosswalk locations. Bike lanes exist in the form of 5-foot wide bike lanes on State St, High St, and all of Portland St.

South East Quadrant is the area from Franklin Street to Washington Avenue, and from Cumberland Avenue to Fox and Anderson Streets. This area includes landmarks such as Bayside Terrace neighborhood, Kennedy Park, numerous residential homes, and retail and restaurant businesses of Washington Avenue. The streets in this area are generally residential type streets with 50-foot rights-of-way. Cumberland Avenue and Washington Avenue appear to have 66-foot rights-of-way. Anderson Street has a 60-foot right-of-way. Most of the streets have on-street parking and sidewalks on both sides. As shown in **Figure 2-16**, this area has numerous sidewalks, although many sidewalks do not meet ADA requirements and are in need of repair or replacement. With the exception of Cumberland Avenue and Washington Avenue, the streets in this area do not have crosswalks.

The new Boyd Street Trail connects Boyd Street to North Boyd Street. A connection along North Boyd Street has been designed and is planned for under construction from Fox Street to the Bayside Trail in 2016. Additionally, there is a shared-use path on the northern end of Washington Avenue and the Tukey Street Ramp, with a connection to the Bayside Trail, and a connection to Tukeys Bridge and the Back Cove Trail.

Figure 2-15: Southwest Quadrant (Source: GIS source information provided by the City of Portland, GPCOG, MEGIS, ESRI World Imagery, in addition to field work)

Figure 2-16: Southeast Quadrant (Source: GIS source information provided by the City of Portland, GPCOG, MEGIS, ESRI World Imagery, in addition to field work)

Northwest Quadrant is generally the area bound by Franklin Street to Forest Avenue, I-295 to Kennebec Street, and includes the approved Midtown mixed-use development, the proposed retail at 195 Kennebec Street, approved Bangor Savings Bank at 20 Marginal Way, AAA, InterMed, Bayside Village apartments, Trader Joes, Walgreens, Planet Fitness, Planet Dog, and the Bayside Trail, with two (2) large pedestrian plazas. This area has seen the most recent new development and proposed re-development. Pedestrian facilities are improving with each new construction project, but there are still many missing links in the sidewalk system.

As seen on **Figure 2-17** bikeways in this area include the Bayside Trail, the proposed extension of the Bayside Trail along Somerset Street and Kennebec Street, and bike lanes on both sides of Marginal Way. No other bicycle facilities exist in this quadrant.

Northeast Quadrant is generally the location of light industrial and commercial businesses of Bayside and includes U-Haul, Wesco Standard Electric, Empire Beauty School, Play it Again Sports, Portland Mattress Makers, World Gym, VIP Bus Service, Green Building Supply, DSI Door Services, Rockingham Electrical, Independent Electric Supplier, and numerous other businesses. The majority of the buildings are one-story, flat-roofed warehouse structures. Long, unbroken driveway access and parking lots dominate this area.

As depicted on **Figure 2-18**, sidewalks in this area are very minimal and include a 14-foot wide sidewalk along the U Haul frontage on Marginal Way from Plowman Street to Cove Street; along the east side of Anderson Street to Gould Street; a new sidewalk proposed on the west side of Anderson Street; a new sidewalk segment along Coffee by Design; a new sidewalk on the west side of Fox Street from Anderson Street to Franklin Street; a short segment on the south side of Marginal Way from Franklin Street to North Boyd Street, and a sidewalk on the north side of Marginal Way along the park and ride lot edge that ends before Franklin Street.

Bikeways in this area include the Bayside Trail shared-use path which serves as the main bicycle and pedestrian facility in this area. Additionally, there are 6-foot wide (minimum) bike lanes on both sides of Marginal Way from Plowman Street to Forest Avenue. The Tukey Street ramp has recently constructed a shared-use path on the west side that connects the Back Cove Trail on Tukeys Bridge to the Bayside Trail. A connection along North Boyd Street has been designed and waiting for construction from Fox Street to the Bayside Trail.

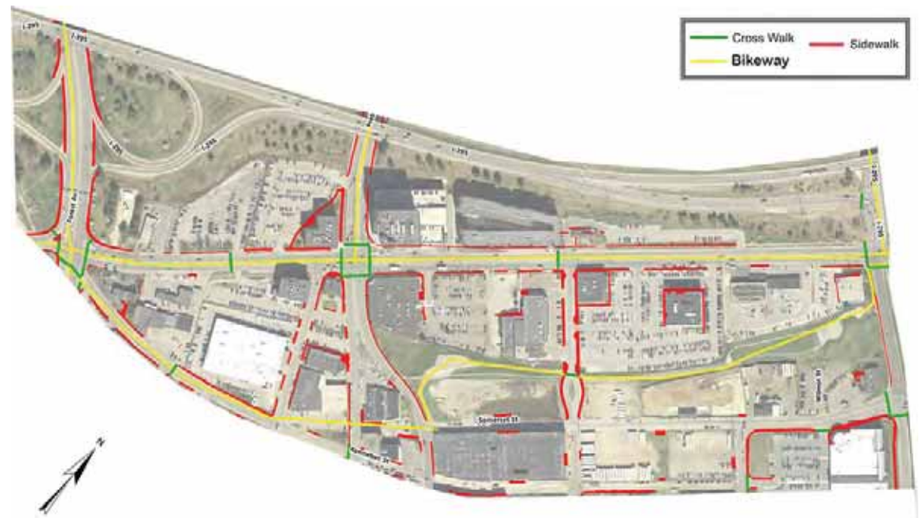


Figure 2-17: Northwest Quadrant (Source: GIS source information provided by the City of Portland, GPCOG, MEGIS, ESRI World Imagery, in addition to field work)

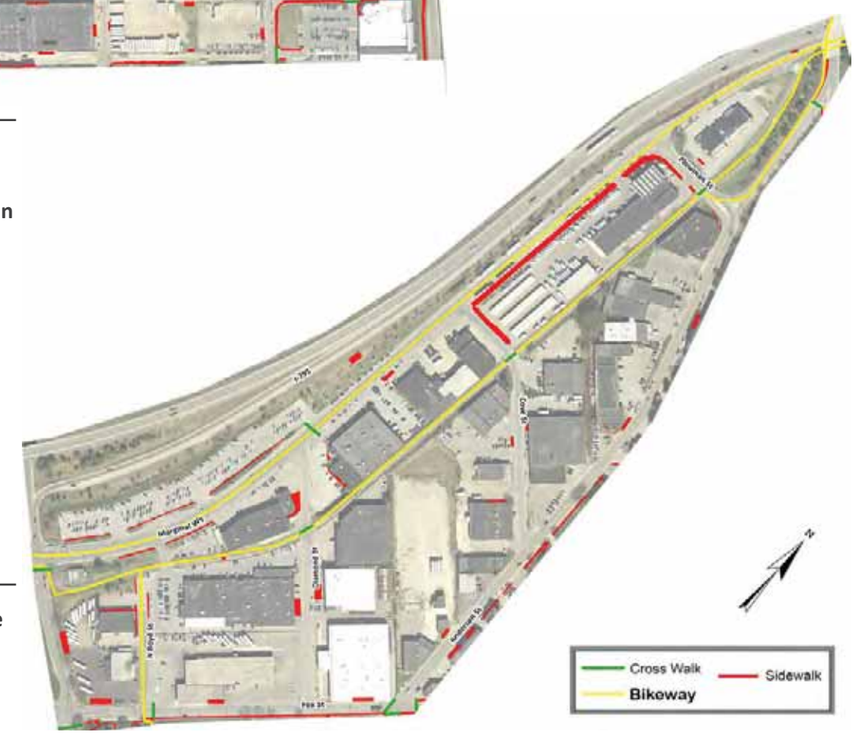


Figure 2-18: Northeast Quadrant (Source: GIS source information provided by the City of Portland, GPCOG, MEGIS, ESRI World Imagery, in addition to field work)

Figure 2-19: Existing METRO bus routes serving the Bayside neighborhood. Complete route information can be found at http://gpmetrobus.net/.

2.2.8 Transit Service

METRO Service Overview

METRO is the primary provider of transit service to the Bayside neighborhood. METRO provides fixed-route bus service in the City of Portland, and neighboring communities of Falmouth and South Portland. Funding for the service comes from municipalities within its service area, as well as state and federal transit funds, and revenue from farebox collection. It operates seven bus routes (Routes 1, 2, 4, 5, 7, 8 and 9 (formerly Routes 3 and 6)), and serves multiple transit hubs in the city—METRO PULSE on Elm Street, Congress Street, Portland Transportation Center, and the Casco Bay Ferry Terminal. METRO maintains 32 buses and has an annual average ridership of almost 1.5 million passenger trips[1]. The existing fare collection system accepts cash (no change is provided) and paper tickets/passes only; no mobile ticketing or smartcard system is currently in place. Unlimited daily and calendar monthly passes are available, in addition to ten-ride tickets. Tickets and passes can be purchased by mail, or in person at METRO Pulse, METRO Office (on Valley Street), some retailers, and other locations within the service area. On-board free transfer tickets are also available.

Paratransit service for seniors and persons with disabilities, complementing the fixed-route service and required by the Americans with Disabilities Act (ADA), is provided by Regional Transportation Program, Inc. (RTP).

Service Characteristics

The Bayside neighborhood is primarily served by METRO Route 8—the "Peninsula Loop", and therefore will be the main focus of this study. It is described in more detail below. Routes 7 and 9 skirt the northeastern edge of Bayside on Washington Avenue, while Routes 2 and 4 skirt the western edge of Bayside on Forest Avenue. Route 8 directly connects to all METRO routes or runs in close proximity to other routes to enable transfers to be made within a short walking distance, as shown in Figure 2-19.

- **Route 7** provides connections to Falmouth via Route 1, and terminates at METRO PULSE on Elm Street between Cumberland Avenue and Congress Street. Route 7 connects to Route 8 on Preble Street at Cumberland Avenue.
- **Route 9** is a circulator route with Route 9A operating clockwise, and Route 9B operating counter-clockwise, servicing Congress Street and northwest Portland via Washington Avenue/Auburn Street. There is no direct connection to Route 8, but a transfer can be made within walking distance.
- **Route 2** operates between Pride's Corner in Westbrook and Congress Street via Route 302/Forest Avenue, connecting to Route 8 at Monument Square.
- **Route 4** operates between Westbrook and Congress Street via Route 25/ Brighton Avenue, and also connects to Route 8 at Monument Square.
- **Route 1** to PTC operates between Eastern Promenade and Fore River parkway, overlapping with Route 8 along Congress Street with a connection at Monument Square.
- **Route 5** operates between the Maine Mall at Foden Road,and Congress Street, and connects to Route 8 at METRO Pulse on Elm Street.

Route 8 connects Bayside with the Casco Bay Terminal, Maine Medical Center, and Monument Square. The route is circuitous, operating on most streets in one direction only, and could be essentially viewed as two loop routes that overlap on Congress Street. The route has evolved to provide front door service to a number of key origin and destinations. Route 8 provides an important connection to public housing at Franklin Towers, shopping at multiple grocery stores (Hannaford, Whole Foods, and Trader Joes) and private student housing on Marginal Way. This route also serves a number of human services facilities including shelters and drop-in centers on Preble Street, whose clientele may be transit dependent (i.e. they have no access to private transportation and therefore rely heavily on transit), and a very high percentage of the mobility-impaired population (Peninsula Transit Study).[2] The needs of this ridership profile make

[1] http://gpmetrobus.net/images/stories/food/METRO—Portland-background.jpg

[2] Portland Peninsula Transit Study, Peninsula Transit Committee, December 2008

it difficult to alter the route to improve efficiency of operations because some door-to-door service would be reduced. In addition, since paratransit service is operated by RTP, METRO must balance the demands of riders looking for quick and direct connections to/from Bayside, and a transit dependent community, who rely heavily on service proximity that enables them to take the fixed route service, rather than the more expensive paratransit that requires advance reservations. The background on this issue has been well documented in the Peninsula Transit Study.

While the existing route provides access to many destinations, circuitous routing can be confusing and frustrating for riders getting off and on at the same stop for their return trip, instead of at a stop across the street, or in the opposite direction for a return trip. This also adds additional travel time for riders. In fact, 10 percent of survey respondents in the Peninsula Transit Study mentioned that they were discouraged from taking transit because maps and schedules were complicated. Multiple turns along the route add more delay and conflict with other road users, ultimately adding to METRO's operating cost.

Service operates seven days per week, with Sunday service added in August 2015. However, start and end points change throughout the week, and may be confusing for new riders:

- Service begins at Casco Bay Terminal on weekdays and Sundays, but Maine Medical Center on Saturdays.
- On weekdays, the second to last trip ends at Franklin Towers, but the last trip ends at Congress Street and Forest Avenue.
- On Saturdays, service ends at Franklin Towers, and on Sundays it ends at Maine Medical Center.

A summary of the service characteristics of Route 8 is provided in **Table 2-3**. As noted in the Peninsula Transit Study, service ends too early in the day to provide adequate service for employees who work later shifts at the grocery store, or residents that need to grocery shop after work on weekdays. Feedback from METRO indicates that schedules do not have any built-in layover time between trips. As a result, if service starts to run late, there is no opportunity for bus operators to get back on schedule, unless future trips are shorter than scheduled. This tight scheduling greatly impacts service reliability and on-time performance, which is currently around 70 percent, according to METRO. If additional service is added to assist in service recovery, this leads to passenger crowding (directly or indirectly linked to schedule delays); the bus and bus operator are pulled from another route; bus operators are on standby in the event of delays and/or breakdowns; or bus operators are hired on overtime to assist. These factors have impacts on transit service operations, and associated operating cost for the transit agency.

	Weekday	Saturday	Sunday
Span of Service	6:40 a.m. – 6:15 p.m.	7:50 a.m. – 6:15 p.m.	9:10 a.m. – 4:50 p.m.
Frequency (all day)	30 minutes	60 minutes	60 minutes

Table 2-3: Route 8 Service Characteristics (Source: METRO)

Ridership

Passenger ridership data was provided by the 2013 On/Off METRO survey; counts were conducted on a typical day in 2013. As seen in **Figure 2-20** below, the bus stop in front of Hannaford grocery store is the most popular stop along Route 8. This stop accounts for 85 ons and 49 offs, or 21% of total ons and 12% of total offs along the entire route. The other four most utilized stops are all along, or within close proximity to, Cumberland Avenue – Franklin Towers, Cumberland Avenue and Elm Street, Preble Street and Oxford Street, and Preble Street and Cumberland Avenue. No riders were reported at the stops at Somerset Street and Elm Street, and Preble Street and Marginal Way.

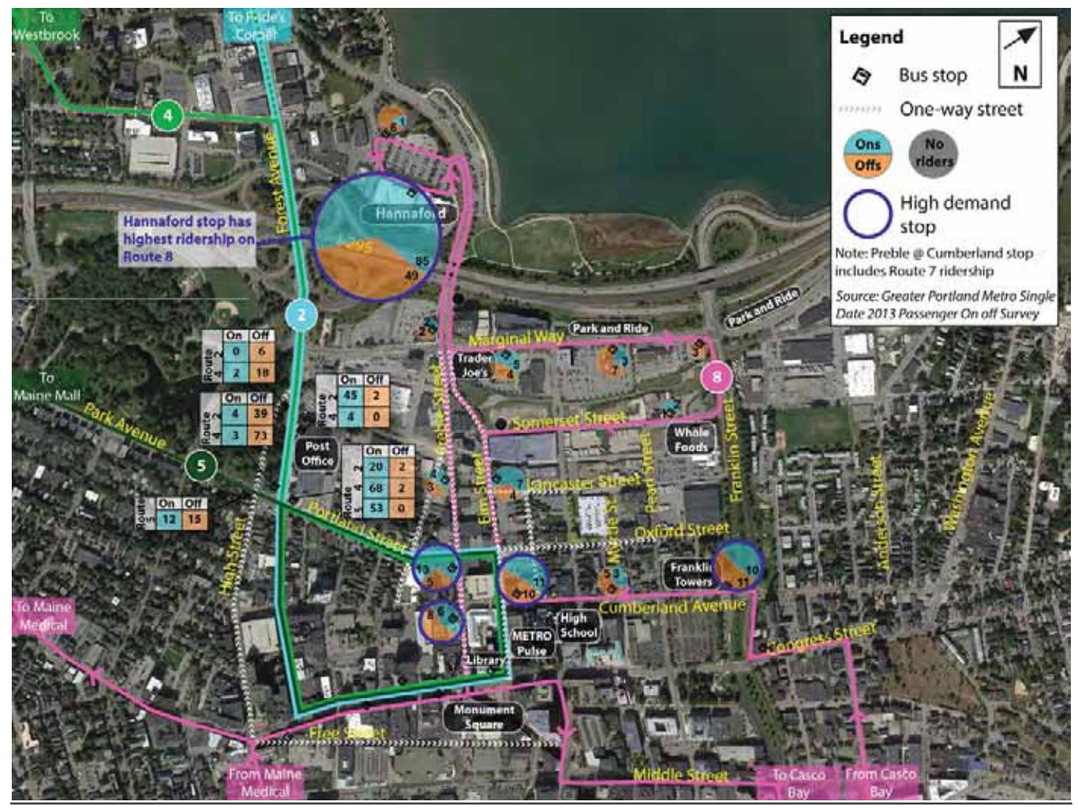


Figure 2-20: Ridership at stops in Bayside

The ridership data shows that the route is heavily relied upon for access to the Hannaford grocery store, Franklin Towers, and trip origins/destinations near the intersections of Elm Street and Preble Street with Cumberland Avenue. These stops may also be used as connection points to other routes such as Route 2, Route 4, and Route 5. Low ridership at stops between Somerset Street and Marginal Way may illustrate the need for better bus stop access in these areas, or a lack of destinations for bus riders of Route 8.

During the summer of 2015, Automatic Passenger Counters (APCs) were installed on METRO buses. These APCs will provide more detailed and accurate ridership data at the stop level for boardings and alightings, in the future. A more detailed analysis of Route 8 usage could provide further insight into ways to potentially make the route more efficient.

Bus Stops

A transit rider is a pedestrian at the start and end of trips, increasing the need to focus on the path of travel to and from bus stops, in the context of the complete streets approach to roadway design. The majority of bus stops in the Bayside study area do not meet the general METRO or industry design standards for bus stop design. Existing bus stops are identified by a single, small, yellow bus stop sign, and often do not have proper landing areas, rider amenities, or sufficient bus stop length. These features are needed to allow buses to pull in and out of the stop, and have both bus doors open close to the sidewalk; proximity to curb ramps and crosswalks is important to facilitate rider access.

A very prominent issue at many stops in the study area is the lack of regulatory signage that prohibits parking in the bus stop. At stops where there is a no parking sign defining the rear of the bus stop, the length is often insufficient to enable a bus to properly access the stop if a car is parked too close. Allowing parking and loading in bus stops is a major impediment to an accessible and efficient bus service. Common conditions at existing bus stops in the Bayside area are illustrated in **Figure 2-21** and described below.

Bus Stop Features

METRO does not currently have specific guidelines on bus stop design, although it has a desire to establish them in the near future. In the meantime, some suggested bus stop design guidance has been provided by the Greater Portland Council of Governments (GPCOG), as part of the Regional Bus Sign and Shelter Study Report and Implementation Guide, completed in 2013. Furthermore, planned improvements along Congress Street will serve as a model for bus route priority and bus stop design. Generally, METRO is moving toward the following standards:

- **High use bus stops**—large shelter with seating, trash receptacle, bicycle parking, and electronic real time bus arrival information.
- **Standard bus stops**—Sign for METRO, potentially a bench, trash receptacle and bicycle hoops.

As the transit agency intends to upgrade to 40-foot buses, bus stop lengths should be appropriately provided to meet adjacent site conditions. METRO generally spaces bus stops 1/8 to a 1/4 of a mile apart for urban areas like Bayside.

Bus stops along Route 8, within the study area, lack the general standards for METRO bus stop design that provide for the safety and comfort of riders. Industry standards and ADA requirements for bus stop design generally include:

- Minimum five foot wide by eight foot deep clear landing area with less than two percent cross slope at the front door zone;

Figure 2-21: Issue and Opportunities at the Bus Stops in Bayside

- Level and clear area, at least four foot deep, in the rear door zone;
- ADA compliant path of travel (four foot wide path with less than two percent cross slope) between the landing area and bus stop amenities (i.e. shelters/benches);
- Shelters and benches positioned outside of the landing area and rear door zone, and with appropriate clearances from other sidewalk and street elements;
- Bus stops should be connected to a sidewalk and crosswalks with curb ramps, and located at least five feet clear of an abutting crosswalk;
- Bus stop signs should be oriented perpendicular or at an angle to the curb for visibility by both drivers and pedestrians, positioned so the bottom of the sign is seven feet from the ground, and have a reflective finish for visibility during dark or low light conditions; and
- Bus stop lengths should be appropriate for the maximum bus length operating on the route, the stop location relative to the intersection (near-side, far-side or mid-block) and whether it is located adjacent to parking, within a bus bay or at a curb extension. Adjacent sidewalk conditions relative to the landing area and clear zone should also be considered.

Providing continuity in bus stop design and placement can create a more recognizable bus route, making the service easier for riders to use.

In addition to bus stop design, placement of bus stops is also important for overall quality of service. Stops should avoid conflicts with driveways and street features (trees, benches, store signs, utility posts, etc.). Spacing between stops should balance ridership demand with service efficiency. For example, frequent bus stop placement serves more origins and destinations, but impedes route efficiency and could reduce ridership due to long travel times.

Bus Stop Placement

Bus stops can be placed in one of three locations in relation to an intersection, as seen in **Figure 2-25** (on the following page).

- **Far-side** (**Figure 2-22**) – Bus stops located after an intersection are the safest for pedestrians, as they are typically crossing behind the bus. These stops also require the least amount of curb space, reducing their effect on on-street parking. Far-side stops at signalized intersections have the added benefit of making it easier for the bus to re-enter the general traffic flow, helping to maintain travel times, and reducing conflicts with right turning vehicles. The stop on Cumberland Avenue at Franklin Towers is considered a far-side stop.
- **Near-side** (**Figure 2-23**) – Bus stops located before an intersection avoid double stopping at the signal and at the bus stop, improving route efficiency. This also improves safety as the bus drivers have full view of the intersection. However, they can require almost as much curb space as mid-block stops and crosswalks are typically ahead of the stop, giving bus drivers limited, and sometimes no visibility of pedestrians crossing in front of the bus. The stop at 225 Cumberland is located nearside of the intersection of Cumberland Avenue and Pearl Street.
- **Mid-block** (**Figure 2-24**) – Bus stops located mid-block, between two intersections, require the greatest amount of curb space and therefore have the greatest impact on on-street parking. However, they have reduced conflicts with vehicular traffic compared to stops at an intersection, and can provide more direct connections to large trip generators located midblock. Providing crosswalks at mid-block stops is particularly important as pedestrians are inclined to cross the street where they exit a bus, regardless of crosswalk protection. A mid-block stop is located at the Marginal Way and Human Services Building.

Figure 2-22: Existing conditions at a far-side stop, located at Franklin Towers on Cumberland Ave

The majority of bus stops in Bayside are located at the near-side of intersections or mid-block.

Figure 2-23: Existing conditions at a near-side stop, located at 255 Cumberland Avenue

Figure 2-24: Existing conditions at a mid-side stop, located at 161 Marginal Way, formerly the Human Services building

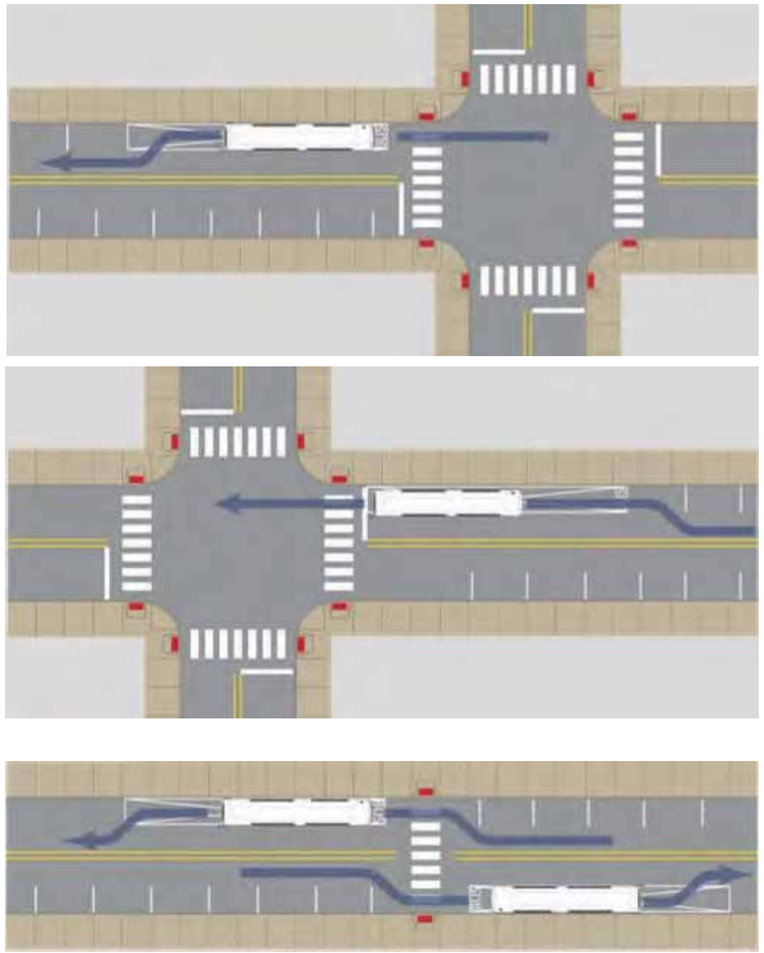


Figure 2-25: Illustrations of the far-side (top), near-side (middle), and mid-block (bottom) bus stop placements. (Source: SEPTA Bus Stop Design Guidelines)

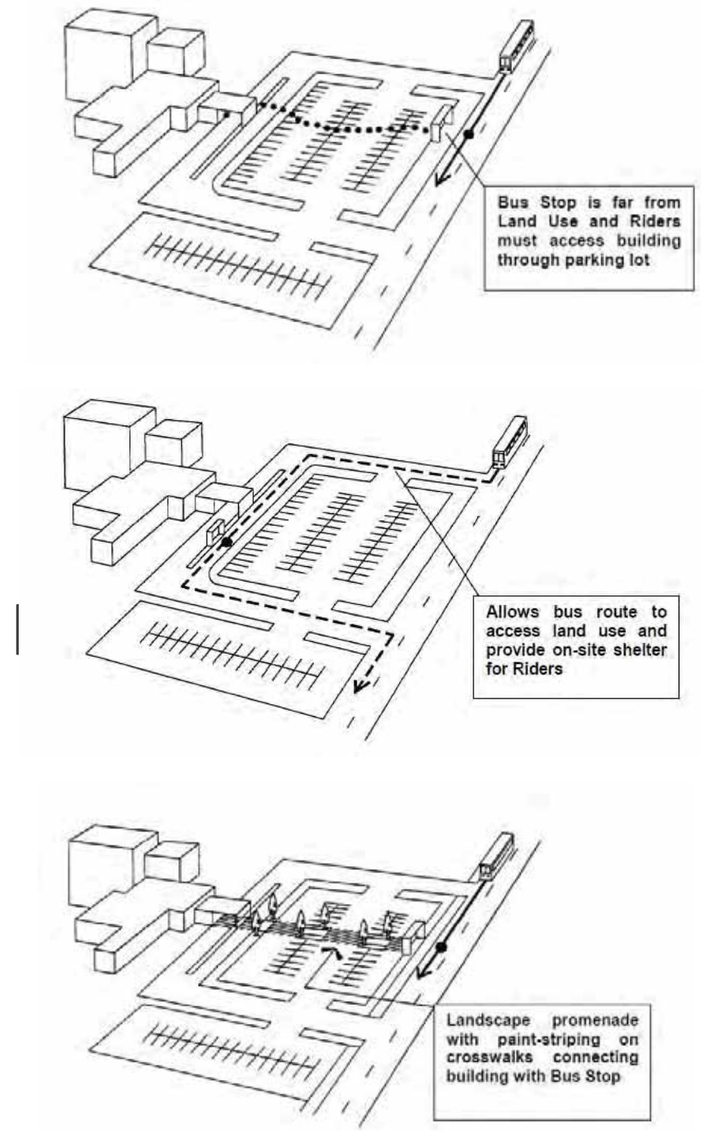


Figure 2-26: Bus stop placement in relation to land use and development. (Source: TCRP Report 19 Guidelines for the Location and Design of Bus Stops

Bus stop placement should also be considered in relation to land use and development. The placement of a bus stop affects riders' ability to access a building, as seen in **Figure 2-26**. An example found in Bayside is the stop at 161 Marginal Way (**Figure 2-21**), where the bus stop provides a clear path of travel through the parking lot to the building behind it.

Bus Stop Configuration

Bus stop design also entails the space within the bus stop itself. Existing buses are 30 or 35 feet long, while many bus stops are only 30-40 feet long, and therefore do not provide any room for maneuverability in and out of the stop. Many bus stops lengths are not clearly defined in the Bayside study area. Where bus stop lengths are clearly defined by a yellow bus stop sign at the front of the stop, and a parking sign at the rear of the bus stop, the distance between signs is often insufficient. Without adequate length, buses may encroach upon crosswalks, such as on Washington Avenue in **Figure 2-27**.

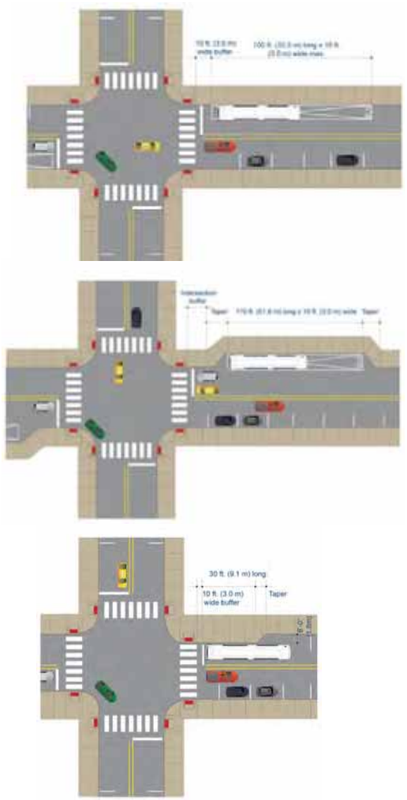
Designing bus routes with bus stop pairs can make a bus route easier to use. Riders typically expect to find the stop on their return trip to be located across the street from where they got off the bus. Along Route 8, within Bayside, only Preble Street at AAA and Preble Street and Marginal Way, appear to be paired stops. The prominence of one-way streets and loop routing configuration makes stop pairs difficult to achieve on this particular bus route.

Figure 2-27: Stopped bus on Washington Avenue blocks the crosswalk

Curbside|Roadside|Shoulder

Bus Bay | Turnout | Cut Out | Pullout

Curb Extension | Bus Bulb| Bus Nub



Source: SEPTA Bus Stop Design Guidelines

Figure 2-28: Bus stop configuration (Source: SEPTA Bus Stop Design Guidelines)

Examples of bus stop configurations at curbside locations, bus bays, and curb extensions are shown in **Figure 2-28**.

Sidewalk Connectivity

Overall, the Bayside area is served by a sidewalk network that links many of the neighborhoods and bus stops, and the downtown core, along Congress Street. Most sidewalks in the study area are at least eight feet wide, and as wide as 10-11 feet on Cumberland Avenue. However, streets with inadequate or narrow sidewalks include Somerset Street and Marginal Way, which service the existing Route 8.

Improvements to the following existing conditions should be considered, to improve transit access:

- At the Marginal Way and Franklin Street and Preble Street and AAA stops, there is a continuous grass strip without a landing area connecting to the adjacent five foot wide sidewalk. Therefore, riders must traverse the grass area to/from the bus, posing a challenge for the mobility impaired, particularly those utilizing mobility-assisted devices such as wheelchairs.
- Sidewalks on Somerset Street are notably absent near bus stops. A dirt path is evidence of a pedestrian desire line on the north side of Somerset Street near Whole Foods market. The stop is not ADA compliant (see #5 in **Figure 2-21**).

Bus Stop Signage and Amenities

Bus stops along Route 8 in Bayside lack bus stop amenities and are only designated with a small yellow sign that shares a pole with one or more other signs, and/or is positioned low to the ground. The signs could be improved to enhance the bus stops and rider convenience. The following observations were made:

- Signs are sometimes oriented parallel and facing the roadway intentionally or because of damaged poles, providing very poor visibility for pedestrians, bus riders, and bus operators.
- The existing yellow tone could be confused with typical warning signs for roadways making bus stops less apparent, and the surface is non-reflective making them difficult to read in the dark.
- The route numbers are small and hard to read.
- Bus stop signs are missing at several stops:
  - Marginal Way and Franklin Street
  - Somerset Street and Elm Street
  - Preble Street and Marginal Way
  - Somerset Street and Pearl Street

Almost all bus stops along Route 8 in Bayside lack bus stop amenities such as shelters, benches, trash and recycling receptacles, wayfinding, maps and schedule information, and bicycle parking. This may make it difficult for riders unfamiliar with the bus route to find the stops, and the Peninsula Transit Study further noted that ***"For potential riders, the lack of guidance at or near bus stops is a large detriment to their participation"***. Guidance on the provision of benches and shelters is provided in the GPCOG Regional Bus Sign and Shelter Study Report and Implementation Guide. Monument Square is an example of an existing bus stop that provides a sufficient bus stop area and amenities, as shown in **Figure 2-29**.

Figure 2-29: An existing bus stop that serves as a good example for Bayside is the Monument Square stop on Congress Street. This bus stop, located within a bus pull out, or bus bay, has sufficient length for buses to pull out of the travel lane and to the curb. Rider amenities include a shelter, bench, and trash receptacle. The sidewalk adjacent to the stop is 25 feet wide and provides a level landing area (five feet wide by eight feet deep area at the front door zone). Crosswalks with curb ramps are provided in close proximity to the stop.

Bus Stop Spacing

The distance between bus stop locations is an important consideration for route efficiency. The Route 8 schedule notes that stops are located approximately every quarter mile, or 1,320 feet. In an urban area like Bayside, METRO considers bus stop spacing of 1/8 mile to be more appropriate. Although, with about 15 seconds deceleration/acceleration time per stop, fewer stops with greater spacing can reduce the length of an entire bus trip. The downside of having less stops on a route is that it increases the travel distance to stops, which can create hardships for seniors and persons with disabilities, which is a particular concern for the Bayside area. However, minimizing the distance between stops can help reduce the costs associated with maintaining each bus stop and operating a longer route.

Existing Transit Plans

A number of transit plans relevant to the Bayside Master Plan have been completed in recent years or are currently underway. These are documented below and key points are noted.

The **Peninsula Transit Study**, completed in 2008, proposed several improvements (shown in **Figure 2-30** below) that are now being implemented; notably turning Congress Street into a transit priority corridor, providing the following benefits to METRO services that connect with Route 8 servicing Bayside:

- Reduced bus conflicts with vehicular traffic and crossing pedestrians leading to reduced delay;
- Relocation of bus stops to existing curb extensions;
- Improved pedestrian environment; and
- Enhanced bus stops with shelters.

Within the Bayside neighborhood, the study references the potential for several future bus routing improvements:

- A one-way bus stop pair along Elm Street and Pearl Street;
- Relocation of bus service from Forest Avenue to Preble and Elm Streets with bus lanes;

Figure 2-30: Summary of Transit System Recommendations from the Peninsula Transit Study.

- New bus routes on Franklin Street and Marginal Way; and
- The creation of a trolley route along Elm Street and Preble Street.

The study notes the importance of providing a direct to/from service to Hannaford supermarket, as residents seek convenient access to this destination. A number of strategies are outlined to increase access, including door-to-door service, which, although convenient for some riders, adds to the route's overall travel time. Serving areas of future development in order to establish transit-oriented travel patterns at the outset of development was also recommended. Requiring developers to contribute towards the costs of additional transit service or providing transportation demand management (TDM) measures could also help establish more transit ridership, as proposed in the Peninsula Transit Study. These recommendations should be evaluated in the context of overall METRO planning.

The transit system improvements proposed in the Peninsula Transit Study related to service branding, coordinated schedules, real-time information, and universal transit passes, are also important improvements to consider for transportation in Bayside. The improvements and recommendations derived from this study can serve as a model for Portland and other cities of similar size.

The Hub Link Study, currently underway, is reviewing proposals to improve connections between Portland's transportation hubs. Portland is served by airplane, Amtrak, regional bus, rail, and ferry, yet the centers for these modes are dispersed throughout the city. The Hub Link Study is deriving optimum routes and service that best connect the Portland International Jetport, PTC METRO Pulse, and Casco Bay Ferry Terminal. Alternatives along I-295, Congress Street, Commercial Street, and Congress Street and Commercial Street are being evaluated for their connectivity, mobility, economic development, and cost effectiveness.

Future METRO Planning

Many of the transit needs identified in these studies appear to be relevant within the Bayside neighborhood. Although service on Sunday was added to Route 8, service still only operates half hourly on weekdays and hourly on Saturdays. Bus service to major origin and destinations needs to be more frequent. A rationalizing of a circuitous route like Route 8 should be considered to reduce travel times, and improve reliability. The tradeoff will likely be a slightly longer walk to bus stops for some riders. Alternatively, Route 8 could be used as an urban circulator with primary bus service focused along the edges of the study area.

2.3 Planned Transportation Context

2.3.1 Other Planned Project/Studies

The following summarizes the key transportation details for projects and studies that have been adopted, or are under design.

Franklin Street — The Marginal Way intersection is proposed to consist of four travel lanes on the southbound Franklin Street approach; four travel lanes on the northbound Franklin Street approach; three travel lanes on the eastbound Marginal Way approach, and a single right turn lane providing interstate access only on the westbound Marginal Way approach.

Franklin Street between Marginal Way and Somerset Street is proposed to consist of two northbound and southbound travel lanes, left turn lanes separated by a raised median, shared right turn lanes, bike lanes with buffers, and sidewalks on both sides.

The Somerset Street/Fox Street intersection is proposed to remain unchanged from a lane capacity perspective. Crosswalks are proposed on all intersection legs and bike boxes are proposed on Franklin Street. Bicyclists will be accommodated through variable means including bike lanes with buffers and shared lanes.

Franklin Street between Somerset Street and Oxford Street is proposed to consist of two travel lanes in each direction, bike lanes with buffers, and sidewalks on both sides.

The Lancaster Street Intersection is proposed to consist of right turn movements from Franklin Street. A raised median along Franklin Street will prohibit left turn movements.

The Oxford Street intersection is proposed to consist of right turn movements with Franklin Street. A raised median along Franklin Street will prohibit left turn movements. Crosswalks are proposed at the side streets and on the Franklin Street northbound approach. Bicyclists are accommodated through variable means including bike lanes with buffers and cycle tracks.

The Cumberland Avenue intersection is proposed to consist of three travel lanes on Franklin Street approaches (left, thru, thru-right lane), two travel lanes on the Cumberland Avenue approaches (left, thru-right lane). Crosswalks are proposed on all intersection legs and bike boxes are proposed on Franklin Street. Bicycles are accommodated on Franklin Street through means including bike lanes with buffers.

For Transit recommendations, the plan is proposed to establish a shuttle bus operating along Franklin Street between the park-and-ride lot northeast of the intersection of Franklin Street and Marginal Way and the Casco Bay Ferry Terminal south of Commercial Street. The route would operate every twenty minutes in each direction during METRO's hours of service, making local stops.

State Street and High Street Two-Way Conversion Study—This study consists of evaluating the feasibility of converting State and High Streets to two-way flow. Within the Bayside Study area, State Street and High Street would be converted to two-way streets. As part of the change, Park Avenue would require less travel lanes with expanded on-street parking.

Somerset Street Extension—The City is currently in the design and construction phase for the extension of Somerset Street from Elm Street to Hanover Street. This change will improve accessibility and street connectivity. A concept plan for Somerset Street/Kennebec Street between Hanover Street and Forest Avenue has been developed and the recommendation includes provision of space for the Bayside Trail and maintaining the existing one-way restriction.

Anderson Neighborhood Byway—The City is constructing multi-modal and stormwater infrastructure improvements along Anderson Street from Fox Street to Plowman Street. From a transportation perspective, the project generally consists of providing a sidewalk on the west side of Anderson Street, a sidewalk on Fox Street to Diamond Street, and pedestrian changes at the Anderson Street and Fox Street intersection, and intersections with Cove Street and Gould Street.

Back Cove South Storage Conduit Project—The City is currently developing design plans for the construction of a stormwater storage conduit under Marginal Way between Preble Street and the Portland Water District treatment plant at the east end of Marginal Way. Construction documents are scheduled for completion by the end of 2015 with construction set to begin in 2016. Leveraging this project with implementation of Marginal Way modifications will be determined.

Forest Avenue/I-295 Improvements—The MaineDOT recently constructed safety improvements at this interchange area that includes both bicycle and pedestrian facilities. The modifications are confined to the interchange area.

Marginal Way CSO Project—The City will be designing a sewer and stormwater separation project along Marginal Way between Forest Avenue and Preble Street. The project is scheduled for completion at the end of 2016.

North Boyd Street Path—Construction of a path on North Boyd Street between Fox Street and the Bayside Trail is proposed. The project also includes construction of a sidewalk (completed) along the north side of Fox Street between Diamond Street and Franklin Street.

Private Development Projects

- **Bangor Savings Bank**—Construction of a bank and office use at the former car wash site at 20 Marginal Way. The project will be reconstructing their street frontage.
- **Bayside Bowl Expansion**—The project has limited transportation changes with some sidewalk modifications and controlling rights for half of Lancaster Street.
- **Relocation of DPW**—Although not scheduled, the City envisions moving operations from Bayside.
- **Century Tire Redevelopment (45 Marginal Way)**—Construction of a retail project with both Marginal Way and Kennebec Street frontage improvements. Kennebec Street improvements consist of a shared-path along their frontage, and an interim cycle-track bicycle facility to Forest Avenue.
- **Midtown Project**—Significant transportation improvements are included with this project including:
  - reconstruct Somerset Street between Pearl Street and Elm Street;
  - install a traffic signal at the Marginal Way/Chestnut Street intersection;
  - create a Four-Way STOP intersection at Somerset Street and Pearl Street; and
  - change the Marginal Way approach to Franklin Street to a left lane, a through lane, and a right lane.
- **89 Anderson Street**—Residential project with frontage improvements only.
- **Bayside Anchor**—Residential project with frontage improvements only.
- **133 Washington Avenue/Avesta Housing Project**—Residential project with frontage and bus stop improvements.

3.0 IDENTIFY ISSUES AND OPPORTUNITIES

The Existing Conditions Analysis identified a number of issues and opportunities within the Bayside Study area that are summarized by the following categories.

3.1 Transportation Street Issues and Opportunities

Marginal Way Focus Area

Issues:

- The Marginal Way/Preble Street/Elm Street intersection is a large intersection with a priority for moving vehicles.
- Marginal Way High Crash Locations include the intersections at Franklin Street, Elm Street/Preble Street, and Forest Avenue/State Street and the roadway segment between Elm Street and Franklin Street.
- Marginal Way lacks a consistent roadway configuration and does not provide continuous bicycle and pedestrian facilities.
- The Marginal Way/Franklin Street intersection does not provide a safe pedestrian crossing from the Park & Ride Lot to either the south side of Marginal Way or across the Exit 7 Ramp.
- On-street large truck parking in East Bayside encroaches into the bike lane.
- The Forest Avenue/Marginal Way/State Street intersection lacks pedestrian crossings at all corners and the Forest Avenue approach at Kennebec Street has an undefined pavement area.
- The Franklin Street intersection has capacity problems.

Opportunities:

- Evaluate reducing the number of vehicle lanes at the Marginal Way/Preble Street/Elm Street intersection to facilitate a consistent street cross-section.
- Implement multi-modal improvements on Marginal Way.
- Improve pedestrian conditions at the Marginal Way/Forest Avenue/Kennebec Street/State Street intersection.
- Add crosswalk on all approaches at Franklin Street.
- Increase width of parking lanes to reduce encroachment into adjacent bicycle lane.

Preble and Elm Streets Focus Area

Issues:

- Lower connectivity and accessibility due to their one-way street configuration.
- Lack of safe bicycle and pedestrian facilities on Elm and Preble Streets between Marginal Way and Congress Street.

Opportunities:

- Create better bicycle and pedestrian travel.
- Reduce excessive vehicle speeding.
- Improve street connectivity and accessibility.
- Provide more parking.

Portland and Oxford Streets Focus Area

Issues:

- Poor and confusing east-west street connectivity/circulation.
- Difficult pedestrian crossings at Forest Avenue/Park Avenue/Portland Street due to long crossings, lack of crosswalks, vehicle turning conflicts.
- Bus/vehicle conflict condition on Portland Street between right-turning vehicles and buses departing curb area.

Opportunities:

- Improve east-west street connectivity/circulation .
- Explore reconfiguring Oxford Street as a two-way street.
- Evaluate a full Oxford Street vehicle connection at Franklin Street.
- Implement multi-modal/streetscape improvements on Portland Street.
- Reconfigure and improve pedestrian crossings at the Forest Avenue/Park Avenue/Portland Street intersection.

Pearl Street Focus Area

Issues:

- Poor north-south street connectivity.
- Traffic concentrates at Somerset Street.
- Lacks bicycle facilities.

Opportunities:

- Implement bike lane improvements.
- Improve north-south connectivity on peninsula: Between Marginal Way and waterfront.

Lancaster and Kennebec Streets Focus Area

Issues:

- Poor east-west street connectivity.
- No pedestrian crossings of Franklin Street near Lancaster Street where demand exists.
- Kennebec Street is not very functional for all modes.
- One-way flow between Elm Street and Chestnut Street and Forest Avenue and Brattle Street limits traffic circulation.

Opportunities:

- Improve east-west street connectivity.
- Connect Lancaster Street to Brattle Street.
- Evaluate a possible pedestrian crossing of Franklin Street at Lancaster Street.
- Retrofit Lancaster Street to be more usable.
- Retrofit Kennebec Street to be more usable.

East Bayside Focus Area

Issues:

- Cove and Diamond Streets lack sidewalks, curbing, and have poor access management conditions.
- On-street large truck parking in East Bayside encroaches into bike lane.
- Fox Street configuration between Anderson Street and Washington Avenue creates a narrow travel way.

- Poor pedestrian and bicycle connectivity at Tukey Street path to Anderson Street.

Opportunities:

- Create street configuration improvement options on key cross-streets to improve bicycle and pedestrian safety and connectivity.
- Reconfigure the Anderson Street/Plowman Street intersection.
- Prohibit parking on Fox Street in certain sections to reduce narrow travel way conditions.

Washington Avenue Focus Area

Issues:

- Poor bicycle and pedestrian safety and connectivity.
- Traffic safety and operations at the Washington Avenue/Fox Street/Walnut Street intersection.
- Safety and functionality at the Washington Avenue/Cumberland Avenue intersection.

Opportunities:

- Increase safety and access onto Washington Avenue at Fox Street/Walnut and at Cumberland Avenue.
- Create options on key cross-streets to improve bicycle and pedestrian safety and connectivity.
- Improve the configuration of the Washington Avenue/Cumberland Avenue intersection for improved pedestrian conditions.

3.2 Pedestrian/Bicycle Issues and Opportunities

Issue:

- Safety of and uncontrolled pedestrian crossings along Elm Street and Preble Street.

Opportunities:

- Install crosswalks at intersections, where needed.
- Install Rectangular Rapid Flashing Beacons at Bayside Trail crossings.
- Install 14’ wide block design crosswalk at Bayside Trail crossings.
- Install “Yield Here” signs and painted Yield Lines for vehicular traffic at Bayside Trail crossing.
- Consider a 4” (for minimal vehicular disruptance) raised tables at Bayside Trail crossings.
- Add bikes lanes on Preble and Elm Streets.
- Modify Preble and Elm to 2-way or reconfigure to one-way.

Issue:

- Safety and difficultly of crossing at the Marginal Way/Preble Street/Elm Street intersection due to large intersection design.

Opportunities

- Redesign intersection, tighten curbs where feasible.
- Remove center medians in all roads to help shorten crossing distances.
- Remove one through-lane on Marginal Way, east of intersection.
- Install bike lanes in all directions across intersection.

Issue:

- Safety and difficultly of crossing at the Forest Avenue/Park Avenue/ Portland Street intersection.

Opportunities:

- Install crosswalks at all legs of intersections.
- Redesign intersection, tighten corner curb radii where feasible.
- Remove center median in Marginal Way to help shorten crossing distances.
- Install 14’ wide block design crosswalk at Bayside Trail crossing of Forrest Avenue, when designed.

Issue:

- Undefined bicycle routes in upper Bayside for east and west travel.

Opportunity:

- Install “shared lane markings” signs on Oxford and Lancaster.

Issue:

- Undefined pedestrian crossings of Franklin Street near Lancaster and Oxford Streets.

Opportunities:

- Install vehicular and pedestrian improvements per the Franklin Street Study.
- Install crosswalks per the Franklin Street Study.

Issue:

- Lack of contiguous sidewalk in lower Bayside especially northeast of Franklin Street (see section 2.2.1.6).

Opportunities:

- Install crosswalks at intersections, where needed.
- Redesign intersection, tighten corner curb radii where feasible.

Issue:

- Inconsistent crosswalk markings.

Opportunity:

- Install block design crosswalks in all locations

Issue:

- Long wait times and cycle lengths at signalized intersections

Opportunity:

- Retime signalized intersections where possible to shorten wait times.

Issue:

- Large driveway openings in lower Bayside northeast of Franklin Street.

Opportunity:

- Reduce driveway widths or eliminate driveways, where feasible.

Issue:

- Lack of designated bicycle facilities on Elm and Preble Streets between Marginal Way and Congress Street.

Opportunities:

- Remove one travel lane on Preble Street and Elm Street.
- Install a bike lane with a buffer on both Preble Street and Elm Street.

Issue:

- Pedestrian and bicycle connectivity between the Tukey Street Path and Anderson Street.

Opportunities:

- Remove vertical granite curb at bottom of Tukey Street path and replace with a 10' curb ramp.
- Modify intersection of Tukey Street ramp and Anderson Street intersection.

Issue:

- On-street parking by large trucks blocks the bicycle lane on Marginal Way.

Opportunities:

- Install 10' wide truck parking lanes.
- Install bike lanes with markings, where necessary.

Issue:

- Lack of pocket parks and gathering spaces.

Opportunity:

- Continue to plan and build pedestrian pocket parks to serve as place-making and destinations.

Issue:

- Lack of access to Bayside Trail from adjacent businesses.

Opportunity:

- Improve access to the Bayside Trail by working with property owners to modify or remove fences.

3.3 Transit Issues and Opportunities

Issue:

- Route 8 operates a circuitous route with limited stop pairs and direct service. It traverses many one-way streets, which limits its serviceability in reverse directions. Ridership data shows relatively low ridership along the majority of the route, with the exception of the stop at Hannaford supermarket, which accounts for 21% of total boardings.

Opportunity:

- Evaluate the restructuring of Route 8 service to best meet the competing demands and needs of Bayside residents and visitors, and explore alternative routing on Route 8 to improve efficiency of overall operations, including shifting from one-way to two-way streets.

Issue:

- Route 8 lacks frequent service, and does not provide for peak hour service variations or evening service.

Opportunity:

- Determine service needs for frequency and off-peak hours of transit service.

Issue:

- The mobility impaired community relies heavily on Route 8 due to its proximity to social services, grocery stores, and the medical center.

Opportunity:

- Consider needs of mobility impaired community in alterations to, and opportunities to improve, transit service.

Issue:

- Bus stops lack visibility due to poor signage, consistency, as well as accessibility and amenities that create a comfortable and safe experience for riders.

Opportunity:

- Develop bus stop design guidelines to clearly define bus stops, improve operations, improve pedestrian connections, and integrate with other modes of transportation.

Issue:

- Parking and loading within bus stops is very common as parking is not prohibited in many stops, or often not enforced.

Opportunity:

- Refine bus stop regulatory requirements to reduce conflicts with parking.

Issue:

- Buses often encroach on driveway access/egress due to insufficient allocation of curb space.

Opportunity:

- Provide sufficient curb space to allow buses to pull to the curb and not block driveways.

Issue:

- Lack of priority measures for transit traveling through Bayside.

Opportunity:

- Utilize Preble and Elm Streets as bus priority corridor(s) relative to Peninsula Transit Study recommendations. Apply benefits and lessons

learned from Congress Street improvements to transit in Bayside, such as incorporating transit priority measures into existing and new roadway configurations.

Issue:

- As Bayside continues to develop, there is a lack of good north-south connections across Bayside.

Opportunity:

- Explore transit routing opportunities for potential new cross-connections of Franklin Street and Forest Avenue.

Issue:

- Inadequate transit TDM measures to make substantial mode shift to transit and discourage single occupancy vehicle trips.

Opportunity:

- Identify other more innovative transit TDM measures for developers to consider, that continue to support transit, but also improve operations, accessibility and rider amenities.

Issue:

- The Bayside study utilized manual ridership count data from 2013, which is based on limited observations of a typical day.

Opportunity:

- Automated Passenger Counters (APC) installed in the summer of 2015 will provide more detailed stop level boarding and alighting data in the very near future that will enable a better understanding of operations along METRO routes.

3.4 Land Use Issues and Opportunities

General Observations

- Bayside is still an affordable alternative compared to many neighborhoods in Portland in regards to housing and business development.
- The City has a controlling interest of large parcels throughout the study area, and therefore can work with the market to plan for a sustainable future for existing and future residents and business owners.
- "Streets" should be envisioned as a land use in Bayside. There is an opportunity to implement the City's Complete Street Policy, where land use and mobility are integrated to maximize economic development potential and leverage investments in upgrades to infrastructure.
- Existing underutilized buildings throughout the study area can be redeveloped for new uses, reducing the cost for the private sector and adding to the economic vitality and mix of uses in the area.
- There are numerous opportunities for infill development throughout Bayside – ranging from small lots to large consolidated parcels. The diversity of economic development and revitalization should provide for a healthy mix of new uses.
- Unlike some neighborhoods and buildings in Portland, many of the existing buildings / uses in Bayside are not contributing historic structures, providing more flexibility for adaptive reuse as well as streamlining the permitting process.
- There is a diversity of districts within Bayside, unique parcel sizes, land uses, building massings, and streetscape characteristics. These neighborhoods will ensure variety and vibrancy in Bayside and in turn maintain and create streets of varying character.
- The study area has had 0% to negative population growth between 2000- and 2010. In this time period new housing on Anderson Street, Bayside Village, Pearl Place, and Unity Village have been constructed, however there has still been an overall population decline according to statistics. New housing on Cumberland Avenue such as Chestnut Street Lofts and the Avesta housing at the corner of Cumberland and High Streets are located in ideal transition zones between Bayside and the more established downtown. As of the date of the Master Plan, the Midtown Project is scheduled to break ground.
- While it is always necessary to give a planning project a study area boundary, Bayside consists of many different types of interfaces with surrounding neighborhoods. These interfaces are not hard lines, but flow in the fabric, character, culture, and economy of the City.
- As new development blocks are created, as defined by the street grid, the overall block system can remain relatively consistent throughout Bayside, even if some of the blocks are comprised of one parcel or multiple parcels.
- The centerline of streets is typically the dividing line between districts. This policy might work at cross-purposes to Complete Street and Form Based Code approaches to mobility planning and urban design where streets and neighborhoods are considered in a holistic manner.
- Many street frontages, particularly in the flat areas of Bayside are lacking streetscape and urban forestry. Well-designed streets will be strategic infrastructure improvements on behalf of the private and public sector, which will in turn incentivize economic development.
- The City adopted the B7 Urban Commercial Mixed Use Zone and related standards in 2008 to supplant the Bayside Vision and other master plans for the area. These standards will guide growth in a positive manner and ensure vibrant public realms.
- While many consider Bayside to be a blank slate, it is comprised of established, emerging, and envisioned trends. The City should continue to foster these positive trends and work with homeowners, property owners, and businesses to make the area as vital as possible.
- The cost for street infrastructure and public realm improvements can be offset by strategically leveraging private-sector investments.

Marginal Way Focus Area

Issue:

- Some intersections along Marginal Way are not pedestrian oriented and framed by buildings, creating gateways to the downtown.
- Land values are still relatively affordable, impacting the need to build structured parking. Surface parking lots, such as at Trader Joes have a greater footprint than the building. Surface parking creates permanent gaps in the form of the city.

Opportunity:

- Promote public/private Investments in on-street and structured parking creating more dense development and an increased tax base. Implement revised B7 Standards in a consistent manner.

Issue:

- Sea level rise is an issue for parcels in the more flat areas of Bayside. While this does not directly influence land use, the cost of redevelopment of streets and parcels must take into consideration mitigation efforts.

Opportunity:

- Integrate sea level rise mitigation into all planning efforts and site design standards.

Issue:

- While some new development along Marginal Way addresses the street in a pedestrian-oriented manner, there are other developments that are more suburban in nature with parking placed between the building and the street. Current zoning provisions allow buildings to have parking and vehicles circulate between active pedestrian zones.

Opportunity:

- Tighten standards and policies promoting development that adds to urban character, strengthens pedestrian zones, and establishes a denser taxable pattern of development.

Issue:

- Marginal Way is a wide street with unlocked economic development.

Opportunity:

- Incentivize taller buildings (minimum four floors) along Marginal Way. Marginal Way is wide and taller buildings are appropriate for creating an urban scale and maximizing land values. Taller buildings will also require more parking, encouraging the development of structured parking.

Issue:

- Marginal Way east of Franklin Street does not reflect the urban design and economic development goals of the B7 District.

Opportunity:

- Allow Marginal Way to the east of Franklin Street to remain an incubator for different industrial / light manufacturing uses. However, new developments should address the street in a pedestrian-oriented manner.

Issue:

- Some existing development along Marginal Way does not meet the goals and standards of the B7 District.

- Apply existing and new standards consistently in order that site designs and building placements reinforce the pedestrian street experience – regardless if existing context is not pedestrian oriented.

Issue:

- Some Marginal way intersections have a suburban or strip mall appearance.

Opportunity:

- Assess the redevelopment potential and zoning standards of certain parcels in order to maximize the urban condition at key intersections, improve the pedestrian environment, and better define gateways to downtown Portland.

Preble and Elm Streets Focus Area

Issue:

- There are multiple parcels that are currently used for surface parking.

Opportunity:

- Encourage infill development on these parcels and plan for structured parking to absorb the loss of surface parking as well as absorb parking demand created by the new development.

Issue:

- Preble Street is a key gateway corridor to downtown, however the existing placement of buildings and underutilized lots do not maximize the potential of the area nor make a transition from regional access to the downtown.

Opportunity:

- New development and redevelopment should address the street to create a pedestrian-oriented environment and increase land values.. Ensure that new development meets the goals of the B7 District.

Issue:

- Elm Street is a key gateway corridor leaving downtown. New development and redevelopment should address the street to create a pedestrian-oriented environment and increase land values. Ensure that new development meets the goals of the B7 District.

Opportunity:

- New development and redevelopment should address the street to create a pedestrian-oriented environment and increase land values. Ensure that new development meets the goals of the B7 District.

Issue:

- West Bayside includes a concentration of necessary social service agencies. This type of land use is difficult to relocate or disperse. Bayside residents feel overburdened by the concentration.

Opportunity:

- Work with the agencies and neighborhood groups to develop a long-term plan that best integrates / addresses social issues by studying underlying causes, aligning public health and planning policies, and applying best management practices for the delivery of services.

Issue:

- There is the need to introduce more mixed-use development and affordable housing into the area.

Opportunity:

- Continue to target the DPW site and other parcels for mixed-use urban infill.

Issue:

- The limited availability of housing units is a key concern for Portland.

Opportunity:

- Expand both market rate and affordable housing stock by incentivizing mixed-use developments while maintaining existing housing stock. Incentivize developments with more than ten units to trigger Inclusionary Zoning.

Portland and Oxford Streets Focus Area

Issue:

- West Bayside includes a concentration of necessary social service agencies. This type of land use is difficult to relocate or disperse. Bayside residents feel overburdened by the concentration.

Opportunity:

- Work with the agencies and neighborhood groups to develop a long-term plan that best integrates / solves social issues through redevelopment and land use policies.

Issue:

- There is the need to introduce more mixed-use development and affordable housing into the area.

Opportunity:

- Continue to target the DPW site and other parcels for mixed-use urban infill.

Issue:

- The limited availability of housing units is a key concern for Portland.

Opportunity:

- Expand both market rate and affordable housing stock by incentivizing mixed-use developments while maintaining existing housing stock.
- Defined sense of place

Issue:

- West Bayside includes a concentration of necessary social service agencies. This type of land use is difficult to relocate or disperse. Bayside residents feel overburdened by the concentration.

Opportunity:

- Work with the agencies and neighborhood groups to develop a long-term plan that best integrates / addresses social issues by studying underlying causes, aligning public health and planning policies, and applying best management practices for the delivery of services.

Issue:

- There is the need to introduce more mixed-use development and affordable housing into the area.

Opportunity:

- Continue to target the DPW site and other parcels for mixed-use urban infill.

Issue:

- The limited availability of housing units is a key concern for Portland.

Opportunity:

- Expand both market rate and affordable housing stock by incentivizing mixed-use developments while maintaining existing housing stock. Incentivize developments with more than ten units to trigger Inclusionary Zoning.

Issue:

- The DPW site serves an important purpose, however the location is more ideally suited for mixed-use urban infill.

Opportunity:

- Continue to study the DPW site for mixed-use urban infill. This is City controlled land and can leverage potential public / private partnerships.

Issue:

- Is the current zoning in this area promoting the highest and best use for urban lands while meeting the Bayside Vision.

Opportunity:

- Study the possible expansion of the B7 Zone to from Lancaster Street south to Cumberland Street.

Issue:

- The limited availability of housing units is a key concern for Portland.

Opportunity:

- Expand both market rate and affordable housing stock by incentivizing mixed-use developments while maintaining existing housing stock.

Issue:

- Certain uses on Oxford, such as the moving / warehouse facilities are not the highest and best use for an urban setting.

Opportunity:

- Study redeveloping these properties into urban mixed-use sites with an increase taxable footprint.
- Is the structured parking at the corner of Chestnut and Oxford maximized to serve the neighborhood?

Opportunity:

- Study the redevelopment potential of the structured parking facility at Chestnut and Oxford to increase parking capacity as well as create liner buildings to promote economic development and better integrate the parking garage with the context.

Pearl Street Focus Area

Issue:

- Sea level rise is an issue for parcels in the more flat areas of Bayside

Opportunity:

- Integrate sea level rise mitigation into all planning efforts and site design standards.

Issue:

- Housing is an important land use in this area, particularly south of Oxford Street.

Opportunity:

- Maintain and expand both affordable and market rate units through policy initiatives and financial incentives.

Issue:

- Scrap yards and surface parking are impediments to growth.

Opportunity:

- Continue to work with landowners and businesses regarding long-term plans for the area. Develop area specific master plans to promote mixed-use economic development.

Lancaster and Kennebec Streets Focus Area

Issue:

- Sea level rise is an issue for parcels in the more flat areas of Bayside.

Opportunity:

- Integrate sea level rise mitigation into all planning efforts and site design standards.

Issue:

- The DPW site serves an important purpose, however the location is more ideally suited for mixed-use urban infill.

Opportunity:

- Continue to study redevelopment opportunities for the DPW site. Consider expanding the B7 Zone to include the DPW site. Consider potential public / private partnerships to facilitate appropriate redevelopment.

Issue:

- While the existing street grid creates connectivity, certain parcels in this area might be difficult to develop due to street alignments and the resulting parcel sizes.

Opportunity:

- Study the development potential and mobility implications of closing Kennebec Street between Chestnut and Pearl to allow for more efficient urban redevelopment.

Issue:

- Scrap yards and surface parking are impediments to growth.

Opportunity:

- Continue to work with landowners and businesses regarding long-term plans for the area. Develop area specific master plans to promote mixed-use economic development.

Issue:

- The Bayside Trail is not yet maximized for use.

Opportunity:

- Require strong connectivity to Bayside Trail as redevelopment occurs.

Issue:

- The buildings fronting Kennebec Street between Elm and Chestnut are currently used for low intensity uses.

Opportunity:

- Study adapting the buildings fronting Kennebec between Elm and Chestnut for more intensive urban uses.

East Bayside Focus Area

Issue:

- Sea level rise is an issue for parcels in the more flat areas of Bayside.

Opportunity:

- Integrate sea level rise mitigation into all planning efforts and site design standards.

Issue:

- There are certain Brownfield parcels that are currently used for surface parking, which may not be the optimal use for urban lands.

Opportunity:

- Proceed with the Brownfields Area Wide Planning Study. Work with landowners to leverage grants and investments to remediate Brownfields for mixed uses, not just surface parking or open space.

Issue:

- The IIb Zone does not allow for residential or retail uses.

Opportunity:

- Study if these limitations are helping incubate, rather than restrict new uses that are transforming the nature of the area.

Issue:

- Certain densities of residential use such as Franklin Towers are too urban for the land area, while residential developments such as Kennedy Park are too suburban in form and density.

Opportunity:

- Coordinate master planning efforts of The Portland Housing Authority properties to ensure optimum density as well reestablishing the urban street grid. The Franklin Street Study, The Bayside Transportation Master Plan, and the forthcoming East Bayside Brownfields Area Wide Planning Study, should also be coordinated with the long-term goals of the PHA to maximize potential of the area. Bayside Anchor is a good precedent for urban infill development in this area.

Issue:

- There is a general lack of recreational facilities in Bayside.

Opportunity:

- Maintain the Fox Street recreation field / facilities.

Issue:

- A lack of housing issues is a critical issue for Portland.

Opportunity:

- Maintain and expand both market rate and affordable housing stock, particularly south of Oxford Street and east of Anderson Street.
- Study the implications of allowing housing in the Industrial District. This is the only District in the study area that does not allow housing. The area is experiencing changes of use, including pedestrian oriented as well as incubator uses. Should housing be allowed on second floor and above if industrial uses are allowed on first floor?

Issue:

- East Bayside is a successful incubator for local businesses. This type of first-wave organic economic development is often displaced by larger development projects and an increase in rents.

Opportunity:

- Study the market, land use, and policy trends to understand how this area is thriving as an incubator zone. Potentially create a new District to protect and encourage the dynamic nature of this area.

Issue:

- Many streets in East Bayside are lacking appropriate pedestrian / complete street facilities.

Opportunity:

- Retrofit streets and intersections (such as the current work on Fox and Anderson) to create a safe and inviting environment.

Washington Avenue Focus Area

Issue:

- Washington Avenue provides direct access from I-295 to the downtown, however it is a mixed-use neighborhood, not a travel corridor such as Franklin Street. Some residents have expressed the concern that Washington Avenue is treated as an on / off ramp to I-295, impacting access to land uses.

Opportunity:

- Washington Avenue is a key gateway neighborhood and street to Portland. New development should reinforce the importance of the area as pedestrian-oriented and visually diverse.

Issue:

- Balance the need for parking and redevelopment along the Washington Avenue corridor, because structured parking will most likely built in this focus area.

Opportunity:

- Inventory surface parking lots in the area and identify potential infill opportunities. Inventory existing parking needs and the impact of build-out scenarios.

Issue:

- A lack of housing issues is a critical issue for Portland.

Opportunity:

- Maintain and expand both market rate and affordable housing stock.

Issue:

- Washington Street is now a destination neighborhood during the day and evenings throughout the week.

Opportunity:

- Develop policies to maintain the dynamic mix of uses along Washington Avenue while maintaining the capacity of the corridor as a connection between I-295 and downtown.
- Continue to encourage redevelopment north along Washington Avenue to I-295.

Issue:

- Pedestrian connectivity between East Bayside and Munjoy Hill can be improved.

Opportunity:

- Work with Portland Trails and other organizations to improve connectivity between Bayside and Munjoy Hill. Continue to make intersection, street, and sidewalk improvements to make Washington Street safer for pedestrians while improving connectivity between neighborhoods.

4.0 DESCRIBE FUTURE OBJECTIVE AND PURPOSE AND NEED

Coupled with significant ongoing development from the success of the **A New Vision for Bayside Plan** (2000), and the subsequent various requests by policy makers to address the growth of all modes of traffic in the neighborhood, it is clear that an updated transportation master plan for the area is needed. There are many ongoing studies or questions as to the potential for changes in the overall network grid of streets—reconnections to Franklin Street by streets long dead ended; a refined Marginal Way Master Plan to support multimodal and redevelopment efforts; two–way flow or one–lane configuration assessed for Elm Street and Preble Street; and, a continuous, two–way corridor along Oxford Street/Portland Street allowing travel from Forest Avenue to Washington Avenue. The City continues to view Bayside's future needs as a top priority. The purpose of this study is to consolidate all prior plans into a contiguous master transportation plan for the study area. The Purpose and Need for the Bayside neighborhood include the following:

Regional Considerations—Although the study area itself generally consists of local streets, Forest Avenue, Franklin Street, Marginal Way and Washington Avenue provide direct linkages with regional transportation assets, including I–295, Routes 1, 22, 302 and 26. More significantly, development in the Bayside area has resulted in a number of projects with a regional draw, including Trader Joe's, AAA Northern New England headquarters, Whole Foods, and a 12–story Intermed medical office facility. Between recent developments at Unity Village, Bayside Village, Pearl Place, and that proposed for Midtown, over 1,000 units of housing will likely be added since the first Bayside plan was proposed in 2000. This will add even more regional significance to this area, as it will have a significant new population base and economic development.

A Balanced Transportation System—One of the primary goals of this effort would be to continue the creation of a well–integrated urban street grid, consisting generally of two–way streets providing maximum access to development parcels, both existing and anticipated. The current one–way configuration in Bayside results in significant amounts of local traffic being routed to certain streets and away from others, resulting in an imbalance in flows and creating challenges to future development projects. This discontinuous network results in challenges for motor vehicle, transit, pedestrian, and bicyclists. A balanced transportation system would accommodate the needs of these users, as well as the local needs of motorists and commercial delivery services bicyclist access.

Economic Development—Bayside is currently an engine of economic growth, with tens of millions of dollars invested in new businesses and housing. However, travel and access to this area can be confusing for those not living nearby, regardless of mode. In addition, many parcels have access through a confusing truncated, or one–way street network, limiting their development potential. The outcome of this study might be to have a robust interconnected travel system for all users, allowing trips from one use to another to be shorter and less confusing than they are now. In addition, it would result in a scale of development compatible with the rest of the City as some of the multi–block parcels would be broken up by a more grid–like street system.

Transportation and Land Use—A major premise of this effort will be to directly connect land use and multimodal transportation access. A successful outcome of the project will be to increase the density and access of through streets, as well as reducing travel distance where one–way circulation and access restrictions are not needed. Potential changes will better serve an area with a myriad of development types and services and will add more diversity in the future. The deliverables of the project will be to provide concept–level designs of streets, interconnections and intersections, as well as major parcel configurations and land use recommendations for remaining open parcels. For one focus area (a portion of the Oxford Street/Portland Street segments), a Preliminary Design Report–level of detail will be prepared. The final product will also be informed by the Somerset Street Reconnection and Franklin Street Feasibility Phase II studies. While much of Bayside is evolving from a largely post–industrial past, areas adjacent to active urban centers will strive to create harmony with these existing facilities.

Environment and Energy—A comprehensive transportation plan for the Bayside area will allow for the continuation of transit–supportive mixed-use urban development, encouraging walking and biking, and reducing the tendency toward sprawl in more rural and suburban areas. Reconnecting the grid of streets and converting one-way streets to two-way streets wherever feasible will increase the location efficiency of Bayside, decreasing energy consumption and pollution by streamlining trips.

Complete Streets—A significant part of this work will be to examine the primary streets in Bayside to determine how they can be made into more Complete Streets—that is, to better serve all users of all ages, modes and abilities. This is in keeping with the City's transportation policies, and soon, its updated Technical Manual and Design Manual. Where feasible, the potential for better access of all types should be evaluated. An important aspect of Complete Streets is that they are designed to support the existing and future land use context. A key goal of this planning effort is to integrate land use and mobility in a seamless manner to achieve the desired function and character of each street and neighborhood within Bayside.

Street Elevations/Evacuation Routes—As part of the upcoming Somerset Street and Franklin Street projects, as well as ongoing development work and the City's commitment to addressing the impacts of climate change, the study will consider potential needs and issues associated with street elevations, particularly in the area bounded by Fox Street, Anderson Street, Marginal Way, Forest Avenue, and Lancaster Streets. As part of this work, discussion on revised evacuation routes may be considered as well. It should be noted that geotechnical explorations will soon begin on Somerset Street, and some will likely occur on Franklin Street, therefore, the study may benefit from additional detailed information.

Carrying Capacity/Development Potential—Since the original Bayside Plan, several hundred thousand square feet of development has occurred in this area, ranging from medical office, to student housing, to grocery and other retail uses. While the scale of development has been and continues to be significant, the type of development is trending more toward housing and less toward office uses than was expected in the original plans. This has resulted in different travel patterns and mode–shares than originally anticipated. Given the types of development now being proposed for the area, it is likely that this change will continue, which in turn will inform all aspects of the street system including street width, parking and intersection design.

The Project Purpose and Need was specifically defined as follows:

> The **Bayside Transportation Master Plan** will build on previous studies, recent and anticipated growth, and adopted zoning and standards, integrating mobility, transit, complete streets, and urban design, creating a strategic framework for neighborhood revitalization and leveraged investments.

5.0 ALTERNATIVE DEVELOPMENT AND RECOMMENDATIONS

5.1 Marginal Way Focus Area

5.1.1 Alternative Development

Changes to Marginal Way focus on implementing changes that provide a consistent roadway design—increase safety and balanced multi-modal conditions. A key factor in the evaluation of modifications was coordination with the City's Marginal Way Stormwater Storage Conduit project located in Marginal Way between Preble St and the Portland Water District treatment plant. That project is scheduled for construction in 2016-2017; recommendations need to fit this timeline from an implementation perspective. Draft plans from that project are provided in the Appendix. A summary of the alternative analysis process for development of improvements along Marginal Way are noted as follows.

Marginal Way (Roadway Segment)

From a capacity perspective, intersections dictate the number of lanes required on Marginal Way and based upon traffic analysis, one travel lane in each direction is sufficient to accommodate future traffic volumes. Given that the roadway segment of Marginal Way is assumed to have one travel lane in each direction, strategies to improve safety deficiencies was a focus. As noted in Section 2, Marginal Way has several High Crash Locations. Investigation of a buffered/protected bicycle lane was performed. This consisted of locating the bicycle facility along the curb, and using on-street parked vehicles and a buffer area as a way to protect cyclists. Based upon maintenance concerns from the MaineDOT, this design component was eliminated from consideration. In addition, recommendations investigated establishing consistent sidewalks and esplanade areas.

Marginal Way/Franklin Street Intersection

Investigation of options for providing improved pedestrian crossing from the northeast corner (Park and Ride Lot) to southeast and northwest corners, and coordinated with the long-term Franklin Street plan was performed. Coordination of the project with MaineDOT indicated concern with providing a crosswalk accross the I-295 Ramp approach. Accordingly, this crosswalk is not included as part of the recommended plan, but traffic conditions should be monitored following plan implementation to assess whether this crosswalk can be added in the future.

Marginal Way/Chestnut Street Intersection

A traffic signal is being installed as part of the Midtown Traffic Movement Permit and plans take this into account. The existing crosswalk with RRFB and refuge island will be removed and replaced with traditional signalized crosswalks. Crosswalks will be provided on all four legs of the intersection.

Marginal Way/Preble Street/Elm Street Intersection

The key alternative investigated for this intersection was the feasibility of removing one left-turn movement from Preble Street and thus allowing only one eastbound lane on Marginal Way. Refer to Section 5.1.4 for results of the traffic analysis. As indicated, the intersection will still operate acceptably from a level of service perspective, and thus recommendations include this change. Additionally, geometric modifications are included for improved pedestrian safety.

Figure 5-1: Marginal Way Focus Areas

Marginal Way/Forest Avenue/State Street/Kennebec Street

The key alternatives investigated for this intersection included the feasibility of providing an exclusive pedestrian phase and changing the lane assignment on Marginal Way to separate left, through, and right lanes. Given concerns by MaineDOT for changes to the Marginal Way approach, and recent changes at Exit 6 of I-295, improvements focus on the Forest Avenue/Kennebec Street intersection. The modifications improve overall pedestrian facilities for existing and the future Bayside Trail crossing. Refer to Section 5.1.4 for results of the traffic analysis.

5.1.2 Recommended Concept

The recommended concept plan provides a consistent roadway that provides quality conditions for all modes with **Table 5-1** noting how the modifications meet project goals.

Marginal Way

Figures 5-2, **5-3** and **5-4** illustrate the key elements of Marginal Way. Between Plowman Street and Cove Street two 10-foot travel lanes, two 10-foot truck parking lanes and two 6-foot bike lanes are recommended. Near the AAA/Napa Auto building, Marginal Way is recommended to be comprised of one 11-foot travel lane in each direction, a 12-foot center lane, two 5-foot bike lanes, an 8-foot parking lane on the south side and buffer areas for the bike lanes. Between Preble Street and Forest Avenue, Marginal Way is recommended to be comprised of one 11-foot travel lane in each direction, a 13-foot center lane, two 6.5-foot buffered bike lanes, 8-foot parking lanes on the both sides.

	Goals	Met/How
Proposed Recommendations	Increase safety and functionality for all modes at Preble/Elm, Forest/Kennebec, and Franklin intersections	Yes — Improvements at each of the noted intersections will improve safety and function.
	Implement Complete Streets improvements for the entire length of Marginal Way with more consistency	Yes — Consistent roadway section with bike lanes, additional crosswalks, and transit improvements are included.
	Create a new Pearl Street connection/intersection; consider potential for future transit connection on Pearl St	Yes — The plan recommends this connection as part of future redevelopment activities.

Table 5-1: How Marginal Way Improvements Meet Project Goals

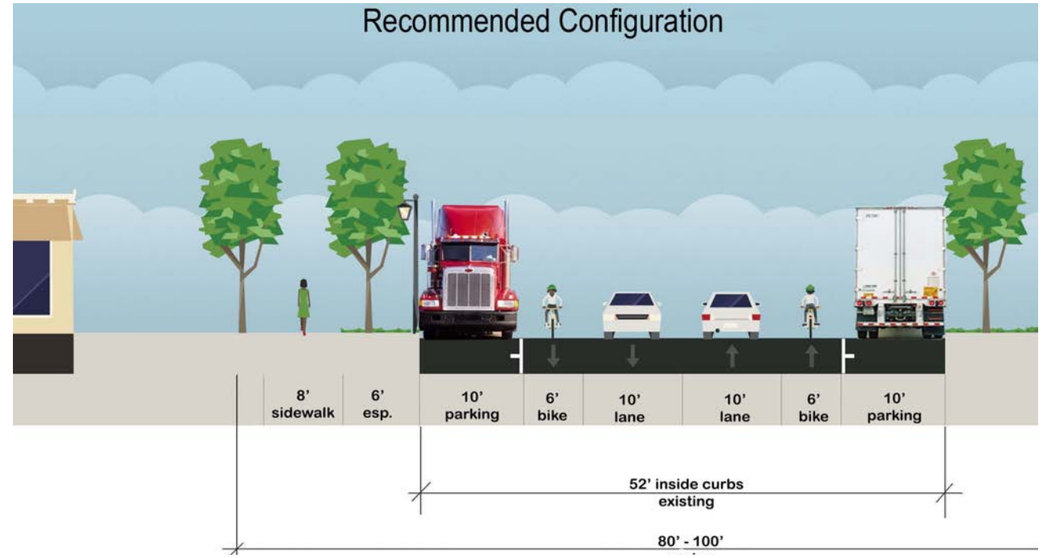


Figure 5-2: Marginal Way Plowman Street to Cove Street

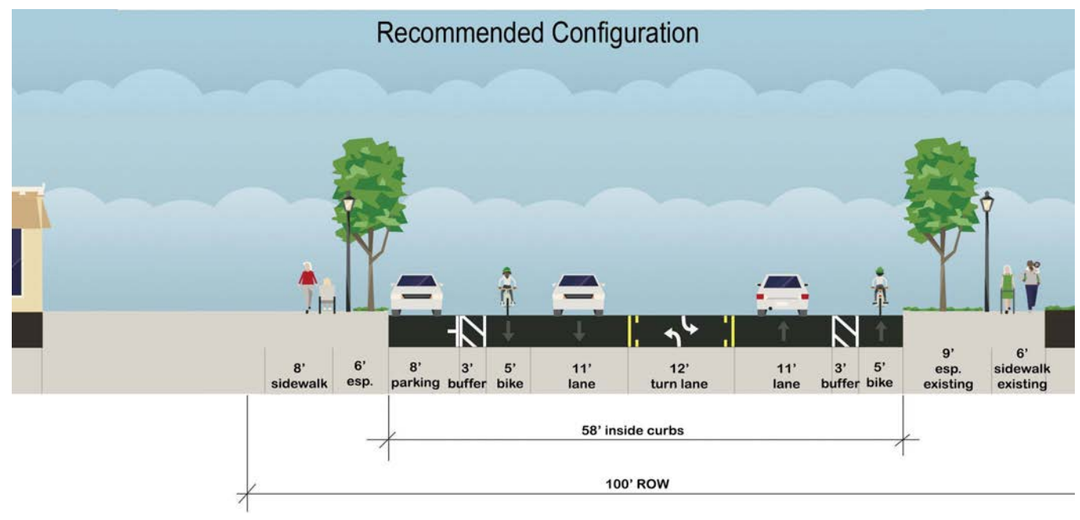


Figure 5-3: Marginal Way AAA-Auto Looking West

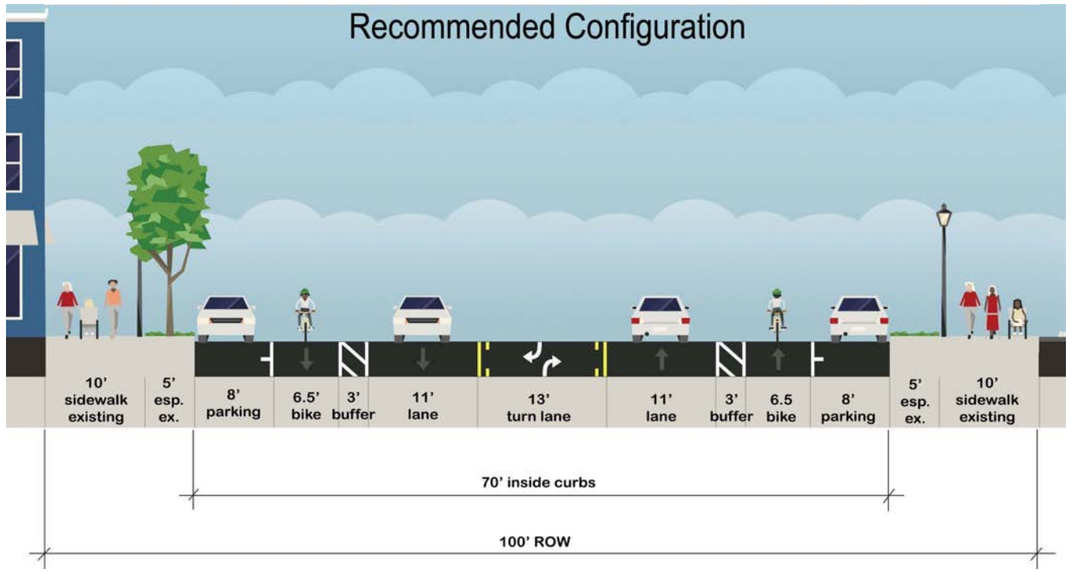


Figure 5-4: Marginal Way West of Gorham Savings Bank

Marginal Way/Franklin Street Intersection

The primary goal of this study intersection is to leverage the modification of Marginal Way with the Underground Stormwater Conduit Project (to be constructed in 2016/2017) to provide interim safety, capacity, and multimodal modifications until longer term changes from the Franklin Street Study can be implemented. Proposed key changes to the intersection are illustrated on **Figure 5-5** and include:

- **Additional Vehicle Capacity**
  - *Eastbound Marginal Way Approach*—remove island and change lane configuration to a left lane, a through lane and a right lane (it is currently a shared through/left lane and separate right lane).
  - *Westbound Marginal Way Approach*—remove island and change lane configuration to a left lane, a through lane and a right lane (it is currently a shared through/left lane and separate right lane).
- **Pedestrian Modifications**
  - Add a pedestrian crosswalk to the easterly Marginal Way intersection leg;
  - Add a sidewalk from Park and Ride lot to Franklin Street; add curb ramp on northeast corner; and
  - Modify the southerly Bayside Trail crossing (crossing Franklin Street northbound) from a two-stage crossing to a one-stage crossing (crossing can be made during a single WALK pedestrian phase).
- **Additional Modifications**
  - Westbound Marginal Way—tighten up the intersection and remove one departure lane.

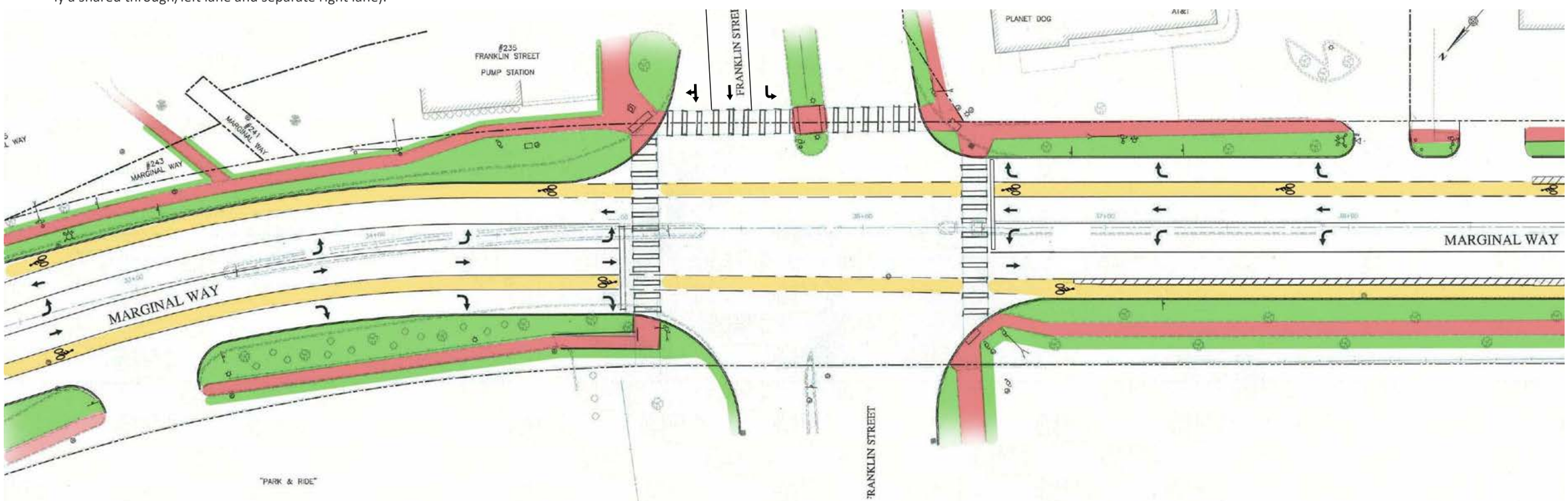


Figure 5-5: Marginal Way / Franklin Street

Marginal Way/Chestnut Street Intersection

To address the goals of the study, the recommendations consist of creating a consistent 3-lane roadway cross-section by eliminating one eastbound travel lane east of the intersection for safety benefits. This change is possible by providing only one left turn lane from Preble Street Extension to eastbound Marginal Way. Having a single left turn lane also allows a more efficient traffic signal with simplified/typical signal phase movements. Additionally, improved pedestrian conditions are recommended in the form of corner modifications that reduce crossing distance. **Figure 5-6** illustrates the modifications.

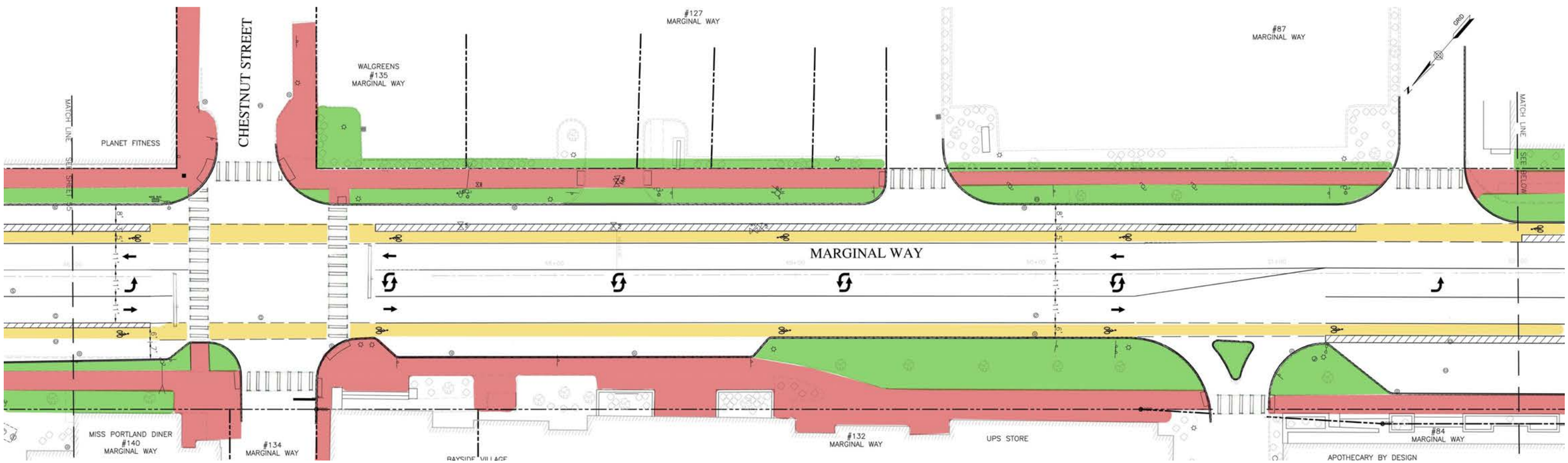


Figure 5-6: Marginal Way/Chestnut Street Intersection

Marginal Way/Preble Street/Elm Street Intersection

To address the goals of the study, recommendations consist of creating a consistent 3-lane roadway cross-section by eliminating one eastbound travel lane east of the intersection for safety benefits. This change is possible by providing only one left turn lane from Preble Street Extension to eastbound Marginal Way. Having a single left turn lane also allows a more efficient traffic signal with simplified/typical signal phase movements. Additionally, improved pedestrian conditions are recommended in the form of corner modifications that reduce crossing distance. **Figure 5-7** illustrates the modifications.

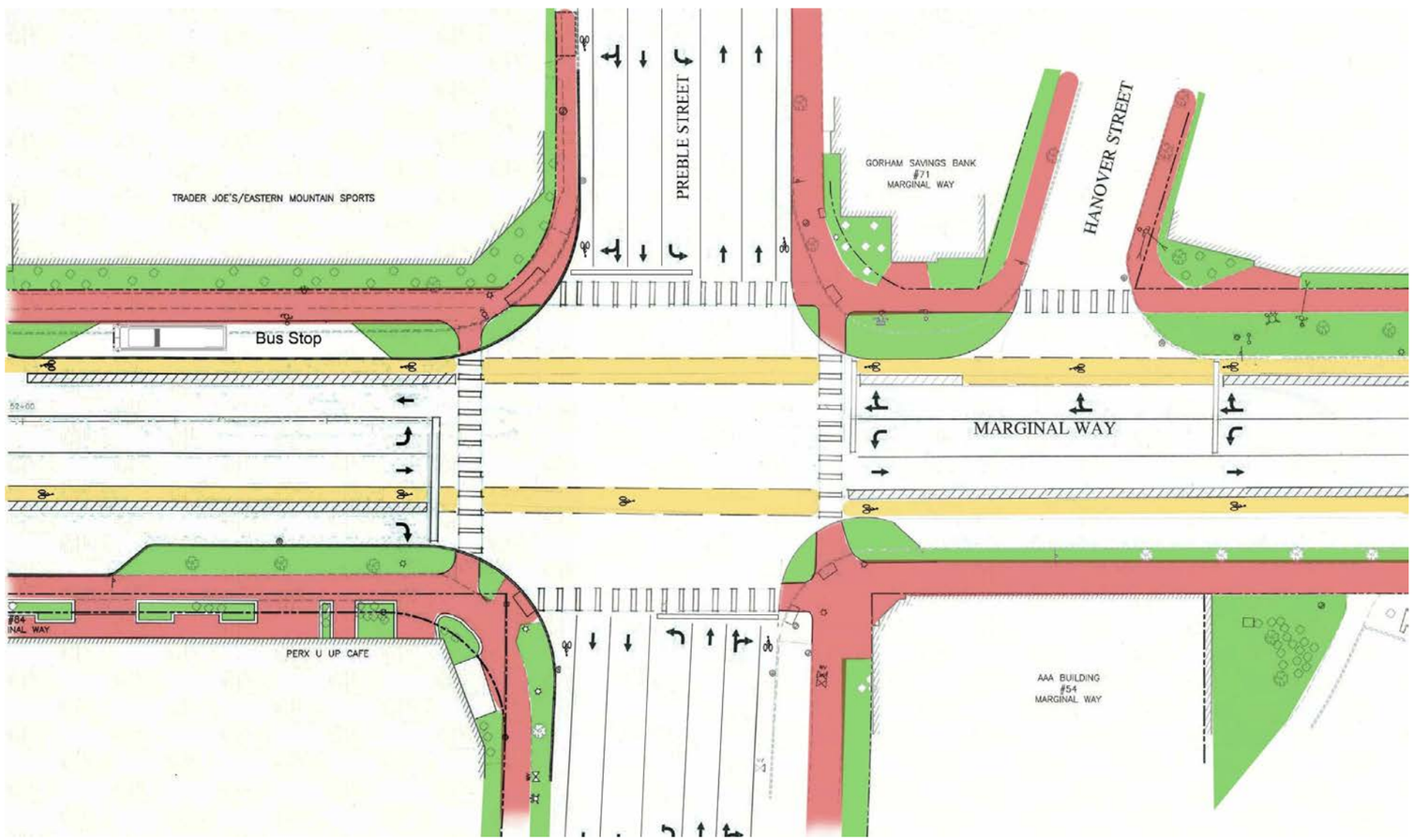


Figure 5-7: Marginal Way/Preble Street/Elm Street Intersection

Marginal Way/Forest Avenue/Kennebec Street Intersection

The primary goal of this study intersection is to provide safer and more direct pedestrian and bicycle movements through the intersection, building upon the recent changes to I-295 Exit 6 by MaineDOT in 2015. Proposed key changes to the intersection are illustrated on **Figure 5-8** and include:

- Forest Avenue Southbound—add crosswalk across Forest Avenue;
- Forest Avenue Northbound—formally define one through lane and one shared through/right lane; remove median; move stop bar forward; add bike lane;
- State Street Eastbound–no change;
- Kennebec Street—remove channelized island; tighten radius for Northbound Forest turning traffic (explore necessary radius for design vehicle [fire ladder truck, etc.];
- Marginal Way Westbound—no change; and
- Pedestrian—Realign existing crosswalks, add new crosswalk across Forest Avenue southbound approach; investigate feasibility of a diagonal crosswalk with exclusive pedestrian phase (see Traffic Modeling Section).

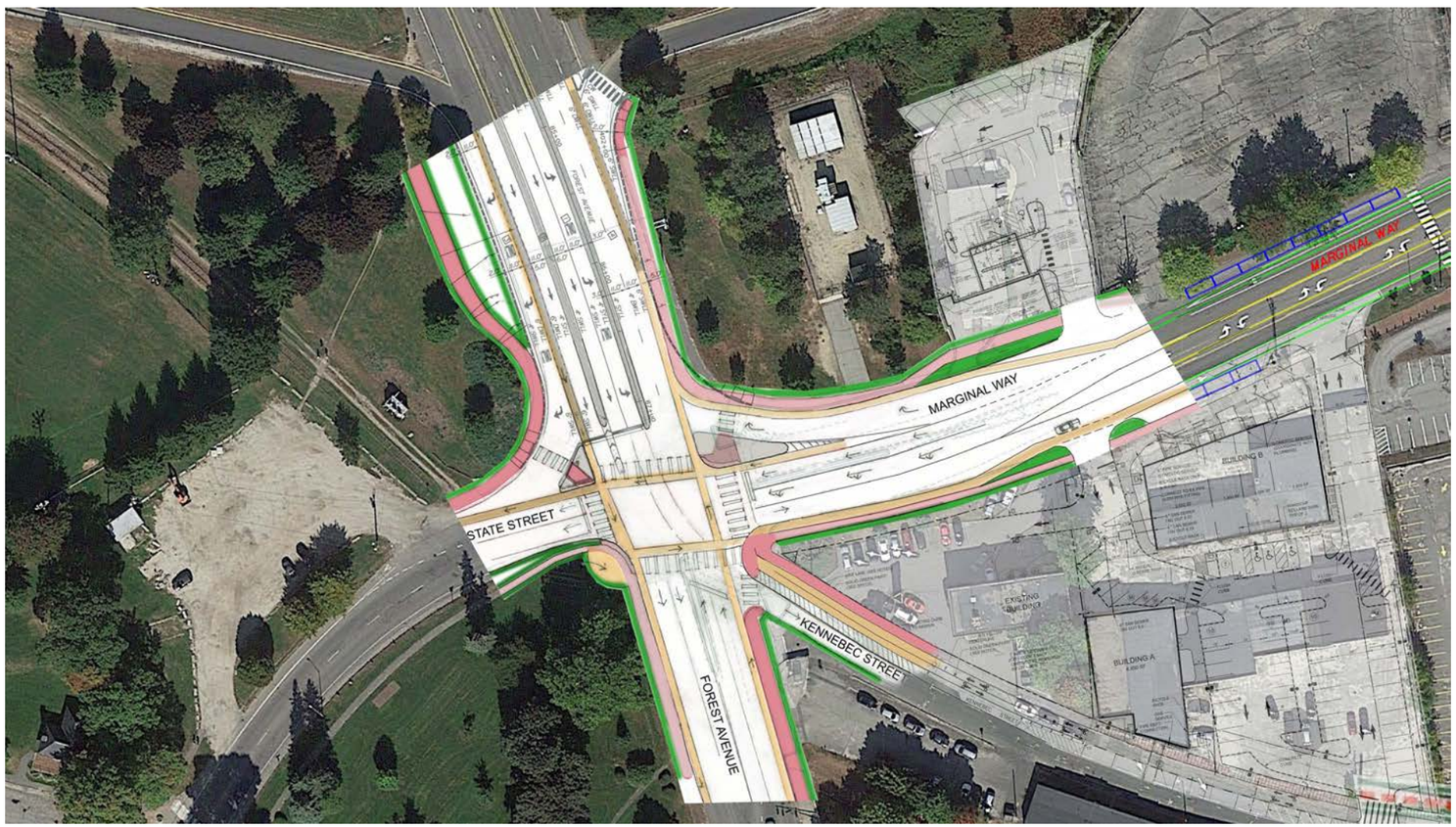


Figure 5-8: Marginal Way/Forest Avenue/Kennebec Street Intersection

5.1.3 Traffic Modeling

SimTraffic analyses at the major signalized intersections were performed to evaluate traffic operating conditions under existing and future traffic volume conditions. 2035 Design Year traffic volumes from the PACTS model was used and are depicted on **Figure 5-9**. A summary at each intersection follows.

Forest Avenue/Marginal Way/Kennebec Street/ State Street

Evaluations performed during the PM peak hour included (see **Table 5-2**):

- **A:** 2014 Existing Conditions;
- **B:** 2035 No-Build Condition—no changes made to the existing layout;
- **C:** 2035 Marginal Way proposed improvements (revised layout to separate left, through and right lanes); and
- **D:** 2035 Marginal Way proposed improvements with an exclusive pedestrian phase for a proposed diagonal crosswalk.

Model Assumptions:

- No vehicular timing changes between the three models—each assumed a 130 second cycle length; and
- Diagonal crosswalk crossing time was conservatively assumed to be 33 seconds in length; this required the overall cycle length to be increased from 130 seconds to 165 seconds.

Conclusion:

- Delays to NB Forest Avenue occur at the High Street intersection and model conclusions at Kennebec Street are not representative of field conditions;
- Changing the lane assignment on Marginal Way WB from a shared left/through lane, through lane and right lane to separate left, through and right lanes, does not cause significant degradation to the intersection level of service; and
- Creating a diagonal crosswalk and exclusive pedestrian phase reduces the level of service and increases delay at the subject intersection.

Recommendation:

- Forest Avenue Northbound Approach—formally define one through lane and one shared through/right lane; remove median; and move stop bar forward; and
- Kennebec Street—remove channelized island; tighten radius for northbound Forest Avenue turning traffic;
- Pedestrian—realign existing crosswalks, add new crosswalk across the Forest Avenue southbound approach and provide ADA compliant facilities and pedestrian signal equipment;
- Traffic Signal—equipment, phasing and timing will be modified; and
- Bicycling—bike lanes on Forest Avenue from Park Avenue to Marginal Way/State Street.

Scenario	PM Peak Hour LOS	PM Peak Hour Delay Sec
A: 2014 Existing Condition	C	22.6
B: 2035 No Build	C	31.0
C: 2035 Marginal Improvement	C	30.6
D: 2035 Marginal Way Improvements with Exclusive Pedestrian Phase	D	38.0

Table 5-2: Forest Ave/Marginal Way/Kennebec St. Level of Service Summary.

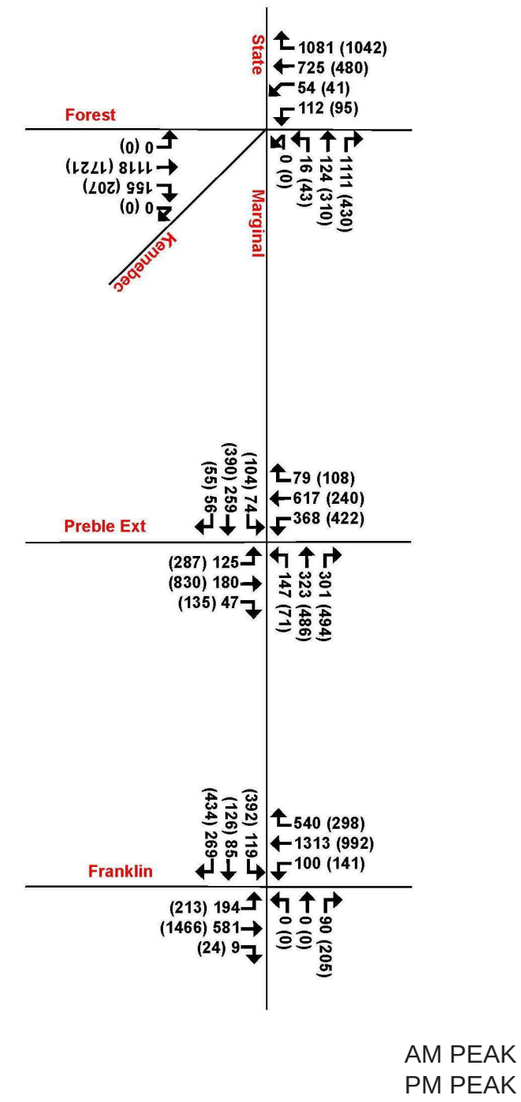


Figure 5-9: 2035 Peak Hour Traffic Volumes (Source: TYLI/City of Portland)

Franklin Street/Marginal Way

Evaluations performed during the PM peak hour included (see **Table 5-3**):

- **A:** 2014 Existing Conditions;
- **B:** 2035 No-Build Condition—no changes made to the existing layout. Timing is updated for the future conditions;
- **C:** Marginal Way proposed modifications (including crosswalk) with current crosswalk timings for the Franklin Street NB crossing; and
- **D:** Marginal Way proposed modifications with a one-stage crossing for pedestrians crossing Franklin Street NB.

Model Assumptions:

- Signal timings modeled were optimized;
- Left turns on Marginal Way were modeled as permissive-protected; and
- All crosswalks are assumed to operate concurrently. When the Franklin Street NB crosswalk was modified from a two-stage to a one-stage, the crossing time was increased to 35 seconds; this required an increased cycle length of 15 seconds and an increased Marginal Way green signal phase from 20 seconds to 45 seconds.

Conclusion:

- The increased capacity resulting from modifying the layout on Marginal Way eastbound and westbound approaches from shared left/through and separate right lanes to separate left, through and right lanes decreases the overall delay at the intersection; and
- Modifying the crosswalk across the northbound Franklin Street approach to a one-stage crossing and modifications made by increasing Marginal Way capacity results in an intersection that still operates acceptably and operates better than the No-Build (existing) conditions.

Scenario	PM Peak Hour - LOS	PM Peak Hour - Delay Sec
A: 2014 Existing Condition	E	64.8
B: 2035 No Build	F	96.2
C: 2035 Marginal Improvements (2-stage Pedestrian Crossing)	D	49.4
D: 2035 Marginal Way Improvements (1-stage Pedestrian Crossing)	D	49.7

Table 5-3: Franklin Street/Marginal Way/Level of Service Summary.

Intersection of Marginal Way/Preble Street/Elm Street

Evaluations performed during the AM and PM peak hours included (see **Table 5-4**):

- **A:** 2035 No-Build Condition; and
- **B:** 2035 Build Condition (with a new SB lane configuration of left lane, through lane, and a combined through/right lane).

Model Assumptions:

- Signal timings modeled were optimized;
- Left turns on Marginal Way were modeled as permissive-protected; and
- All crosswalks are assumed to operate concurrently.

Conclusion:

- During the AM peak hour, modifying the Preble Street SB lane configuration improves the overall operation of the intersection. During the PM peak hour, this modification has no effect on overall intersection level of service, although delay does increase slightly.

Scenario	AM Peak Hour - LOS	AM Peak Hour - Delay Sec	PM Peak Hour - LOS	PM Peak Hour - Delay Sec
A: 2035 No Build	C	29.0	D	44.7
B: 2035 Build	B	19.9	D	46.3

Table 5-4: Marginal Way/Elm Street/Preble Street. Level of Service Summary.

5.1.4 – Pedestrian and Bicycle/Streetscape**Marginal Way**

- Refer to **Figures 5-2 to 5-4** for specific bicycle lane and sidewalk recommendations;
- Tighten the driveways at Plowman Street and Marginal Way;
- Prohibit U-Haul parking of trucks or trailers on Plowman Street to improve visibility of Bayside Trail users;
- Provide shared lane markings (SLM) on roadway east of Plowman Street;
- Maintain straight-through bike and auto lanes on Marginal Way west though Franklin Street intersection;
- Incorporate the redesign of the Bayside Trail near Planet Dog (City/MaineDOT future project);
- Close excessive curb cuts and prohibit parking within public right-of-way;
- Provide a sidewalk and esplanade as depicted in illustrative cross-sections along the entire south side; and
- Add curb ramp to end of Tukey Street shared use path onto Anderson Street.

Forest Avenue/Marginal Way/Kennebec Street Intersection

- Incorporate crosswalks on all sides of intersection;
- Add enhanced bike lane (green) on Marginal Way to define street pace and right turning traffic;
- Redesign the entrance to Kennebec Street so there is just one curb opening; and
- Consider bollard style lighting on Forest just south of NB entrance ramp to I-295. Vehicle traffic is aggressive and not accustomed to cyclist and pedestrians here.

5.1.5 – Transit

The three bus stops along Marginal Way are recommended for slight adjustments to align with driveways, proposed curb cuts, and pedestrian crossings. As shown in **Figure 5-10**, the Trader Joe's bus stop is moved to the nearside of the driveway, the former Department of Health and Human Services stop is moved west to the farside of the driveway, and the Franklin Street bus stop is moved further west of the intersection to the far side of the driveway. Moving this stop further from the intersection of Marginal Way and Franklin Street will reduce conflicts with right turning vehicles.

The stop relocations would include providing an ADA-compliant landing area and aligning the stop with the on-street parking lane. The bus stop area should also be clearly defined by providing a bus stop sign at the front and a "no parking sign" at the back. Recommendations would be integrated into the Marginal Way Stormwater Storage Conduit project improvements. Bus stop amenities, such as shelters and benches, should be determined for each stop concurrently with long-term planning for Route 8.

5.1.6 – Land-Use

A redesigned Marginal Way will better support existing, new, and adaptive land uses:

- Apply existing and new standards in order that site designs and building placements reinforce the pedestrian street experience;
- Consider more strongly limiting suburban strip development. Revisit zoning and design standards that allow existing strip style development to be redeveloped in a similar manner;
- The intersection of Elm Street and Marginal Way is a good example of buildings defining the street, although ideally the EMS/Trader Joes building would be four floors and have entrances facing Marginal Way. Proposed improvements will improve pedestrian crossings;
- Incentivize taller buildings (minimum four floors) along Marginal Way. Marginal Way is wide and taller buildings are appropriate for creating scale and increasing land values;
- Allow Marginal Way to the east of Franklin Street to remain an incubator for different industrial/light manufacturing uses. However, new developments should address the street in a pedestrian manner; and
- Study the redevelopment potential of parcels such as Enterprise Rental in order to maximize the urban condition at key intersections, improve the pedestrian environment, and better define the gateway to downtown Portland.

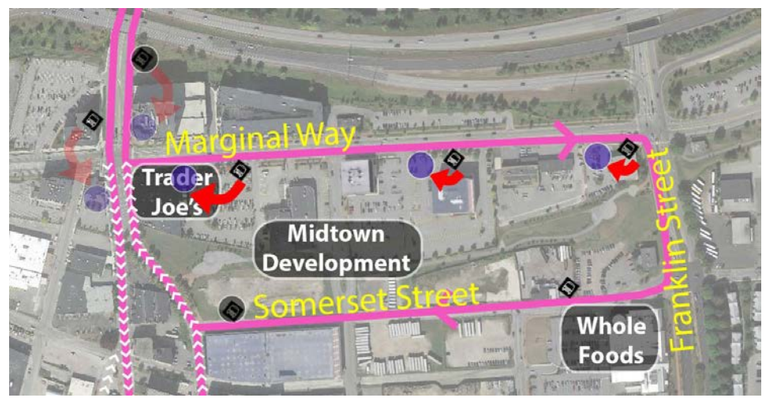


Figure 5-10: Recommended Stop Relocations along Marginal Way

5.2 Preble and Elm Streets Focus Area

5.2.1 – Alternatives Development

The issues with the Preble and Elm Streets corridor include low connectivity and accessibility due to the existing two-lane, one-way street configuration and the lack of bicycle and pedestrian facilities. The goal of this focus area is to create better bicycle and pedestrian travel, reinforce speed limits through the streets design, improve connectivity, and increase the on-street parking supply.

Three different alternatives were assessed relative to these goals and included:

- No-Build (leave the current one-way, two-lane configuration);
- Two-way configuration on Preble and Elm Streets; and
- One-way, one-lane configurations.

Table 5-5 summarizes alternative proposal cons. While the existing configuration has no net cost, it does not meet the goals for this focus area. Because of this, this alternative was eliminated from consideration and used only for future comparisons of traffic operations.

The two-way configuration was estimated to operate acceptably while expected to slow excessive vehicular speeds and allow for improved circulation and accessibility for local businesses, buses, and general traffic. While it does not allow for bike lanes (unless on-street parking is removed), this configuration would likely reduce wrong way bicycle movements. Drawbacks to this configuration include a reduction in parking; the highest number of conflict points due to turning movements at intersections, and the higher implementation cost.

The one-way, one-lane configuration was also shown to operate at acceptable levels of service and is expected to reduce the incidence of excessive speeding. While it does not address potential wrong-way bike movements, it does allow for on-road buffered bicycle lanes, increases pedestrian safety (pedestrians only cross one lane of traffic), and allows for new bus layout options. It offers no improvement to circulation and does not allow vehicles the opportunity to pass slower moving or turning vehicles; and, like the two-way configuration it increases the difficulty for vehicles to exit the Elm Street parking garage (an evaluation of the Elm Street garage was performed and modeling indicates acceptable levels of service will be provided). This option does, however, reduce the number of conflict points (turns at intersections) including one of the most common types of crashes in the corridor—improper lane change movements and allows for existing parking to be maintained (although possibly moved) and in some areas increased. There is a relatively low cost associated with implementing this configuration.

Because of the relatively low cost, the one-lane configuration option has the greatest benefits versus cost for all types of users, and accordingly is the recommended alternative. It is recommended that, as further development continues in Bayside, the two-way configuration be reconsidered for implementation.

	Pros	Cons
Existing Configuration	**Cost**: Lowest cost option **Vehicular Movements**: Few turn prohibitions **Vehicular Collision Conflict Points**: Relatively small number of possible conflict points **Accessibility and Circulation**: Ability to pass slow moving or turning vehicles due to two-lane configuration	**Bicycle**: • No on road bicycle accommodations • Does not correct wrong-way bicycle movements **Pedestrian**: No change in pedestrian safety **Accessibility and Circulation**: Poor traffic access and circulation **Parking**: No change **Transit**: No change in bus circulation
Two-Way Configuration	**Bicycle**: Eliminates wrong-way movements **Accessibility and Circulation**: • Allows traffic to circulate without one-way street constraints • May reduce the incidence of speeding when compared to current one-way two-lane configuration **Transit**: Improves service to METRO Pulse and bus circulation	**Cost**: High cost to implement **Bicycle**: No on road bicycle accommodations unless on-street parking is removed **Pedestrian**: Some improvement in pedestrian safety due to elimination of dual threat for crossing two one-way travel lanes **Vehicular Movements**: Turn prohibitions may be necessary at Congress St **Vehicular Collision Conflict Points**: Highest number and severity of possible conflict points **Accessibility and Circulation**: • No ability to pass slow moving or turning vehicles • Difficult to exit the Elm Street parking garage **Parking**: Reduction in parking
One-way, One-lane Configuration	**Cost**: Relatively inexpensive cost to implement **Bicycle**: On road buffered bicycle lanes **Pedestrian**: Increase in pedestrian safety due to less travel lanes to cross new bus layout options **Accessibility and Circulation**: No reduction in capacity at Marginal Way, Cumberland, and Congress Streets **Vehicular Movements**: Few turn prohibitions **Vehicular Collision Conflict Points**: Smallest number of possible conflict points **Parking**: Maintain and possibly increase on-street parking **Transit**: Elm Street improved at Pulse	**Bicycle**: Does not correct wrong way bicycle movements **Accessibility and Circulation**: • No improvement • No ability to pass slow moving or turning vehicles • Reduction in overall corridor capacity • Difficult to exit the Elm Street parking garage **Transit**: No change in bus circulation

Table 5-5: Preble/Elm Streets/Alternative Pros/Cons Comparison

5.2.2 – Recommended Concept

Under the recommended one-lane configuration, two lanes will continue to be provided departing the Marginal Way intersection traveling southerly on Preble Street. One of the travel lanes will transition to a left-turn lane turning onto Somerset Street (the City is expected to be constructing this roadway segment between Preble and Elm Streets). Special advisory signing is suggested for the change from a through lane to a left lane. Approach lane capacity reductions are not proposed on Cumberland Avenue at Preble and Elm Streets. The lane configurations are recommended to change to a left lane and a shared through/right lane versus two general purpose lanes on both Preble and Elm Streets. Intersection level of service is projected to be acceptable. No changes to approach lanes are proposed for Preble Street at Congress Street and Elm Street at Marginal Way. Refer to the following section for level of service results. **Table 5-6** notes how the proposed concept meets project goals.

In general, Preble Street has a wider roadway width than Elm Street with 37 feet of curb-to-curb width. The recommendation includes 8-foot parking lanes next to the curb on both sides, a 12-foot travel lane, and a 6-foot bike lane with a 3-foot buffer separating cyclists from parked vehicles. **Figure 5-11** depicts this concept.

Elm Street has a narrower roadway width of 32 feet curb-to-curb width on average. The long term recommendation includes an 8-foot parking lane on the easterly side, a 13-foot travel lane and a 5-foot bike lane buffered by 3 feet of striping on both the travel lane and parking lane sides. **Figure 5-12a** depicts this concept. The short-term recommendation is to maintain two travel lanes but add Shared Lane Markings and a parking lane line adjacent to the on-street parking. **Figure 5-12b** depicts this concept.

Figures 5-13 through 5-15 illustrate the layout of the recommended plan.

	Goals	Met/How
Proposed Recommendations	Create better bicycle and pedestrian travel	**Yes** — Bike lanes added and less travel lanes to cross for pedestrians.
	Reduce speeding	**Yes** — Reduced speeds are possible with less travel lanes.
	Improve connectivity	**No**
	Provide more parking	**Yes** — Approximately 46 new spaces created.

Table 5-6: How Preble/Elm Streets Modifications Meet Project Goals

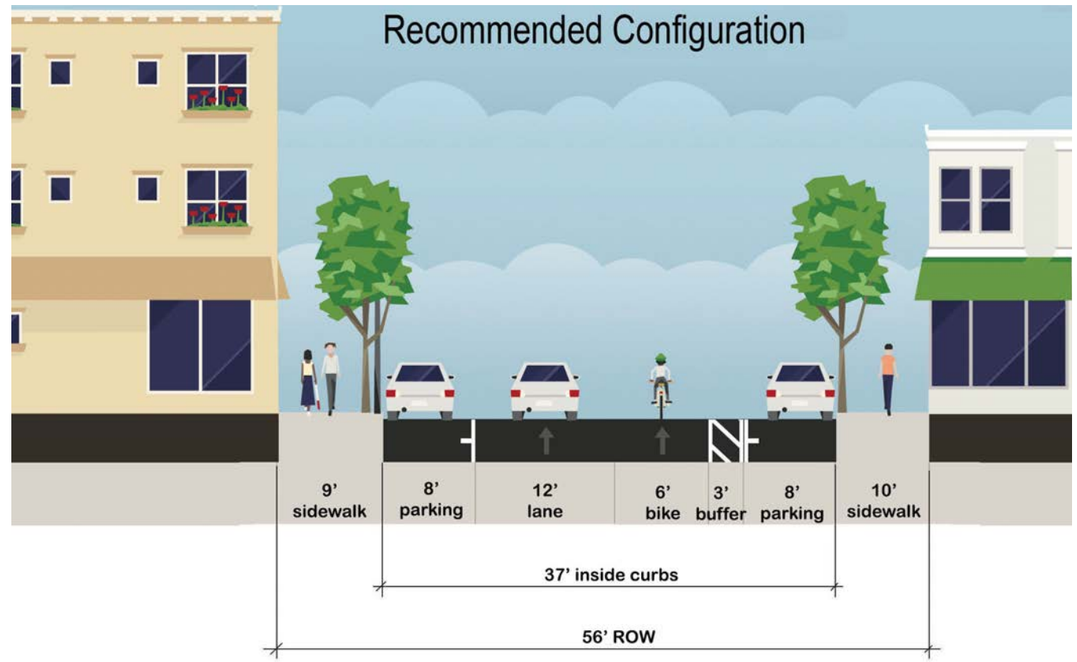


Figure 5-11: One-way Preble Street at Resource Center - South

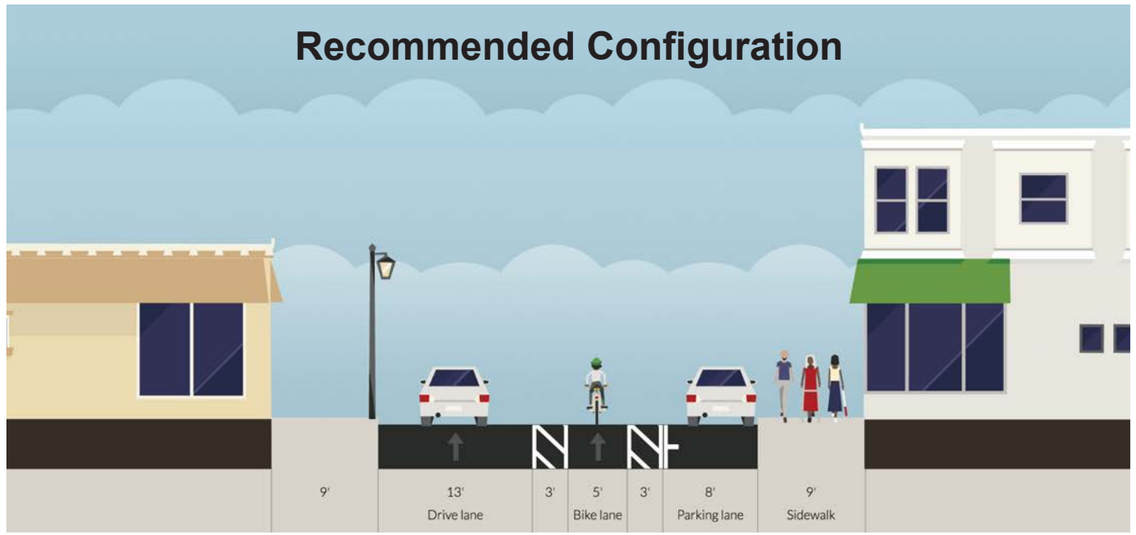


Figure 5-12a: Long-Term Recommendation. One-way Elm Street Near Lancaster Street - North

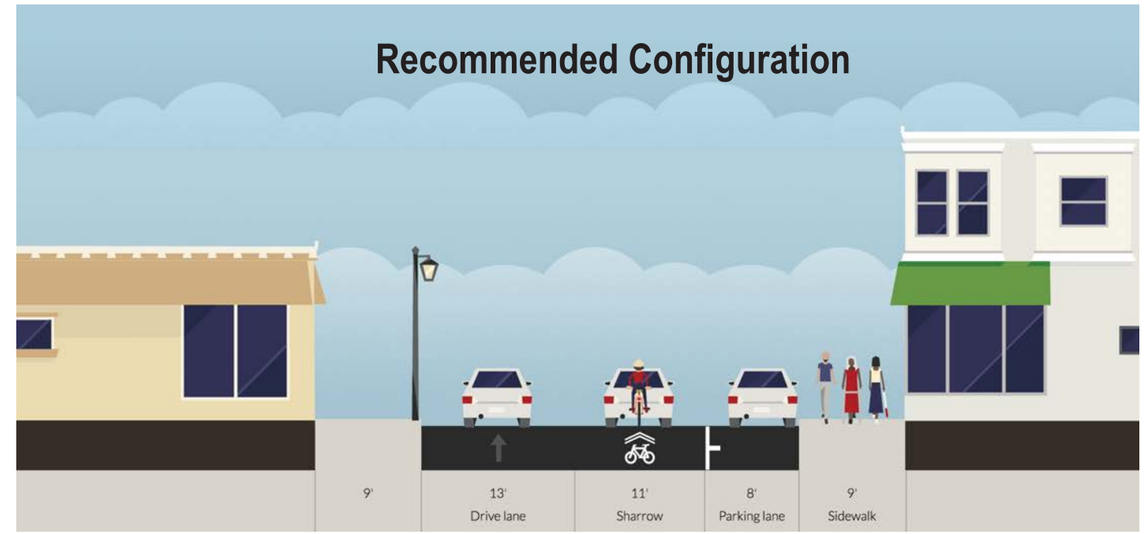


Figure 5-12b: Short -Term Recommendations. One-way Elm Street Near Lancaster Street - North

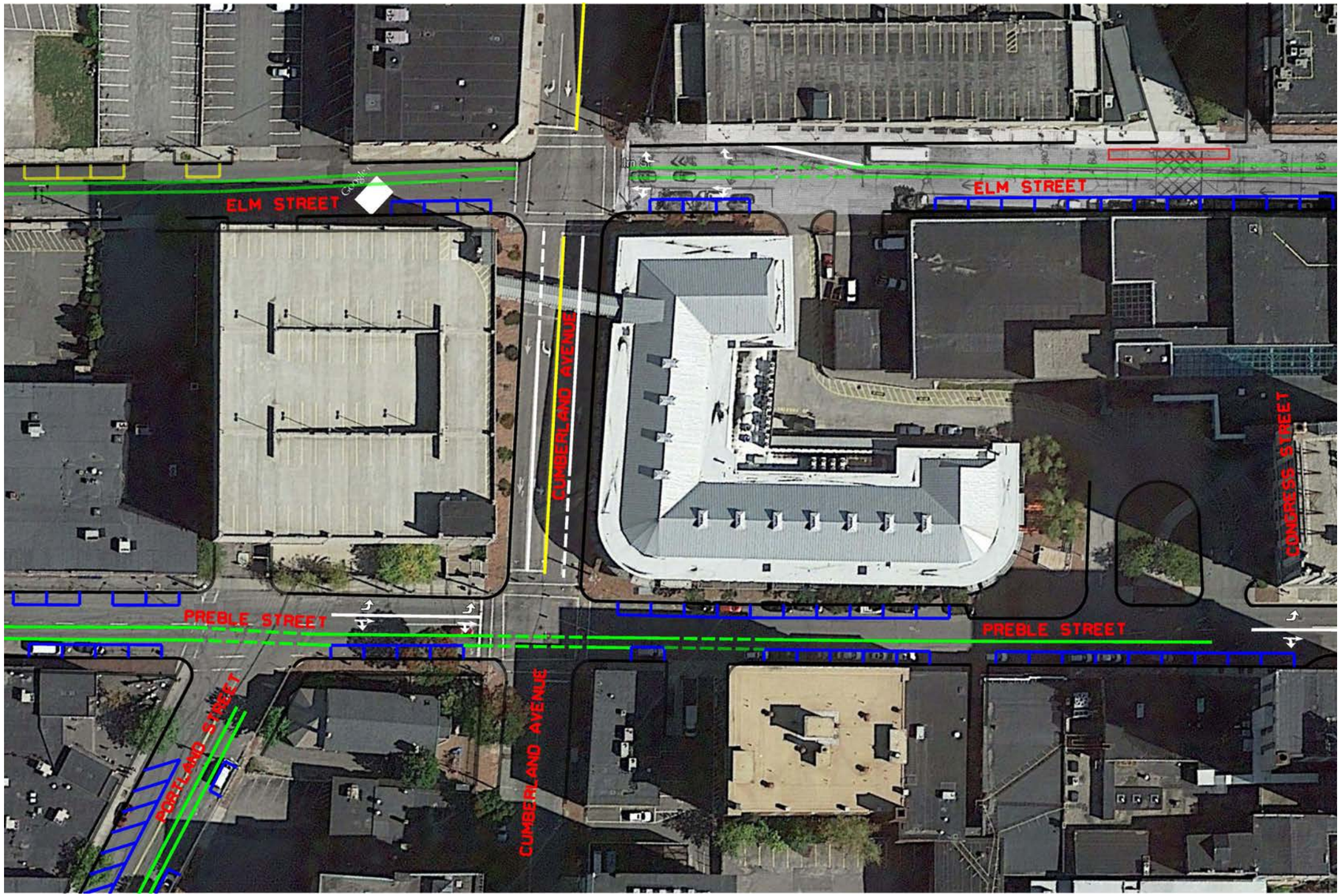


Figure 5-13: Section 1 of 3 – Preble and Elm Street - Long Term

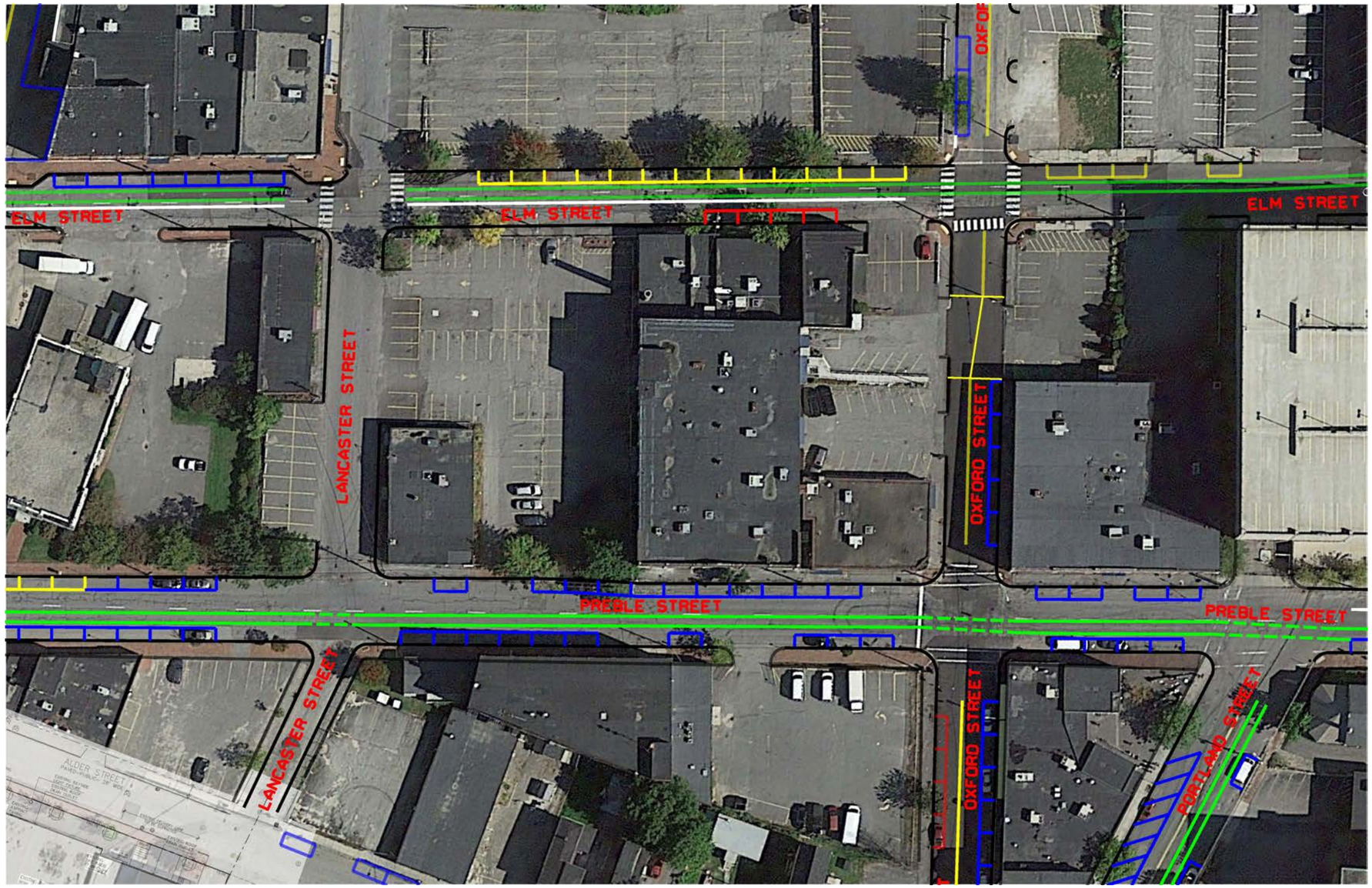


Figure 5-14: Section 2 of 3 – Preble and Elm Street - Long Term

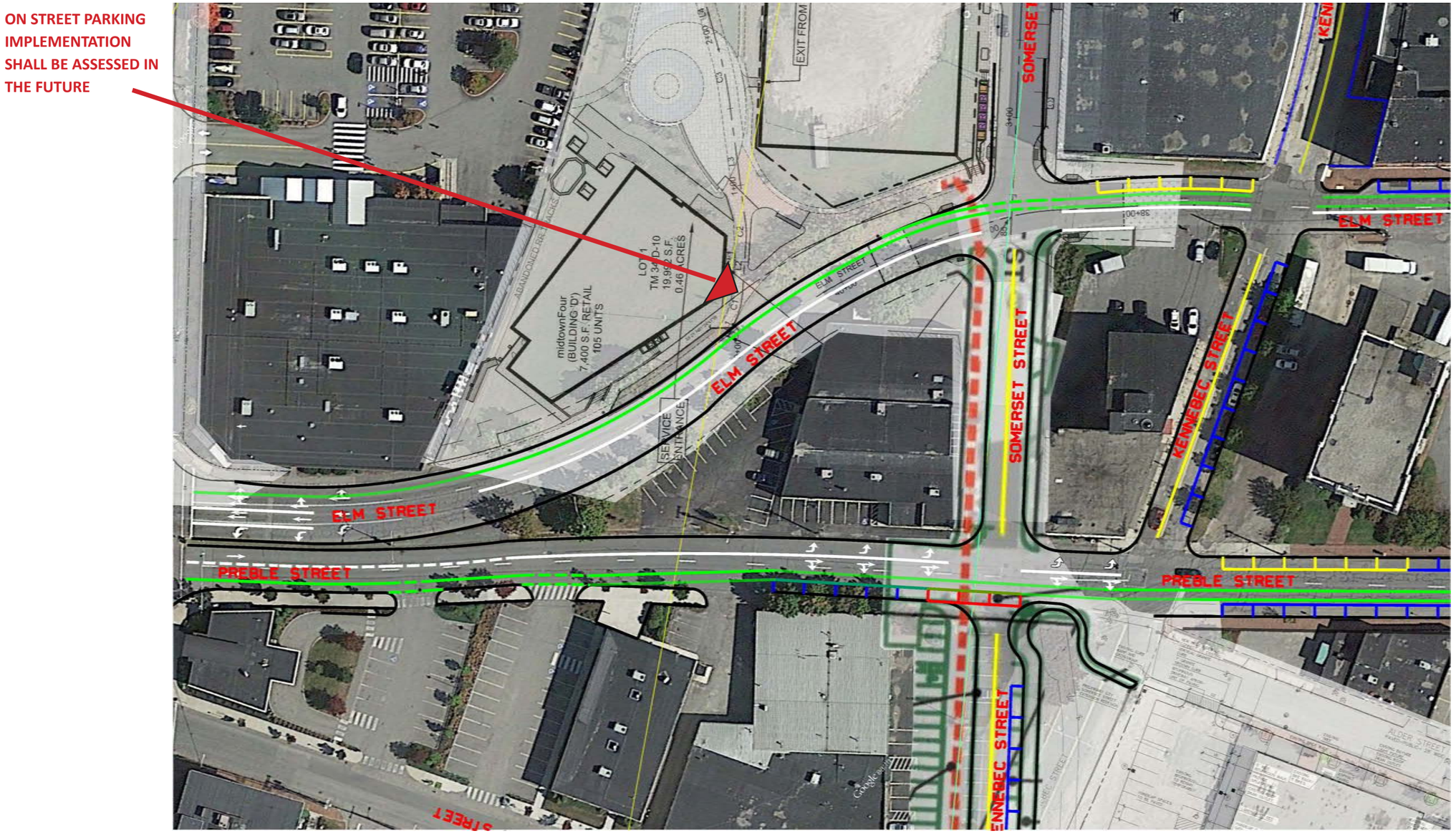


Figure 5-15: Section 3 of 3 – Preble and Elm Street - Long Term

5.2.3 – Traffic Modeling

An evaluation of traffic operating conditions was performed to determine if the noted modifications would produce acceptable traffic flow. In order to evaluate operations, both streets from Marginal Way to Congress Street were modeled and simulated in Synchro/SimTraffic. The volumes used were forecasted to the 2035 design year using the PACTS model. The corridor was modeled for both the 2035 No-Build and proposed 2035 Build scenarios during the AM and PM peak hours. Intersection signal timings were optimized. From the results of the analysis provided below, the one-lane scenario outlined in the previous figures operates acceptably through 2035.

Tables 5-7 and **5-8** presents the results of the analysis.

5.2.4 – Pedestrian and Bicycle

Preble/Elm Streets

- Refer to **Figures 5-13, 14, 15** for specific bicycle lane and sidewalk recommendations; and
- Connect Bayside Trail across Preble and Elm via the Somerset Street reconstruction with 16-foot wide crosswalk and wide curb ramps. Consider a Rectangular Rapid Flashing Beacon at crossing and review corridor lighting.

	INTERSECTION OF PREBLE STREET AND: AM PEAK (PM PEAK)									
	LANCASTER STREET - LOS	LANCASTER STREET - Delay Secs	OXFORD STREET - LOS	OXFORD STREET - Delay Secs	PORTLAND STREET - LOS	PORTLAND STREET - Delay Secs	CUMBERLAND AVENUE - LOS	CUMBERLAND AVENUE - Delay Secs	CONGRESS STREET - LOS	CONGRESS STREET - Delay Secs
2035 NO BUILD	A (A)	1.0 (0.6)	A (A)	0.6 (0.9)	B (A)	11.7 (1.6)	B (B)	13.0 (10.5)	B (A)	10.7 (9.9)
2035 BUILD (One Lane)	A (A)	1.2 (0.6)	A (A)	0.7 (1.0)	B (A)	10.5 (1.5)	B (B)	13.7 (11.3)	B (A)	10.9 (10.4)

Table 5-7: Preble Street Intersection Level of Service Summary

	INTERSECTION OF ELM STREET AND: AM PEAK (PM PEAK)							
	LANCASTER STREET - LOS	LANCASTER STREET - Delay Secs	OXFORD STREET - LOS	OXFORD STREET- Delay Secs	CUMBERLAND AVENUE - LOS	CUMBERLAND AVENUE - Delay Secs	CONGRESS STREET - LOS	CONGRESS STREET - Delay Secs
2035 NO BUILD	A (A)	1.6 (1.3)	A (A)	0.2 (0.5)	B (B)	10.9 (16.6)	A (A)	1.8 (2.8)
2035 BUILD (One Lane)	A (A)	1.6 (2.8)	A (A)	0.2 (0.8)	B (B)	11.0 (19.1)	A (A)	1.7 (3.2)

Table 5-8: Elm Street Intersection Level of Service Summary

5.2.5 – Transit

Several bus stop relocations are proposed along Preble and Elm Streets. The stops on Preble Street Extension are recommended to be relocated closer to the activity centers in Bayside. As displayed in **Figure 5-16**, the southbound Preble Street and AAA stop is moved to the far side of Marginal Way and the northbound Preble and Marginal Way stop is moved from the I-295 overpass south toward Marginal Way. This will help riders more easily reach destinations near the start or end of their trip.

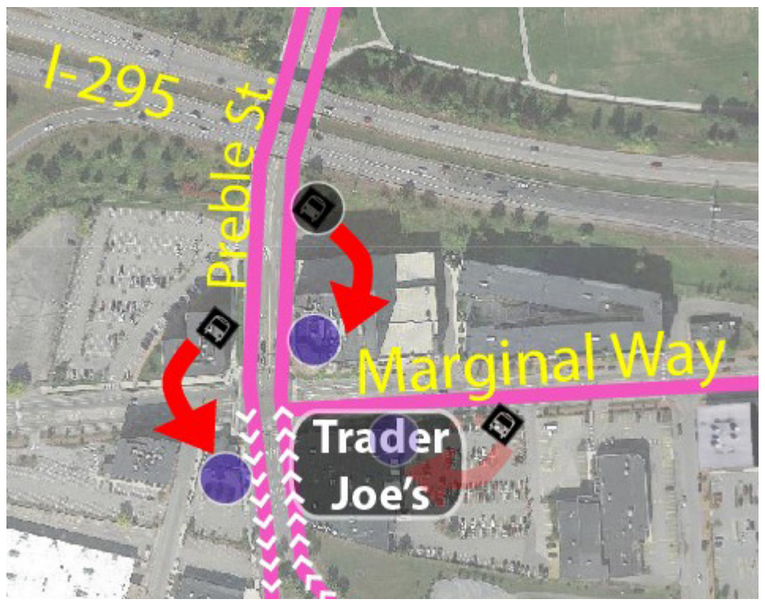


Figure 5-16: Relocation of Preble Street Extension stops closer to Marginal Way

Both stops were relocated to the far side of the intersection with Marginal Way as this improves pedestrian safety by locating pedestrian crossings behind the bus. The relocation may require coordination with adjacent property owners to accommodate the existing ambulance bay at InterMed Offices.

As **Figure 5-16** shows, further south on Preble Street, there are proposed modifications to several bus stop locations:

- The Preble Street and Lancaster Street stop is recommended for removal due to its proximity to the relocated Preble and Marginal Way Stop.
- The Preble Street and Cumberland Avenue bus stop is shifted south towards Congress Street to provide curbside access for buses turning left onto Preble Street. Adding a curb extension so that the bus may stop in a travel lane with passengers waiting a greater distance from adjacent buildings is recommended as adjacent property owners have expressed concern over passengers waiting near buildings. A level ADA compliant landing area as well as a sufficient bus stop length should also be provided to avoid conflicts with parking, loading, and driveways. An example of how a curb extension can improve bus stop operations is shown in **Figure 5-17**.

Figure 5-17: A curb extension on Route 39/Centre Street in Boston improves bus operations and provides additional space for amenities on a street with narrow sidewalks. This application could be used on Preble Street near Cumberland Avenue.

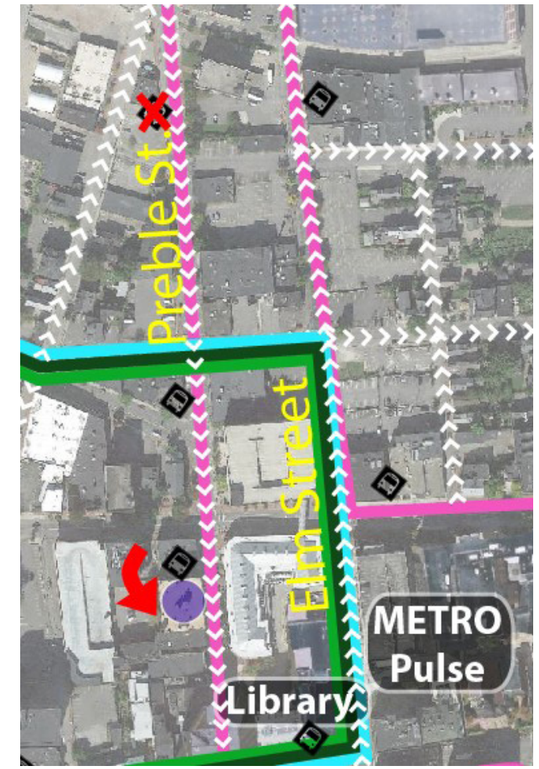


Figure 5-18: Relocation and removal of bus stops on Preble Street

There are no bus stop relocations proposed on Elm Street, also shown in **Figure 5-18.** Providing bus berths at Elm Street and METRO Pulse is recommended to improve bus operations. At lesat three bus berths should be provided for METRO's four active routes, plus an additional bus berth closer to Congress Street for bus layovers. The placement and design of bus berths should consider the fire lane, parking garage, and driveway access along Elm Street, as there are many uses and functions, as shown in **Figure 5-19.**

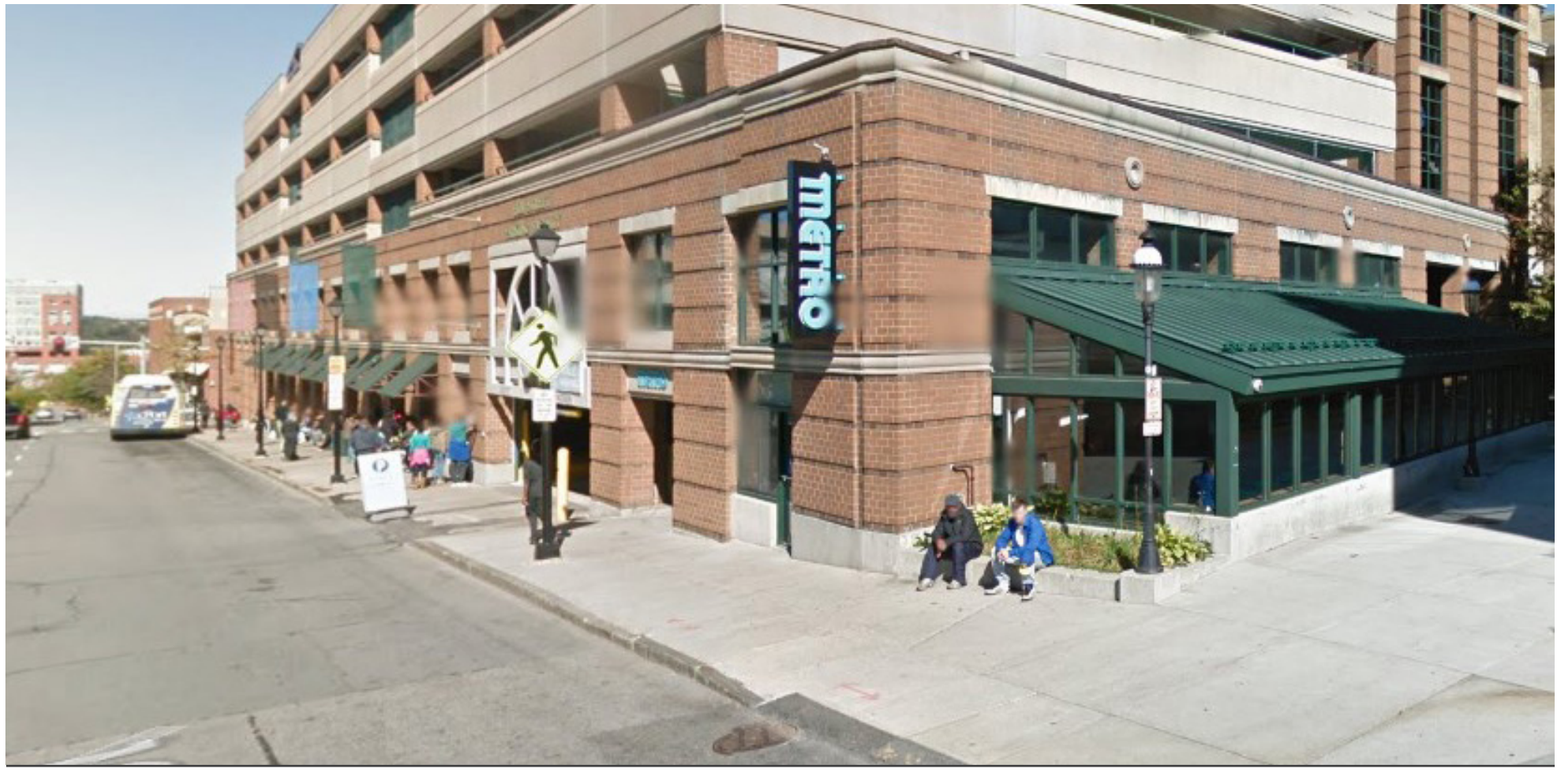


Figure 5-19: Multiple uses and functions along Elm Street at METRO Pulse, including a large parking garage, which impacts traffic circulation.

The recommendation to retain Elm Street as a one-way street for the short-term, with the addition of bicycle lanes and designated bus loading areas in front of METRO Pulse, will also benefit transit operations. There are several design options to reduce conflicts among buses, bikes and vehicles:

- Dashed bike lane adjacent to the bus lane;
- Shared bus-bike lane; AND
- Bus stop design with consideration to left turn movements and the extent/radius of curb extensions.

As a long-term alternative, opening Elm Street to two-way traffic between Congress Street and Cumberland Avenue could be considered.

5.2.6 – Land-Use

The Preble/Elm Streets focus area offers numerous adaptive reuse and infill opportunities. This is an area in transition between Marginal Way and the more established urban fabric and streets beginning at Cumberland Avenue:

- Study the build-out potential and mobility implications of Hanover Street between Kennebec Street and Marginal Way;
- Continue to target the DPW site for mixed-use urban infill;
- Inventory surface parking lots in the area and identify potential infill opportunities and triggers requiring structured parking;
- Maintain and expand both market rate and affordable housing stock; and
- Preble Street is a key gateway street to downtown. New development and redevelopment should address the street to create a pedestrian-friendly environment and maximize land values; and
- Elm Street is also a key gateway street leaving downtown. New development and redevelopment should address the street to create a pedestrian-friendly environment and increase land values.

5.3 Portland and Oxford Streets Focus Area

5.3.1 – Alternatives Development

This focus area had two key issues: poor east-west connectivity/circulation and poor pedestrian conditions at the Portland Street/Forest Avenue/Park Avenue intersection. Two alternatives were assessed to address poor east-west connectivity/circulation and included:

- No-Build (leave the current Oxford Street one-way configuration); and
- Phase 1 - Two-way Oxford Street between Alder Street and Elm Street.
- Phase 2 - Assess two-way Oxford Street between Elm Street and Pearl Street. This Phase to be field tested as a two-way street between Elm and Pearl Streets and include review by Fire Department, DPW, and School Department. The field test is to include a review side of street for parking prohibition and the potential for winter seasonal parking restrictions.

Table 5-9 presents a comparison of the two alternatives. While the existing configuration represents no change and thus no net cost, it does not satisfy the study objective of improving traffic circulation and connectivity. The two-way configuration improves connectivity and circulation. As an example, motorists will be able to travel from Pearl Street, via Oxford Street, to Forest Avenue, thus providing traffic relief to Cumberland Avenue. Loss of on-street parking spaces is a negative outcome of the conversion, but with construction of the Midtown parking garage and directing Pearl Place vehicles to the Lancaster Street parking lot, potential impacts can be lessened.

	Pros	Cons
Existing Configuration	• No net cost • Maximizes parking supply	• Continued poor traffic connectivity
Two-Way Configuration	• Improved east-west connectivity and circulation • Overall travel width expanded for enhanced emergency response and DPW Operations	• Low implementation cost • Loss of parking between Chestnut St and Pearl St (11 of 28 spaces) • Seasonal parking between Elm St and Chestnut St (8 spaces - will be tested to see if any can be retained)

Table 5-9: Oxford Street Alternative Pros/Cons Comparison

5.3.2 – Recommended Concept

The recommended concept plan is comprised of four distinct areas: the Portland Street/Forest Avenue/Park Avenue intersection; Portland Street; and Oxford Street (Elm Street to Portland Street and Elm Street to Pearl Street. Portland Street is proposed to match the recently implemented reconfiguration with two 10-foot travel lanes, two 5-foot bike lanes, two 2.5-foot buffer areas and two 8-foot parking lanes. **Figure 5-20** illustrates the concept.

Oxford Street under a two-way conversion is recommended to consist of two travel lanes with a total width varying between 20 and 24 feet and an 8-foot parking lane on the north side. **Figure 5-21** illustrates the roadway configuration and **Figures 5-22**, **5-23**, and **5-24** illustrate roadway layout plans.

Significant modifications are recommended at the Portland Street/Forest Avenue/Park Avenue intersection (see **Figure 5-21**) . These include:

- The Portland Street approach is recommended to include a left lane and a shared through/right lane;
- The Post Office corner is to be extened into the intersection and the bus stop will be relocated toward Brattle Street;
- A crosswalk on the Park Avenue is to be added; and
- The channelization island on Forest Avenue will be replaced with a urban right lane configuration (the Forest Avenue approach capacity will remain the same).

Table 5-10 presents how the concept modifications meet project goals.

	Goals	Met/How
Proposed Recommendations	Improve east-west street connectivity/circulation	**Yes** — Two-way conversion to Oxford Street.
	Evaluate Oxford St vehicle connection at Franklin St based on circulation changes	**No** — To be performed by MaineDOT.
	Implement Complete Streets/Streetscape improvements on Portland Street	**Yes** — Maintaining existing roadway configuration.
	Reconfigure intersection and improve pedestrian crossing at Forest Ave/Park Ave/Portland St	**Yes** — Pedestrian improvements included.

Table 5-10: How Portland and Oxford Streets Modifications Meet Project Goals

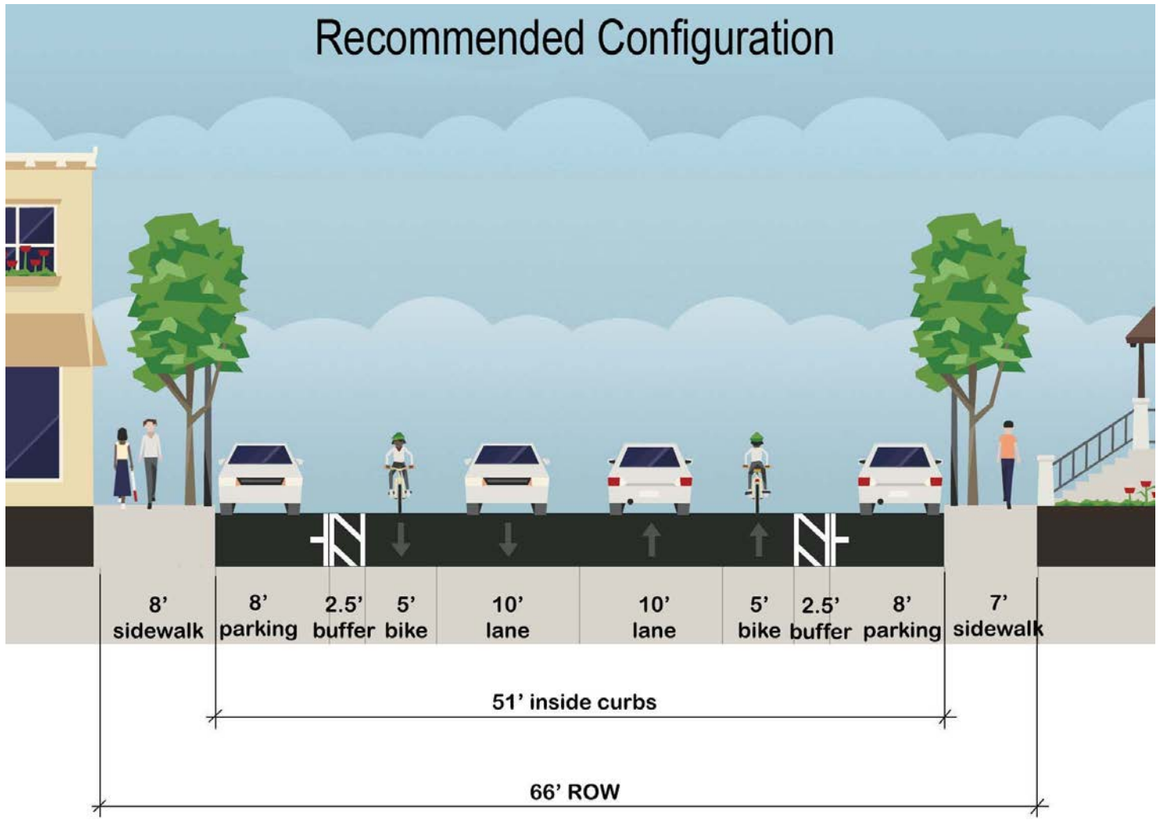


Figure 5-20: Portland Street at DPW Building

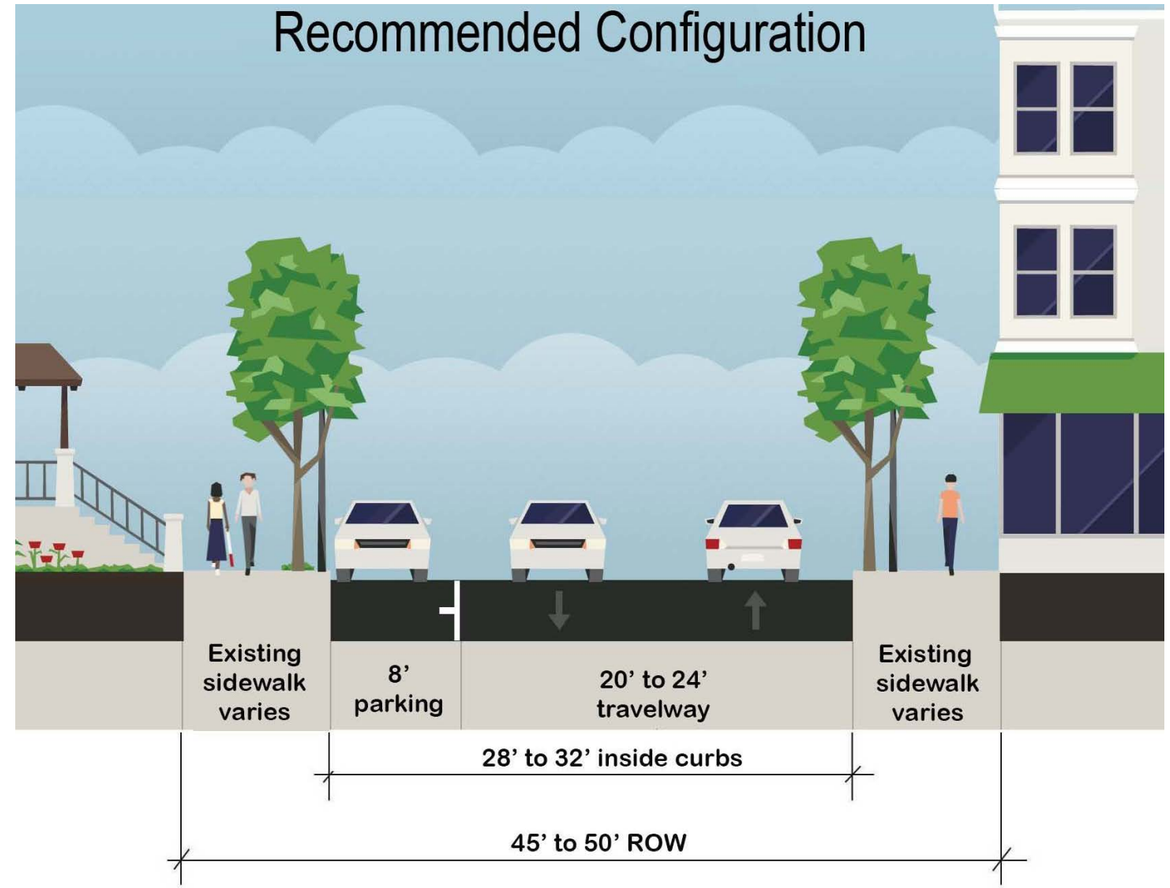


Figure 5-21: Oxford Street Two-way Concept: Elm Street to Alder Street

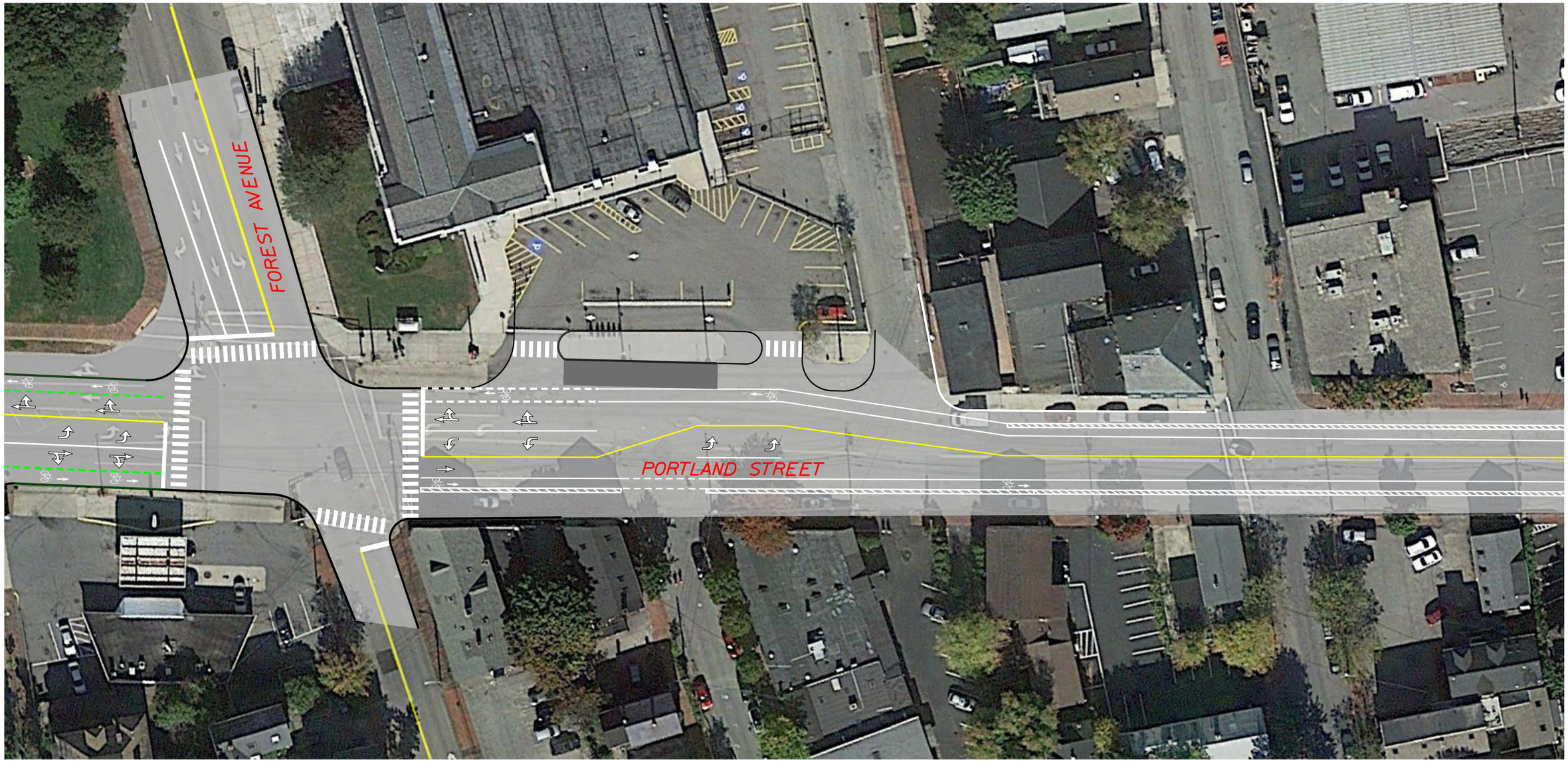


Figure 5-22: Portland Street/Forest Avenue/Park Avenue Modification

Figure 5-23: Oxford Street Two-way Plan 1 of 2: Phase1, Elm Street to Alder Street

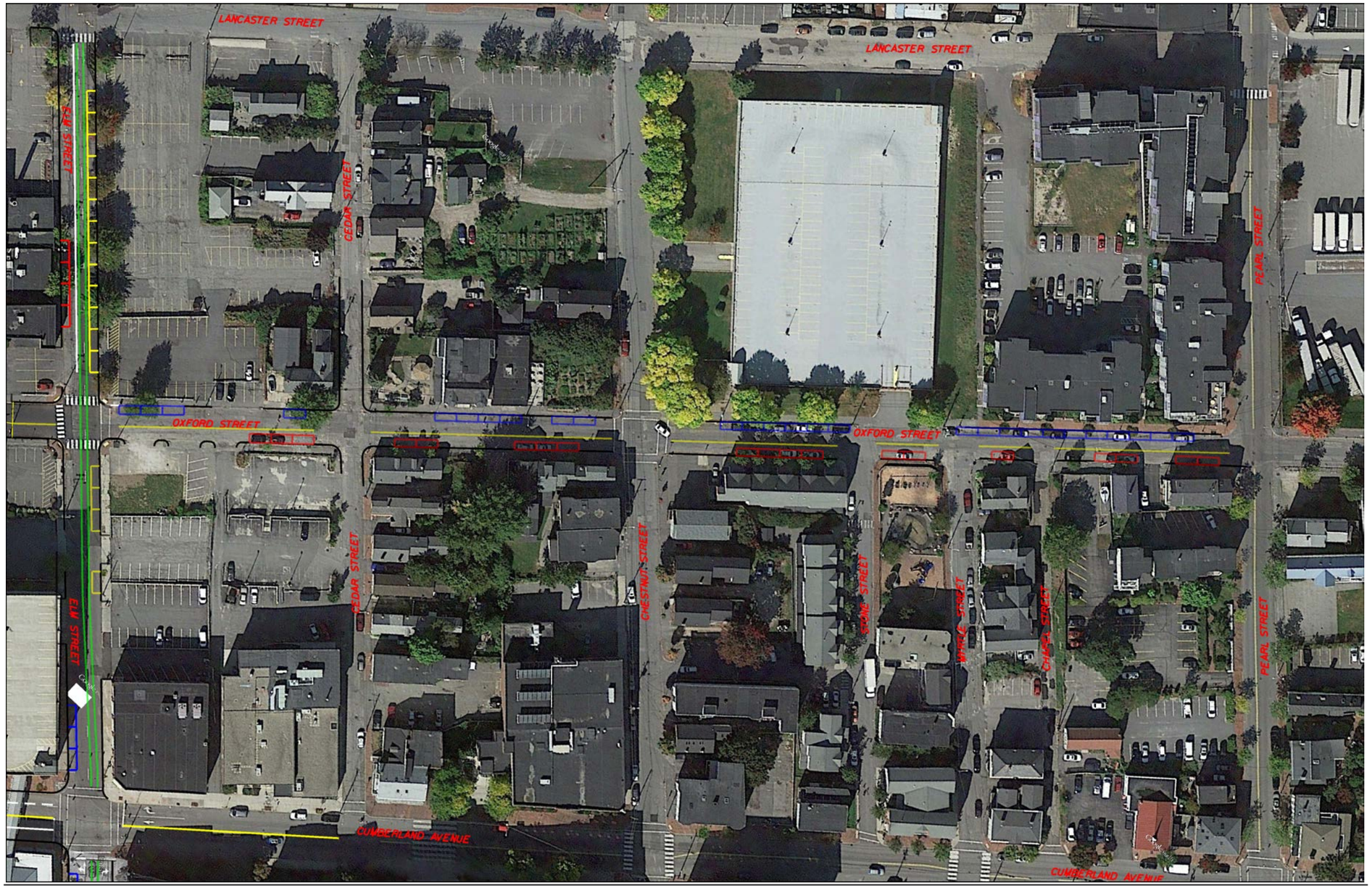


Figure 5-24: Oxford Street Two-Way Plan 2 of 2: Phase 2 Field Test Configuration, Elm Street to Pearl Street

5.3.3 – Traffic Modeling

As part of this study, bike lanes on Forest Avenue from Marginal Way to Portland Avenue/Park Street are recommended. In order for bike lanes to be provided on the Forest Avenue approach to Park Avenue, a separate left lane and a combined through-right lane, as opposed to the current separate left, through and right approach lanes, will be necessary. Analysis also included the reduction of receiving lanes on Park Avenue from two through lanes to one through lane. This helps to transition the current configuration to Park Avenue's three-lane section to the west of the study area. All analysis timings were optimized and show (while there is one failing (83.1 sec) movement for the Portland Street westbound through-right laneintersection operates acceptably overall. (See Table 5-11)

Scenario	PM Peak Hour - LOS (Delay Sec)
A: 2035 No Build	B (19.9)
B: 2035 Build	D (42.9)

Table 5-11: Portland and Oxford Streets Intersection Level of Service Summary

5.3.4 – Pedestrian and Bicycle /Streetscape

Portland Street

- Refer to **Figure 5-22, 23, and 24** for specific bicycle and pedestrian recommendations;
- Retain the current pavement markings on Portland Street; and
- Install 4-way crosswalk at Hanover Street and Portland Street.

Oxford Street

- Bicycle accommodations are not recommended on Oxford Street;
- Provide benches at Preble Street Resource Center;
- Consider removing two or three parking spaces along the Resource Center frontage to allow for a wider sidewalk with more benches and trash receptacles;
- Improve bus stops with benches, sidewalk lighting, and shade trees;
- Provide additional street trees at regular intervals; and
- Develop a sidewalk replacement and improvement program for Oxford Street. Much of the sidewalk is in need of repair.
- Install crosswalks on all intersection approaches;
- Incorporate the proposed recommendations at Franklin Street in the Franklin Street Study; and
- Install a Rectangular Rapid Flashing Beacon (RRFB) at the Oxford Street and Washington Avenue intersection to assist the Walking School Bus Program for the Kennedy Park route.

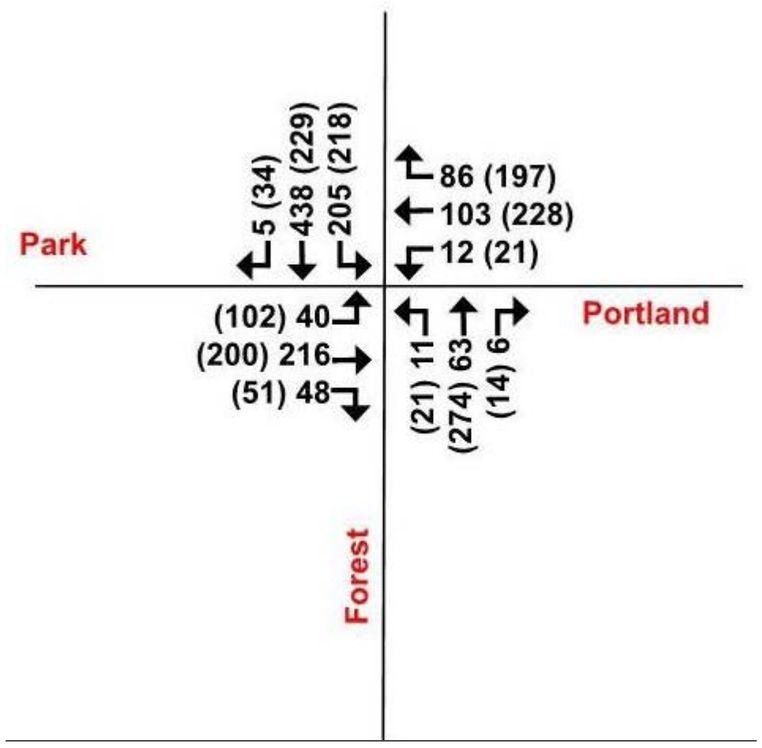


Figure 5-25: Portland Street/Forest Avenue/Park Avenue 2035 Peak Hour Traffic

5.3.5 – Transit

The proposed changes to make Oxford Street two-way also provides transit benefits for METRO routes 2, 4, and 5. These routes travel northbound on Elm Street, making a left turn onto Oxford Street, and connecting to Portland Street. While there are no bus stop relocations recommended for Oxford Street, transit operations should be considered in roadway design. On-street parking and curb extensions must be designed in a manner to allow buses to safely make turns. One design option to consider is to narrow on-street parking from 8-feet to 7-feet, and slightly widen the westbound travel lane on Oxford Street near the intersection with Elm Street to minimize impacts on parking and bus operations. An example of a turning radius for a typical bus is provided in **Figure 5-26**.

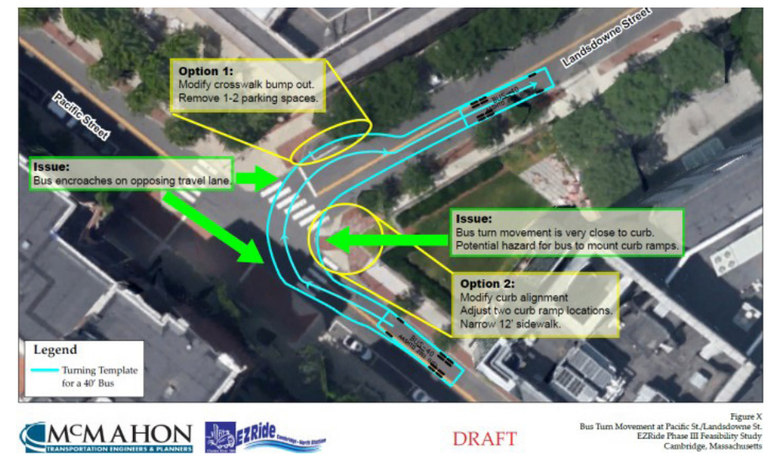


Figure 5-26: Bus turning radius for EZ Ride shuttle service in Cambridge, MA

In conjunction with the proposed improvements on Portland Street and the intersection with Forest Avenue, the bus stop at Portland Street and Forest Avenue is recommended for relocation further from the intersection. This would move the stop east, between the post office parking lot driveways and align it with the proposed conceptual improvements for pedestrian safety. See **Figure 5-27**.

The stop relocation should provide sufficient width for an ADA compliant landing area, and consider driveway openings, curb extensions and bus access/

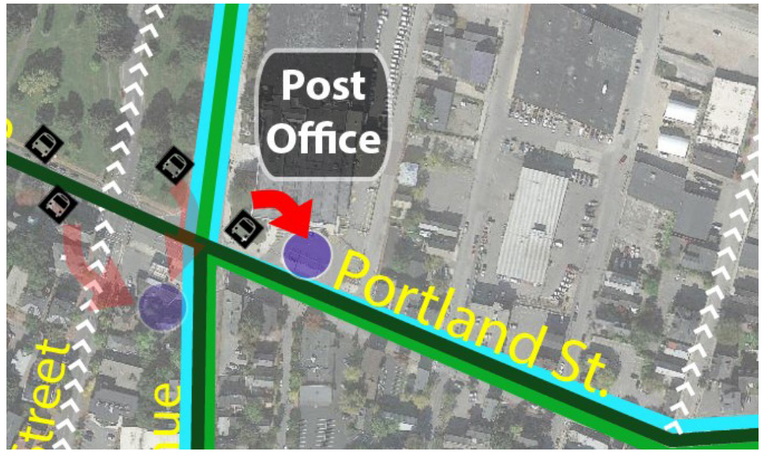


Figure 5-27: Relocation of Portand St and Forest Ave stop in between Post Office driveways

operation needs. This design would also entail relocating and installing the existing shelter without the bench and providing two bus berthing areas, as two buses regularly queue at the stop. Adjacent intersections and crossings would also be redesigned to maintain sufficient sight lines for vehicles entering and exiting driveways and to maintain circulation at the mailbox drop off, as shown in **Figure 5-28**.

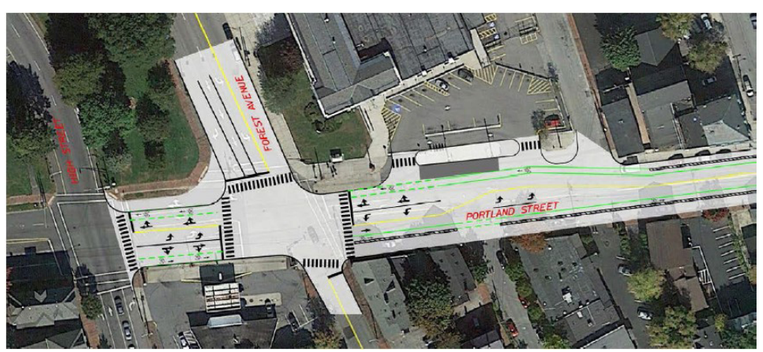


Figure 5-28: Proposed intersection design for Portland St and Forest Ave

The bus stops located on Forest Avenue, north of the Post Office and south of High Street, would benefit from improved pedestrian connections to facilitate crossing of Forest Avenue. This could be accomplished through an extension of the proposed improvements of the intersection of Marginal Way/Forest Avenue/Kennebec Street. Alternatively, the potential for a signalized crossing or pedestrian warning beacon could be explored at this location.

Finally, two bus stops are proposed for relocation/consolidated further west at the intersection of Portland Street/Park Avenue and Forest Avenue, as shown in **Figure 5-29**. The inbound bus stops on Park Avenue and Forest Avenue are recommended to be relocated south of Park Avenue on Forest Avenue. The sidewalk width and curbside streetscape south of the Park Avenue and Forest Avenue intersection should be considered as part of the potential stop relocation and bus stop design. Another consideration is that buses would be stopping in the single curbside travel lane.

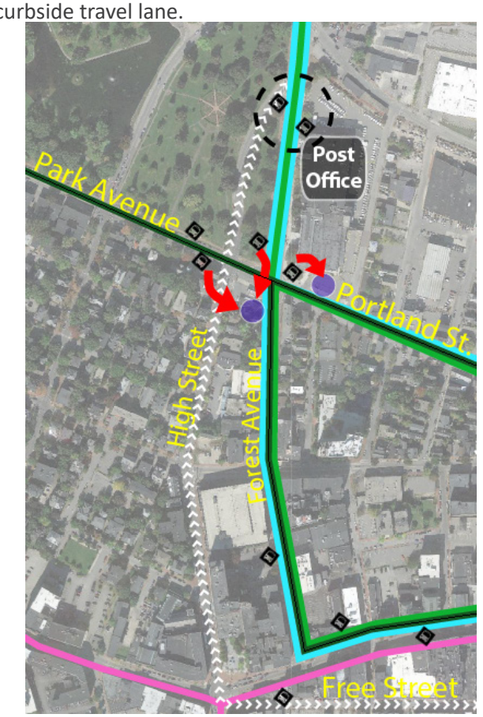


Figure 5-29: Bus stop relocation and consolidation on Park Ave and Forest Ave

5.3.6 – Land-Use

- Inventory surface parking lots in the area and identify potential infill opportunities and triggers requiring structured parking;
- Continue to analyze the DPW site for mixed-use urban infill;
- Maintain and expand both market rate and affordable housing stock; and
- Study the redevelopment potential of the structured parking facility at Chestnut Street and Oxford Street, and if it can be expanded to increase parking supply; in addition, can the garage be wrapped with mixed-use development?
- Study the possible expansion of the B7 Zone from Lancaster Street to south of Cumberland Avenue.

5.4 Pearl Street Focus Area

5.4.1 – Recommended Concept

Pearl Street issues include having poor north-south connectivity and lack of bike facilities. Accordingly, the following plan looks to add bike lanes and a connection between Marginal Way and Commercial Street. **Figure 5-30** depicts the recommended roadway configuration for Pearl Street between Somerset Street and Cumberland Avenue. The recommendation suggests maintaining on-street parking on the east side of Pearl Street north of Cumberland Avenue, and thus a shared bike/vehicle lane will be required in the northerly direction for a short distance. As illustrated, Pearl Street is recommended to be two 10-foot travel lanes and two 6-foot bike lanes. Extending Pearl Street to Marginal Way is recommended as part of the plan for improved traffic circulation and connectivity. Right-of-way for constructing this roadway is not currently available and therefore implementation will likely be a function of redevelopment plans. The recommendation is to not permit left-turn movements at Marginal Way from Pearl Street, given the proximity of the future connection to Franklin Street. **Table 5-12** notes how modifications meet project goals.

	Goals	Met/How
Proposed Recommendations	Assess Complete Streets	Yes — Bike lanes added
	Improve north-south connectivity on peninsula—I-295 to waterfront	Yes — Extend Pearl Street to Marginal Way as part of redevelopment

Table 5-12: How Pearl Street Modifications meet Project Goals

5.4.2 – Traffic Modeling

A future street connection to Marginal Way was modeled at the intersection of Pearl Street and Marginal Way. Because two intersections on either side of this intersection are signalized, this intersection is anticipated to remain unsignalized. To prevent delays resulting from additional traffic, only three turning movements are permitted at this intersection—EB right from Marginal Way onto Pearl Street, WB left from Marginal Way onto Pearl Street, and a NB right from Pearl Street onto Marginal Way EB. Preliminary modeling at this location showed a future connection would work at this location under proposed conditions and is expected to have connectivity benefits for neighborhood traffic.

5.4.3 – Pedestrian and Bicycle/Streetscape

Pearl Street

- Refer to **Figure 5-30** for specific bicycle lane and sidewalk recommendations;
- Include bike lanes and shared lanes (between Oxford Street and Marginal Way);
- Develop better sidewalks and streetscape as blocks undergo redeveloped between Kennebec Street and Lancaster Street; and
- Provide connection to Marginal Way with 6-foot bike lanes and 9-foot-wide sidewalks with pedestrian-scale street lights and street trees on both sides. Work with property owners for best location and alignment of the connection between Somerset Street and Marginal Way; and
- Give priority to Bayside Trail users at trail crossing. Vehicles are recommended to stop; and
- Provide a 4-way stop at Somerset Street.

5.4.4 – Transit

There are no recommended bus stop relocations on Pearl Street. Modifications to Marginal Way will improve access from Route 8 to Pearl Street, particularly through a proposed long term street connection made between Marginal Way and Somerset Street.

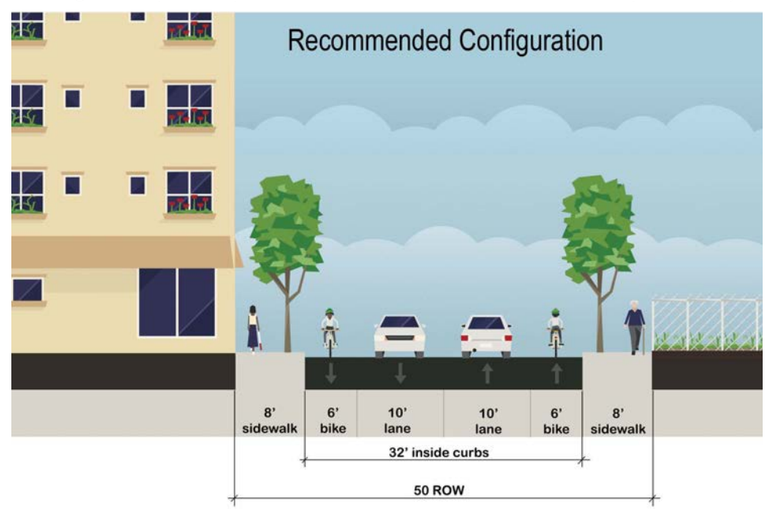


Figure 5-30: Pearl St between Somerset St and Oxford St

5.4.5 – Land-Use

- Maintain and expand both market rate and affordable housing stock, particularly south of Oxford Street;
- Continue to work towards evolution of the scrap yard and vacant sites into high density/mixed-use development; and
- Ensure that new development meets the goals of the B7 Zone.

5.5 Lancaster and Kennebec Streets Focus Area

5.5.1 – Recommended Concept

Lancaster Street

Lancaster Street has poor east-west transportation connectivity and lacks a safe pedestrian crossing at Franklin Street. **Table 5-12** notes how the recommendations meet the Focus Area Goals. The recommendations include two options. Where a 50-ft of right-of-way exists, a typical urban street is suggested with a 20-ft travel way, two 7-ft parking lanes, and 8-ft sidewalks. **See Figure 5-31**.

Driveway modifications will be required including changes to parking lots where vehicles park directly adjacent to streets. For areas where less right-of-way exists (such as, between Preble Street and Hanover Street), a Shared Street concept is recommended (see **Figure 5-32**), where the entire roadway width is available for pedestrians, cyclists, and vehicles.

	Goals	Met/How
Proposed Recommendations	Improve east-west street connectivity	Yes — Recommends either an urban street or shared street throughout Bayside. In addition, recommends a two-way connection between Franklin and Pearl via redevelopment.
	Connect Lancaster Street to Brattle Street	Yes — A typical urban street is suggested with a 20-foot travel way; two 7-foot parking lanes, and 8-foot sidewalks.
	Evaluate possible pedestrian crossing at Franklin Street and Lancaster Street	Yes — It is recommended that MaineDOT evaluate the feasibility of a pedestrian crossing as part of the PDR process.
	Retrofit Lancaster to be more usable	Yes — Either as a typical street with sidewalks, on-street parking, and two travel lanes, or as a shared street in constrained ROW areas

Table 5-13: How Lancaster Street Modifications meet Project Goals

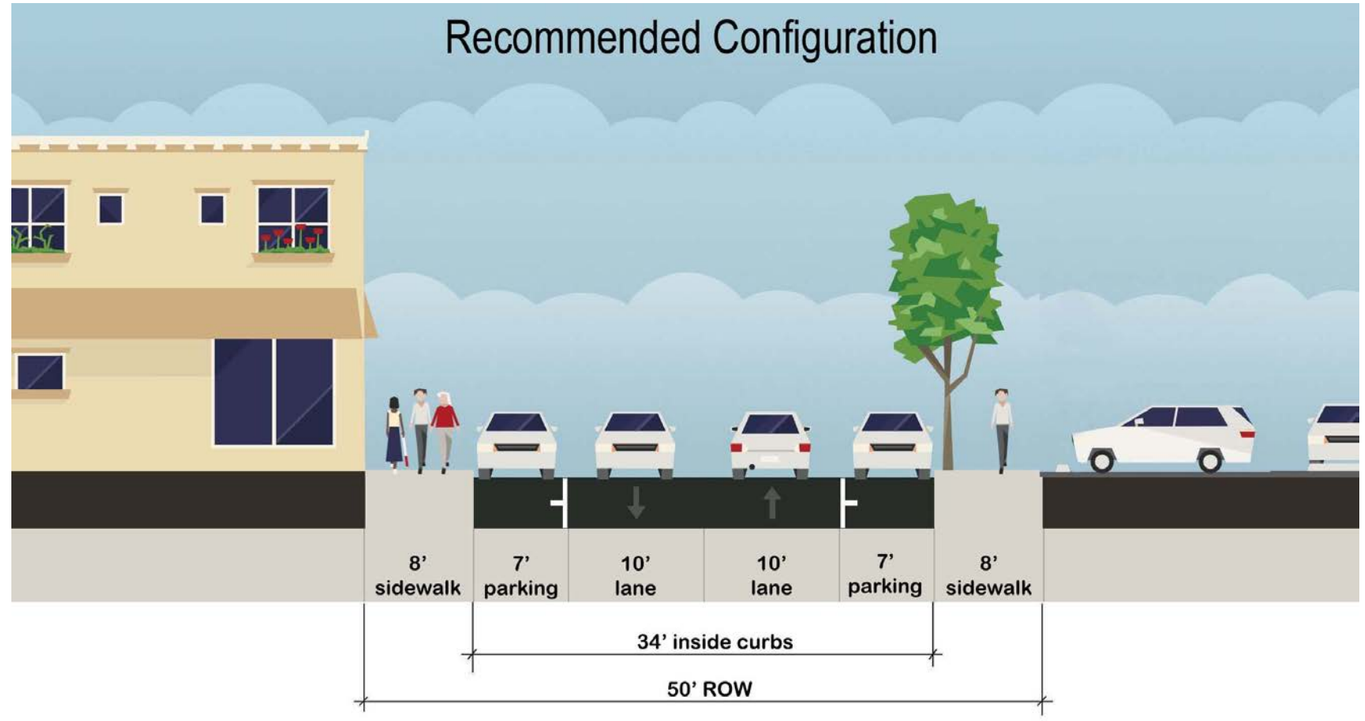


Figure 5-31: Lancaster Street East Elm Street - Looking East

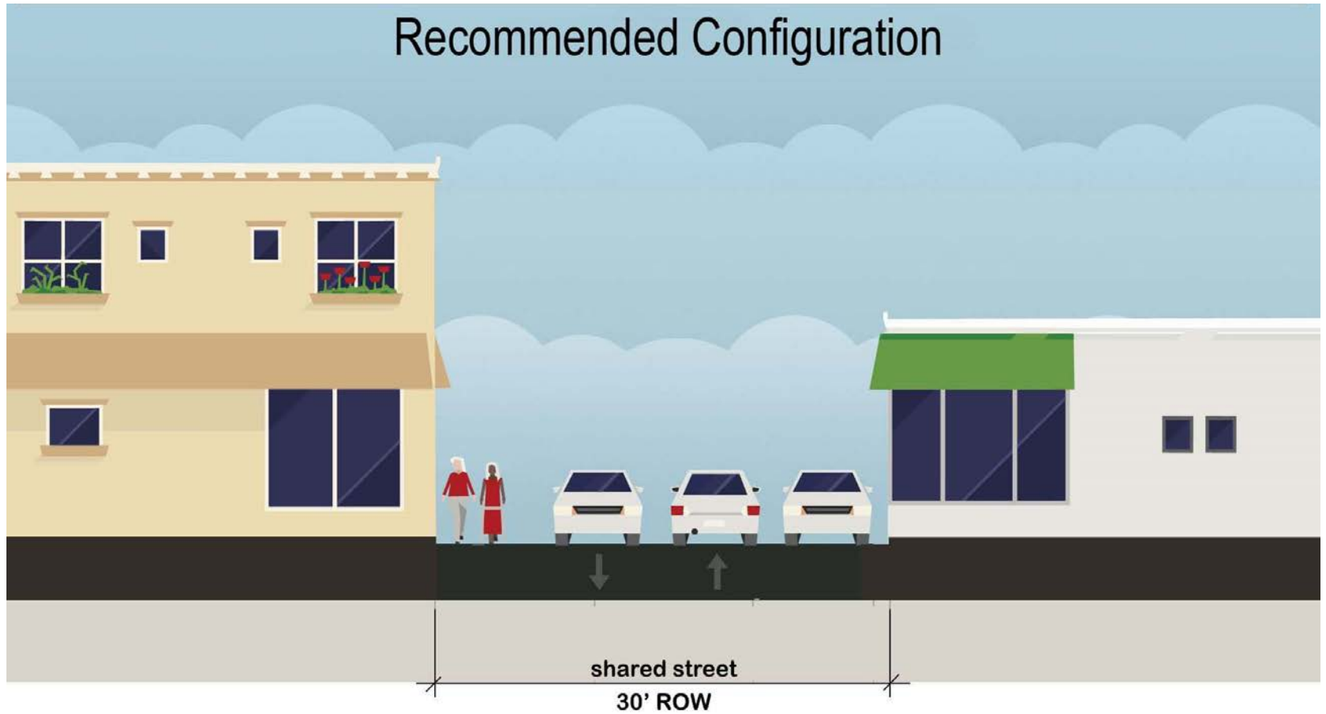


Figure 5-32: Lancaster Street (Hanover Street to Preble Street)

Kennebec Street

Kennebec Street is not well defined and confusing for all modes given its roadway configuration. Between Elm Street and Chestnut Street it is recommended that Kennebec Street be converted to two-way traffic with two travel lanes, a flush sidewalk on the north side and perpendicular on-street parking on the south side of the street. Kennebec Street between Chestnut Street and Pearl Street has a 40-foot right-of-way and thus limits possible roadway options. Two options are suggested. One option consists of a traditional roadway with 20-feet of travel-way width, two 7-foot parking lanes, one 5-foot sidewalk and one 6-foot sidewalk. Given the narrow nature of this option, it is also recommended that a shared street design be considered. **Figure 5-33** illustrates the configuration between Elm Street and Chestnut Street and **Table 5-14** notes how the concept meets project goals.

	Goals	Met/How
Proposed Recommendations	Retrofit Kennebec Street to be more usable	Yes — Recommends conversion of Kennebec Street between Chestnut and Elm to two-way and creation of a shared street between Chestnut and Pearl.

Table 5-14: How Kennebec Street Modifications meet Project Goals

5.5.2 – Pedestrian and Bicycle/Streetscape

Lancaster Street

- Refer to Figures 31 and 32 for specific sidewalk recommendations;
- Construct sidewalks in areas currently providing direct access/egress to parking lots; and
- Bicycle accommodations are not recommended on Lancaster Street. Reconnect the missing street link through the existing DPW site between Hanover Street and Parris Street;
- Develop better sidewalks and streetscape as blocks are developed between Chestnut Street and Pearl Street;
- Provide additional street trees at regular intervals;
- Install crosswalks on all approaches at intersections; and
- Continue to study the provision of a pedestrian crossing of Franklin Street.

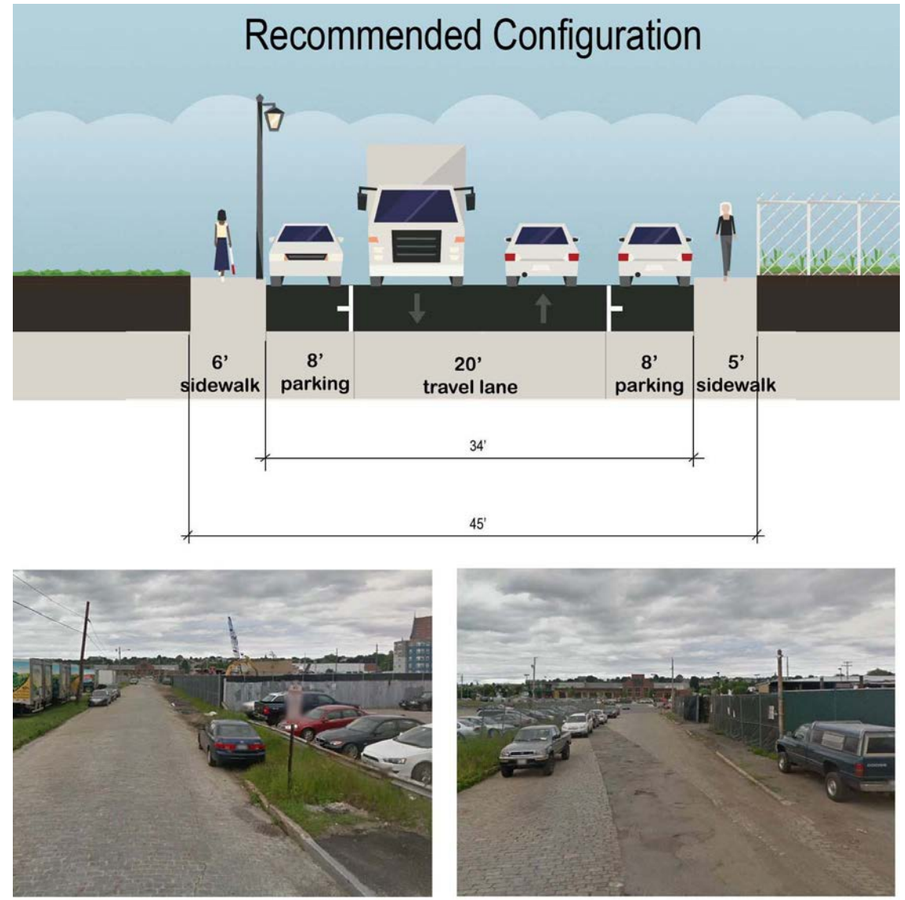


Figure 5-33: Kennebec Street East of Chestnut Street - Looking East

5.5.3 – Transit

The bus stop at Lancaster Street and Elm Street is recommended to remain in place with the curb bumpout. However, curbside uses should be reevaluated to reduce conflicts, such as removing parking meters from the bus stop area.

5.5.4 – Land-Use

- Ensure that new development meets the goals of the B7 Zone;
- Continue to work towards the evolution of the scrap yard and vacant sites into high-density/mixed-use development;
- Maintain strong pedestrian and bicycle connectivity to the Bayside Trail as redevelopment occurs; and
- Study the development potential and mobility implications of closing Kennebec Street between Chestnut Street and Pearl Street to allow for a more efficient urban redevelopment, while allowing for connectivity through Bayside. Will consolidating these parcels encourage development that meets the goals of the B7 Zone?
- Study adapting the buildings fronting Kennebec Street between Elm Street and Chestnut Street to a more intensive urban use.

5.6 East Bayside Focus Area

5.6.1 – Recommended Concept

Fox Street

Fox Street has a roadway configuration between Anderson Street and Washington Avenue where the roadway is not wide enough for two travel lanes and parking on both sides of the street. To mitigate this issue, it is recommended that Fox Street in this section consist of a 24-foot travel way and one 8-foot parking lane on the south side. **See Figure 34**. Between Anderson Street and Franklin Street, no changes to the existing roadway configuration are recommended. **See Figure 35**. As illustrated, two 14-foot travel lanes and an 8-foot parking lane on the south side are recommended to remain. Bike lanes were considered, but not recommended given the presence of large trucks and the need for on-street parking.

Cove Street/Diamond Street

Both Cove and Diamond Streets currently are not well defined and have wide open driveways and poorly configured parking lots. The recommended plan for both streets is to provide a 22-foot travel way, two 8-foot parking lanes, and sidewalks on both sides of the street. Shared vehicle/bike accommodations are proposed. Access management and parking lot modifications will be required in conjunction with implementation of recommendations. See **Figures 36 and 37**.

Anderson Street/Plowman Street

With the near completion of the Anderson Street Neighborhood By-way project, this location lacks direct pedestrian/bike accommodations from the Tukey Street path. It is recommended that a study be performed at the Anderson Street/Plowman Street intersection to evaluate recommendations for providing a direct pedestrian and bicycle connection between the Tukey Street Path and Anderson Street. Table 5-15 notes how the concepts meet project goals.

	Goals	Met/How
Proposed Recommendations	Create Complete Streets on key cross-streets to improve bicycle and pedestrian safety and connectivity	Yes — Recommends urban design on Cove and Diamond Streets
	Reconfigured Anderson Street/ Plowman Street intersection	Yes — Recommended for future study

Table 5-15: How East Bayside Improvements meet Project Goals

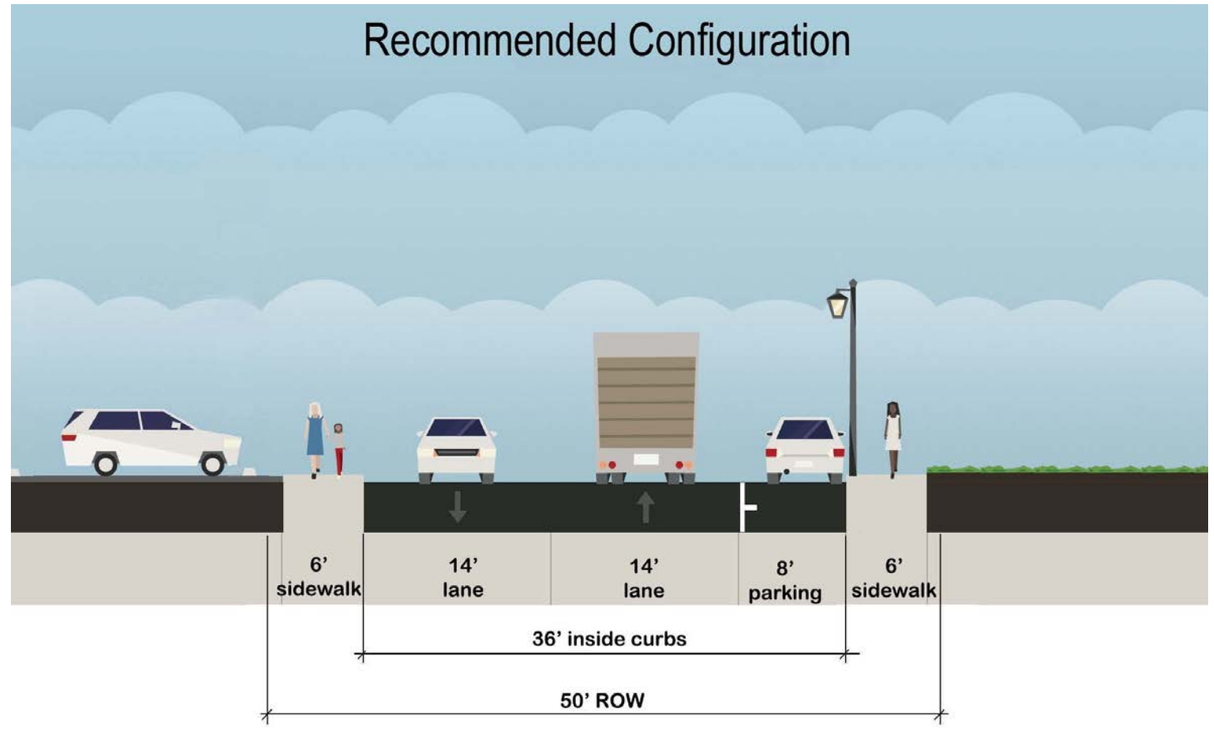


Figure 5-34: Fox Street at Fox Field - Looking East

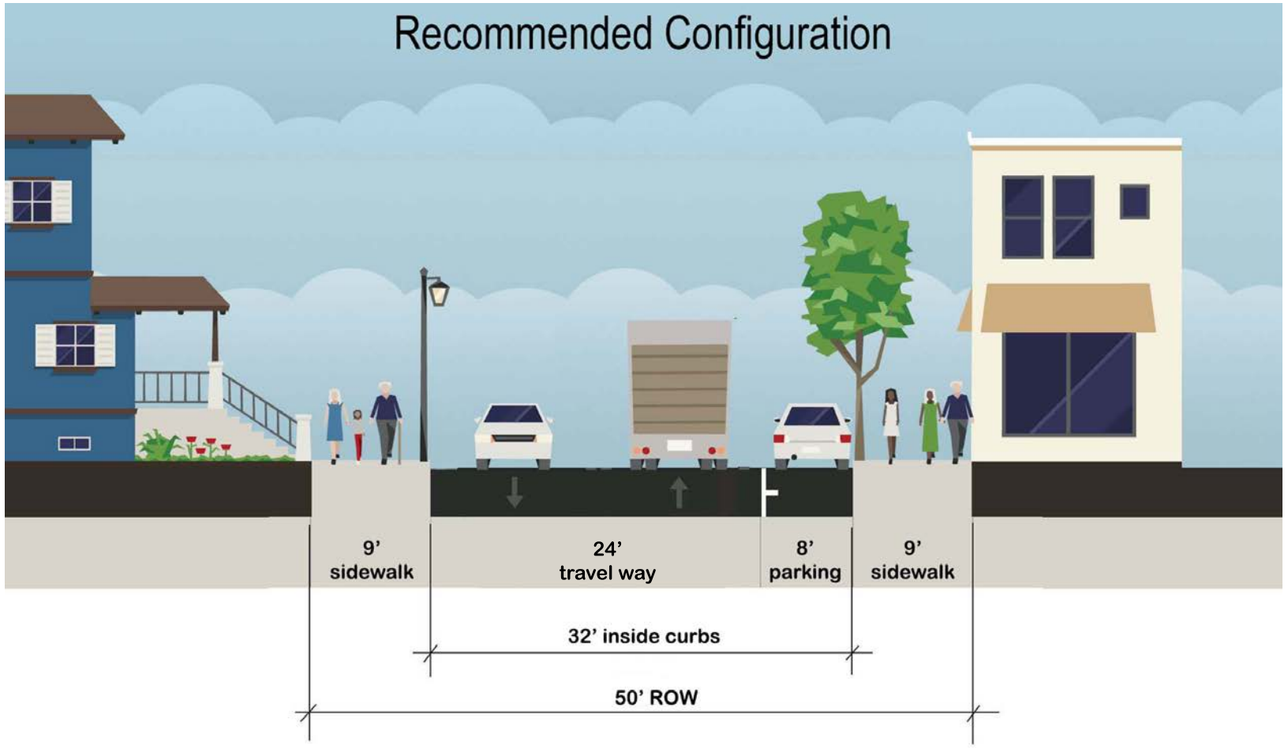


Figure 5-35: Fox Street East of Anderson Street - Looking East

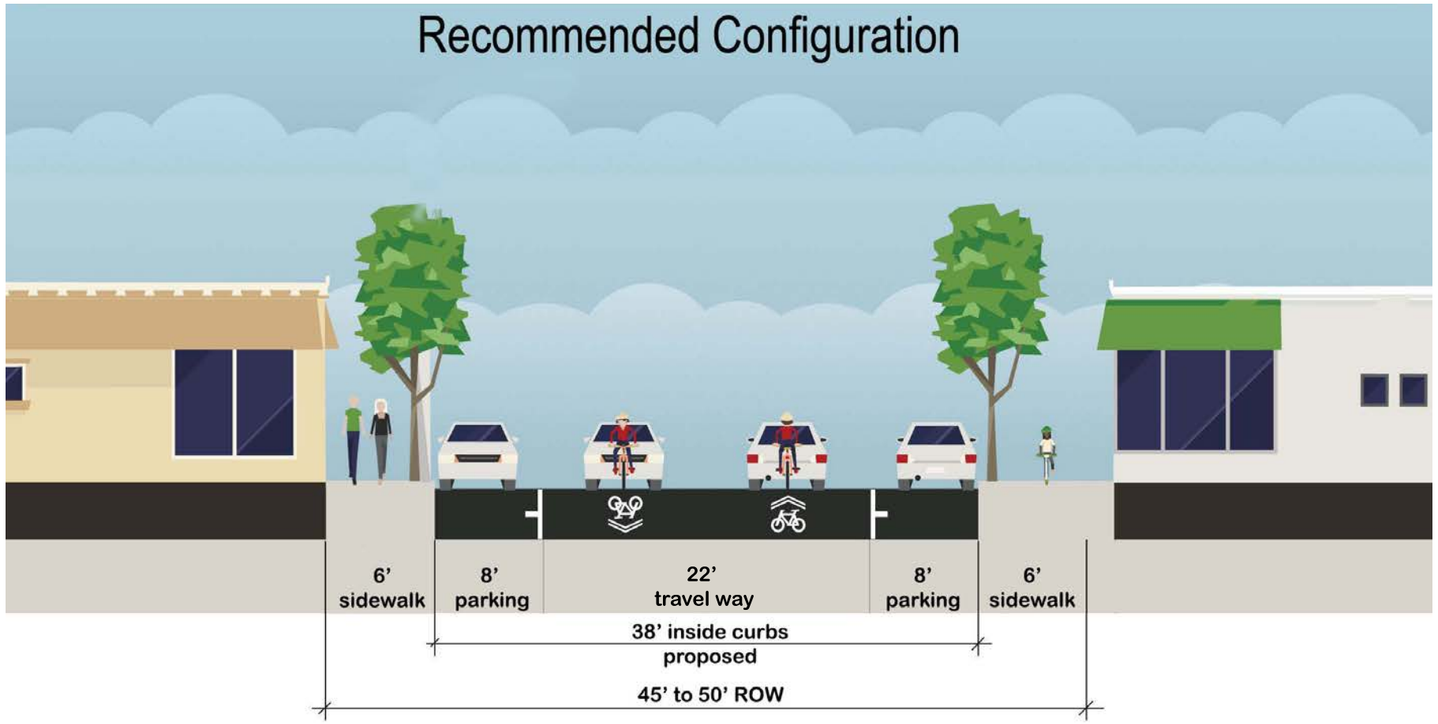


Figure 5-36: Cove Street at Independent Electrical - Looking South

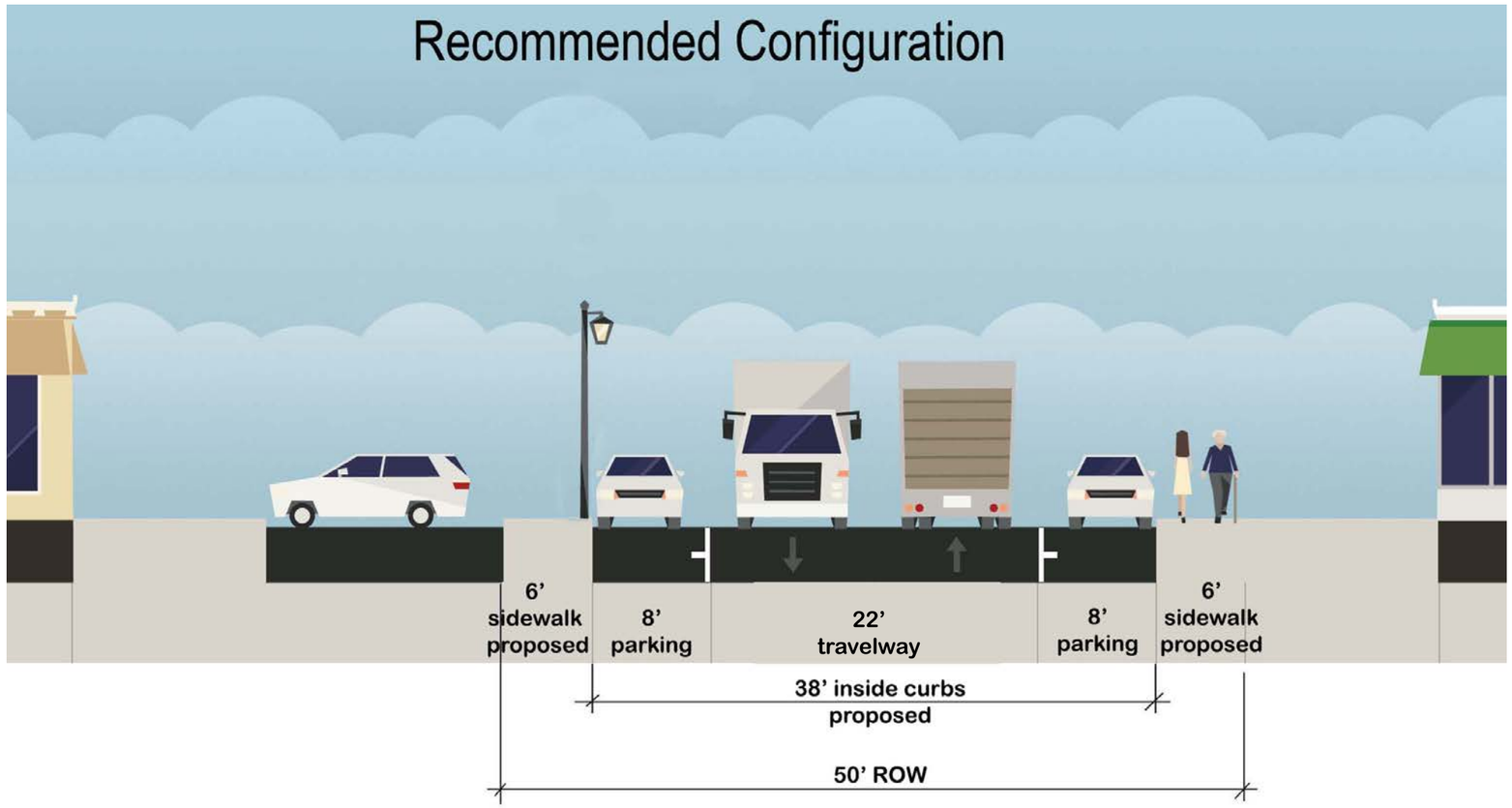


Figure 5-37: Diamond Street at Fastenal - Looking South

5.6.2 – Pedestrian and Bicycle/Streetscape

Bayside Trail

- Continue to work with business owners to provide at least one point of access to the Bayside Trail to allow for more connections north-south; and
- Continue to improve the trail connection behind Aikido of Maine, Urban Farm Fermentory, to Gould Street pocket park, to Washington Avenue. Consider a mid-block crossing on Washington Avenue to allow connection to the Eastern Prom Community Gardens and Eastern Promenade.

Fox Street

- Refer to illustrative cross-sections for specific bicycle lane and sidewalk recommendations.

Diamond and Cove Streets

- Refer to illustrative cross-sections for specific bicycle lane and sidewalk recommendations;
- Provide shared lane markings in travel ways; and
- Modify curb cuts and prohibit parking within public right-of-way. Fewer driveways and narrower driveways will provide for improved pedestrian and motorist safety.
- As a short-term recommendation, provide flush reinforced concrete continuous sidewalks stained (dark red) where these streets currently have head in parking. See **Figures 5-38** and **5-39** for an example implemented on Fox Street. Providing a level, continuous sidewalk not only brings the sidewalk up to the standards of ADA access, but also changes driver behavior. The driver exiting or entering the driveway is more aware that they are crossing a sidewalk, will proceed more slowly, and is more likely to stop. Tip down curbs instead of sweeping radii also cause slower turning movements.
- A longer term recommendation is to eliminate the unmanaged parking and excessive curb cuts, eliminate head-in parking and construct these streets with continuous raised sidewalks, parallel parking, street trees, and other urban design features. The existing configuration creates a gap in the streetscape and discourages pedestrians from travel between businesses on the same street.

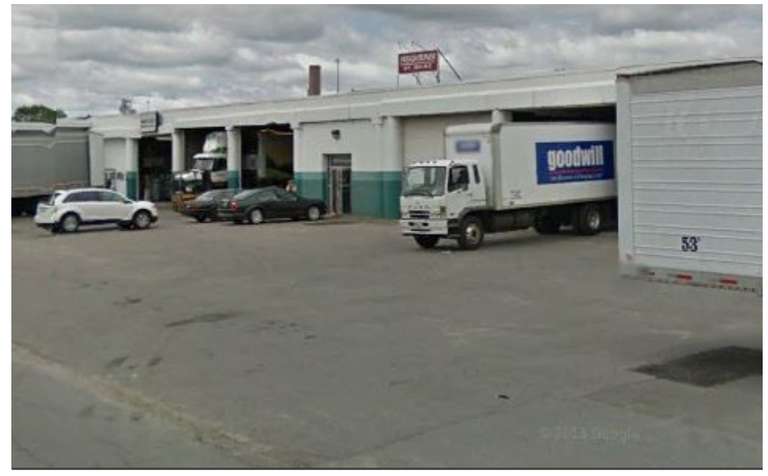


Figure 5-38: Fox Street before driveway improvements

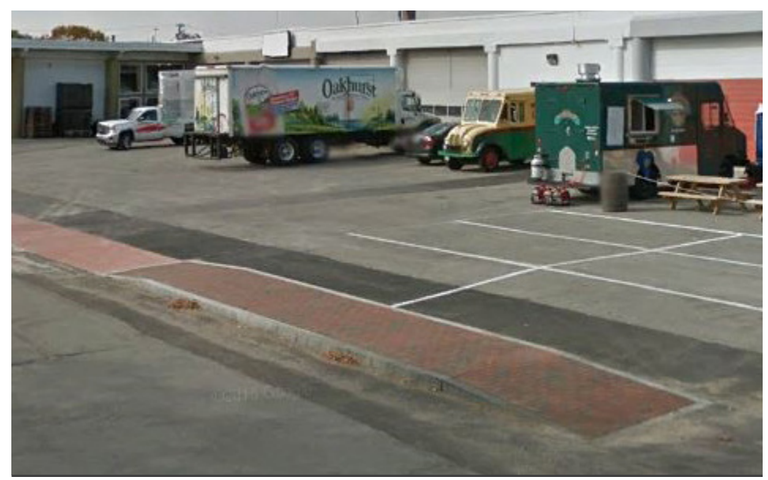


Figure 5-39: Fox Street after driveway improvements

5.6.3 – Transit

There are no bus route or bus stop changes recommended for the East Bayside neighborhood. Routing is recommended to continue on Washington Avenue, Cumberland Avenue, and Congress Street. Changes to bus stop routing are not recommended based on the character of the surrounding neighborhood. While residential development is relatively dense, the area is lacking in other high-demand origin and destinations for transit. Narrow streets, steep slopes, and residential and industrial land uses are not compatible with transit routing through the neighborhood. East Bayside would be better served by improving the pedestrian environment for better access to existing bus stops and routes.

5.6.4 – Land-Use

- Maintain and expand both market rate and affordable housing stock, particularly south of Oxford Street and east of Anderson Street; and
- Coordinate master planning efforts of Portland Housing Authority properties to ensure appropriate density as well reestablishing the urban street grid. The Franklin Street Study, the Bayside Transportation Master Plan, and the forthcoming East Bayside Brownfields Area Wide Planning Study, should also be coordinated with the long-term goals of the PHA to realize the goal of the increased housing; and
- Maintain the Fox Street recreation field/facilities; and
- Study the implications of modifications to the allowed uses in the Industrial Zone in the East Bayside Brownfields Study.

5.7 Washington Avenue Focus Area

5.7.1 – Recommended Concept

The recommended plan for Washington Avenue consists of maintaining the current roadway configuration (see **Figure 5-40**). Two 13-foot travel lanes in and two 8-foot parking lanes are recommended.

At the Fox Street/Walnut Street intersection, modifications to increase pedestrian safety are recommended including providing ADA compliant ramps with curb extensions and installation of a Rectangular Rapid Flash Beacon (RRFB) System. Under current traffic volumes a traffic signal is not warranted. Continued monitoring of conditions should occur and traffic signals should be considered in the future. **See Figure 5-41**.

At the Cumberland Avenue intersection, recommendations include single lanes be provided on all approaches with the exception of the outbound Cumberland Avenue approach. It is recommended that the Washington Avenue driveway to Buffalo Wild Wings Restaurant, and the Otto's take-out driveways be closed. Additionally, the Otto's take-out driveway on Cumberland Avenue, and the 7-Eleven Driveway on Washington Avenue nearest Cumberland Avenue, be narrowed. Changes to crosswalk locations and provision of ADA compliant ramps with corner geometry changes to shorten crossing distances are recommended. Replacement of the existing signal systems at Cumberland Avenue and Congress Street to a mast-arm supported system are recommended. See **Figure 5-42**. Table 5-16 notes how modifications meet project goals.

	Goals	Met/How
Proposed Recommendations	Create Complete Streets on key cross-streets to improve bicycle and pedestrian safety and connectivity	**Partially** — Installation of new crosswalks at all side street intersections and upgrading the existing Oxford Street crossing is recommended
	Increase safety and access at Fox/Walnut	**Partially** — Pedestrian enhancements are proposed
	Increase safety and functionality for all modes at Cumberland	**Yes** — Intersection improvements including defining travel lanes, closing driveways, and providing shorter and ADA compliant crosswalks

Table 5-16: How Washington Avenue Modifications meet Project Goals

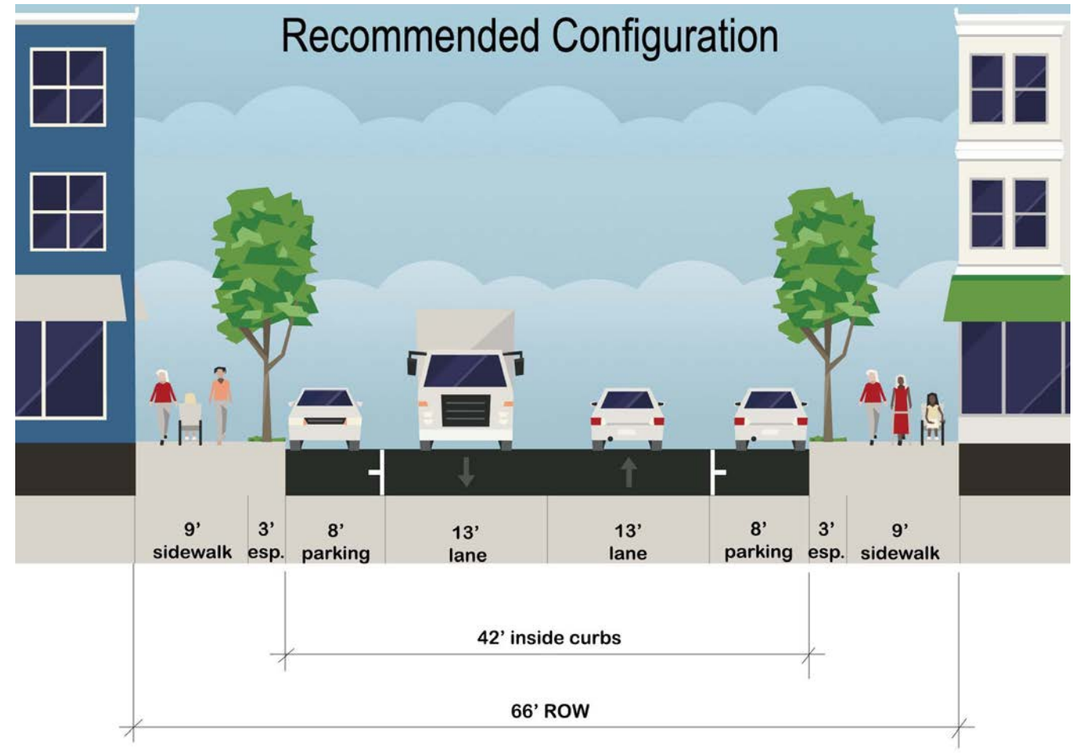


Figure 5-40: Washington Avenue between Fox Street/Walnut Street and Cumberland Avenue

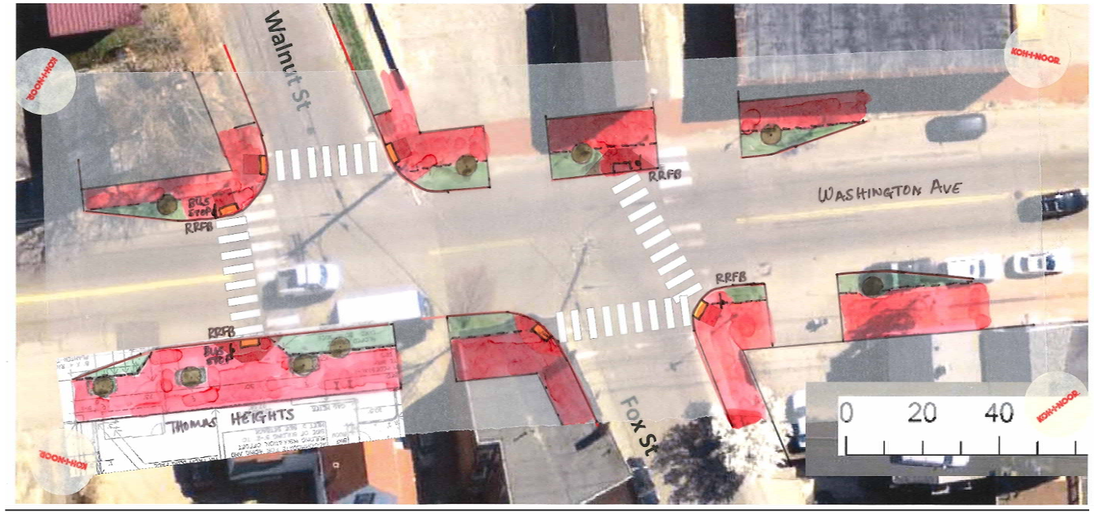


Figure 5-41: Washington Avenue/Fox Street/Walnut Street. Source: Planning and Urban Development

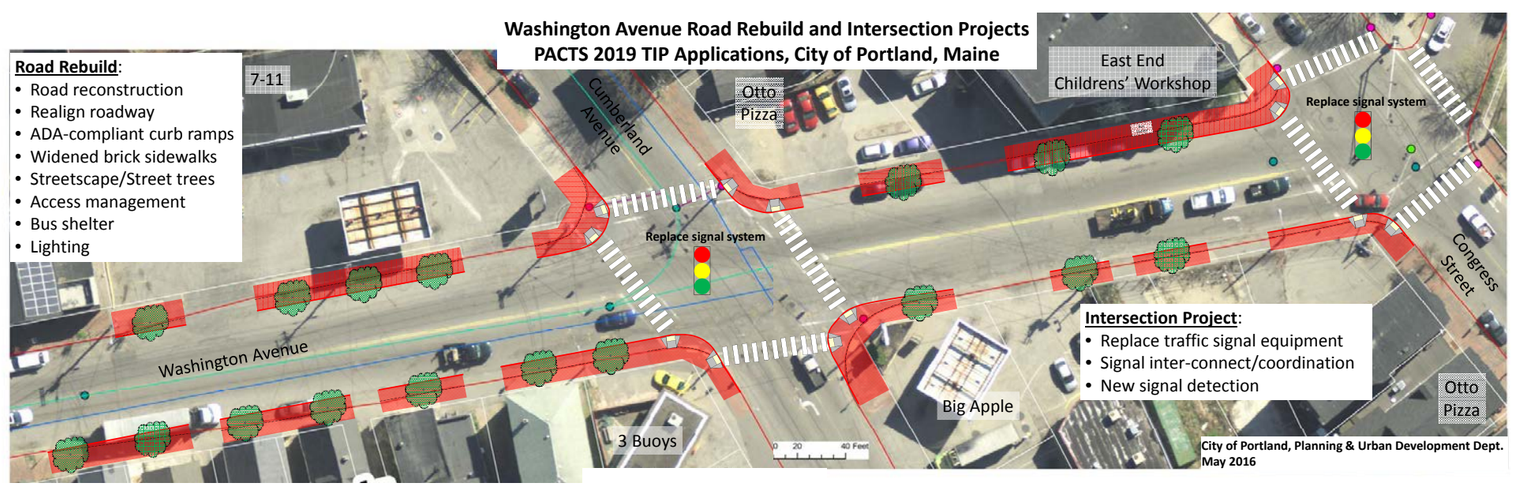


Figure 5-42: Washington Avenue/Cumberland Street Intersection. Source: Planning and Urban Development

5.7.2 – Traffic Modeling

The Congress Street and Cumberland Avenue intersections were modeled in the 2035 future condition under the proposed layout. The operational change to this intersection simulated is to limit the ability of vehicles traveling southbound making a right hand turn onto Cumberland Avenue Westbound from getting around through and left turning cars to make this movement. With this change the intersection continued to operate acceptably.

5.7.3 – Pedestrian and Bicycle/Streetscape

Washington Avenue has a 42-foot curb-to-curb configuration with 8-foot parallel parking on both sides and 13-foot travel lanes. This configuration is not wide enough to allow for a dedicated bike lane. Recommendations for Washington Avenue include:

- Repave the entire roadway from the Eastern Prom intersection to Congress Street;
- Install shared lane roadway symbols and signage;
- Install curb extensions at the intersections of Fox Street and Walnut Street with Rectangular Rapid Flashing Beacon (RRFB) at the crosswalks;
- Install curb extensions at the Monroe Street and Oxford Street crosswalks; Consider installing RRFBs;
- Provide consistent sidewalk plowing and sanding/salting for Oxford Street and Washington Avenue;
- Install crosswalks at all street intersections including at the Gould Street Pocket Park;
- Provide pedestrian amenities, e.g., benches, shelters, shade trees at all bus stop locations; and
- Remove the guardrail at the top of Gould Street and continue the construction of a pocket park in this location, which is also a bus stop.

5.7.4 – Transit

METRO Routes 7 and 9 travel on Washington Avenue, providing connections to Falmouth and northwest Portland via Route 1. Specific bus stop relocations and modifications are not proposed for this focus area. Bus stops are adequately spaced apart and provide reasonable crosswalk connections. However, bus stops along this corridor would benefit from bus stop design standards discussed in this report of prohibiting parking in bus stops, reducing interference with driveways, and enhancing pedestrian access to and from the bus stops. The majority of bus stops are located near-side of the intersection and although there are no signalized intersections, the parking impacts of lengthening stops to provide adequate curb space could be reduced if stops were relocated far-side.

5.7.5 – Land-Use

- Maintain and expand both market rate and affordable housing stock;
- Continue to encourage redevelopment north along Washington Avenue to I-295; and
- Develop policies to maintain the dynamic mix of uses along Washington Avenue. Washington Avenue is now a destination neighborhood all day.
- Inventory surface parking lots in the area and identify potential infill opportunities. Inventory existing parking needs and impact of build-out scenarios.
- Washington Avenue is a key gateway neighborhood and street to Portland. New development should reinforce the importance of the area as pedestrian-friendly and visually diverse.
- Continue to work with Portland Trails and other organizations to improve connectivity between Bayside and Munjoy Hill.

5.8 General Pedestrian and Bicycle Recommendations

5.8.1 Sidewalks

The sidewalk materials within the study area consist of brick, concrete, asphalt and wear paths in the grass. The condition of the sidewalks vary from excellent, where they have been recently rebuilt to non-existent. An assessment of the type, width and condition of every sidewalk within the study area was outside the scope of work for this study. An overall review of where sidewalks exist or do not exist, including crosswalks was included in the existing conditions section of this report. General recommendations for sidewalks include:

- Prioritize where sidewalks are needed, in locations where they are currently nonexistent. Some areas where sidewalks are missing it is evident that they are needed by the heavily used wear path in the grass.
- Develop a Sidewalk Replacement and Repair Program for the Bayside Area, which would identify safety issues such as missing bricks or concrete, holes or cracks in the pavement, heaving from tree roots or other, raised/sunken/uneven pavement that creates a tripping hazard, cause water to pond and potentially freeze, or does not comply with ADA guidelines, missing detectable warning strips, and missing vent or manhole covers.
- Continue to request maximum width sidewalk construction during Planning Application Site Plan reviews.
- Where feasible, sidewalks should be provided on both sides of the street. A sidewalk on only one side forces pedestrians to either walk in the street or cross the street twice to get to the side with a sidewalk and back again.

5.8.2 Lighting

This study focuses on all modes of transportation. The streets widths and speeds vary, some streets have or will have bike lanes, some will not, sidewalk widths and roadway offsets vary, and there are different types of neighborhoods. All these factors require different lighting levels, mounting heights, budgetary, and even aesthetic considerations. For this study area, there is no "one size fits all" lighting standard that can be imposed. Lighting should be thought of in more ways than just a technical requirement, or minimal safety needs. Lighting type, placement, and wattage can affect how a street, sidewalk, bikepath or public space is perceived and used by motorists, cyclist and pedestrians.

The City currently has some Municipal Street Lighting Standards in Section 10 of the City of Portland Technical Manual http://me-portland.civicplus.com/DocumentCenter/Home/View/2344.

The City has established special street lighting districts in the following areas within this Study Area:

- West Bayside;
- Downtown (includes portions of Cumberland Avenue);
- Old Port; and
- Trails and pathways, including Eastern Promenade Trail, Fore River Trail and Bayside Trail.

Each lighting district is subject to individual street lighting specifications including but not limited to fixture type, pole and base type, pole height to top of fixture, pole spacing and color. Please refer to City plans for the boundaries of Portland's street lighting districts. For areas of the City outside the special street lighting districts, the general standards under 10.2 shall apply.

This study recommends that more specific lighting studies should be performed for individual roadways or Districts, e.g., Marginal Way from end to end and East Bayside. That street and sidewalk lighting should be part of an overall streetscape design in conjunction with other elements, such as benches, bus stops, and waste receptacles. This approach will reflect the pedestrian-oriented quality of the streets, and can potentially enable the off-street area (sidewalks, plazas, pocket parks) to be more conducive to pedestrian and merchant activities.

The Project for Public Spaces recommends the following ways in which lighting should be evaluated and used:

- **Transit stops**—People feel more secure when bus stops are well-lit. Lighting also draws attention to and encourages use of such amenities.
- **As a traffic-calming device**—The difference between a pedestrian-lit street and a highly illuminated highway or highway off ramp automatically signals drivers that they have entered a new and different zone, and compels them to slow their driving speed.
- **Edges**—The edges of a park or plaza, particularly any interesting gateposts, fences, and specimen trees visible from the adjacent street -should be lit to help define and identify the interior space. Buildings located on the edges of a park can also have seasonal lights, bringing attention to the larger district beyond the park.
- **Entrances**—Careful evening lighting around building entrances, especially in residential building doorways, contributes to the safety of a district even more than indiscriminate use of bright lighting that is not focused on areas of use.
- **Retail displays**—Lighting retail displays, even when stores are closed, not only provides ambient light for the street, but also encourages window-shopping. This tactic can help to increase the number of people on a street, which is a major contributor to security.
- **Architectural details**—Lighting entrances, archways, cornices, columns, and so forth can call attention to the uniqueness of a building, place, or district and bring a sense of drama to the experience of walking at night.
- **Wayfinding Signage**—Well-lit maps, along with directional and informational signage, are essential to providing orientation at night.
- **Focal points**—Lighted sculpture, fountains, bridges, towers, and other major elements in a district, especially those visible to passing pedestrians and vehicles, provide another form of wayfinding.

Additionally and most importantly for this study would be to ensure that roadway intersections, especially the multi-vehicle lane, wide intersections be well lit for safety reasons. Focus should be given to crosswalks and the interaction with bike lanes.

5.8.3 Streetscape

Streetscape elements or amenities include street furniture, trash receptacles, bike racks, planters, street trees and landscaping. New streetscape elements should be compatible in scale, design and style with the surrounding setting, which changes continuously throughout Bayside. New amenities should be compatible with the appearance and scale of adjacent buildings, roadway and public spaces. Curb cuts, driveways and off street parking should be carefully planned to protect the character of the streetscape and/or district. Use indigenous, salt tolerant plants for landscaping, when feasible. Signage is often a forgotten part of the streetscape and can make or break the aesthetics. Directional and informational signs should be identified and then located within the design so they are seen as an integral part of the street scene. Amenities should complement the building facade and streetscape in terms of design character, materials, finishes and color.

The existing street trees in the Bayside study area varies considerably. There are some streets, especially some of the older streets, that have large stately trees. Preble Street, Elm Street and Oxford all have large stately trees that are in healthy condition. Care should be taken to maintain existing healthy trees during roadway or private property construction projects.

- Request that all site plan applications provide a holistic Streetscape Amenities design as part of the application. Bike parking shall be determined according to the type of business and number of employees.
- Provide more access from Bayside Trail to adjacent businesses.
- Install emergency call boxes in isolated areas, streets, trails, etc.
- Allow for outdoor sidewalk chalk boards and seating within the public ROW as long as it does not create a safety hazard.

5.8.4 Public Space Opportunities

- Determine a permanent site Bayside Community Garden. Currently it is on a private site.
- Assess the opportunity for a Phoenix Square Park once the Somerset Street connection is made.
- Consider the real need for vehicular traffic on Kennebec between Preble and Elm. Consider possible use as a pedestrian space and extension of Phoenix Square.

Public Space Opportunities are illustrated on **Figure 5-43**.

Figure 5-43: Public Space Opportunities

5.9 General Transit Recommendations

Several transit related alternatives were developed for consideration in the context of the Bayside Transportation Master Plan. These concepts ranged from bus stop relocations to potential route modifications. Each of the alternatives, as well as those recommended further evaluation, are summarized below.

5.9.1 Route 8 Reconfiguration

1. **Stop Relocations**—The alternative bus stop relocations and eliminations considered are displayed in Figure 5-44.
2. **Operational Adjustments**—To improve operation of Route 8, it is recommended to build in bus layover time into the schedule. This will improve accuracy of expected bus time arrivals and improve route travel time predictability.
3. **Route Reconfiguration**—As a long-term recommendation, Route 8 should be evaluated within the context of the larger transportation system, with attention to the needs of East Bayside as development grows. The importance of a one-seat ride for Route 8 riders should also remain a priority.

Figure 5-46 at the end of this section summarizes the short-term transit recommendations for stop relocations. Details for these relocations and removals were provided in section 5.

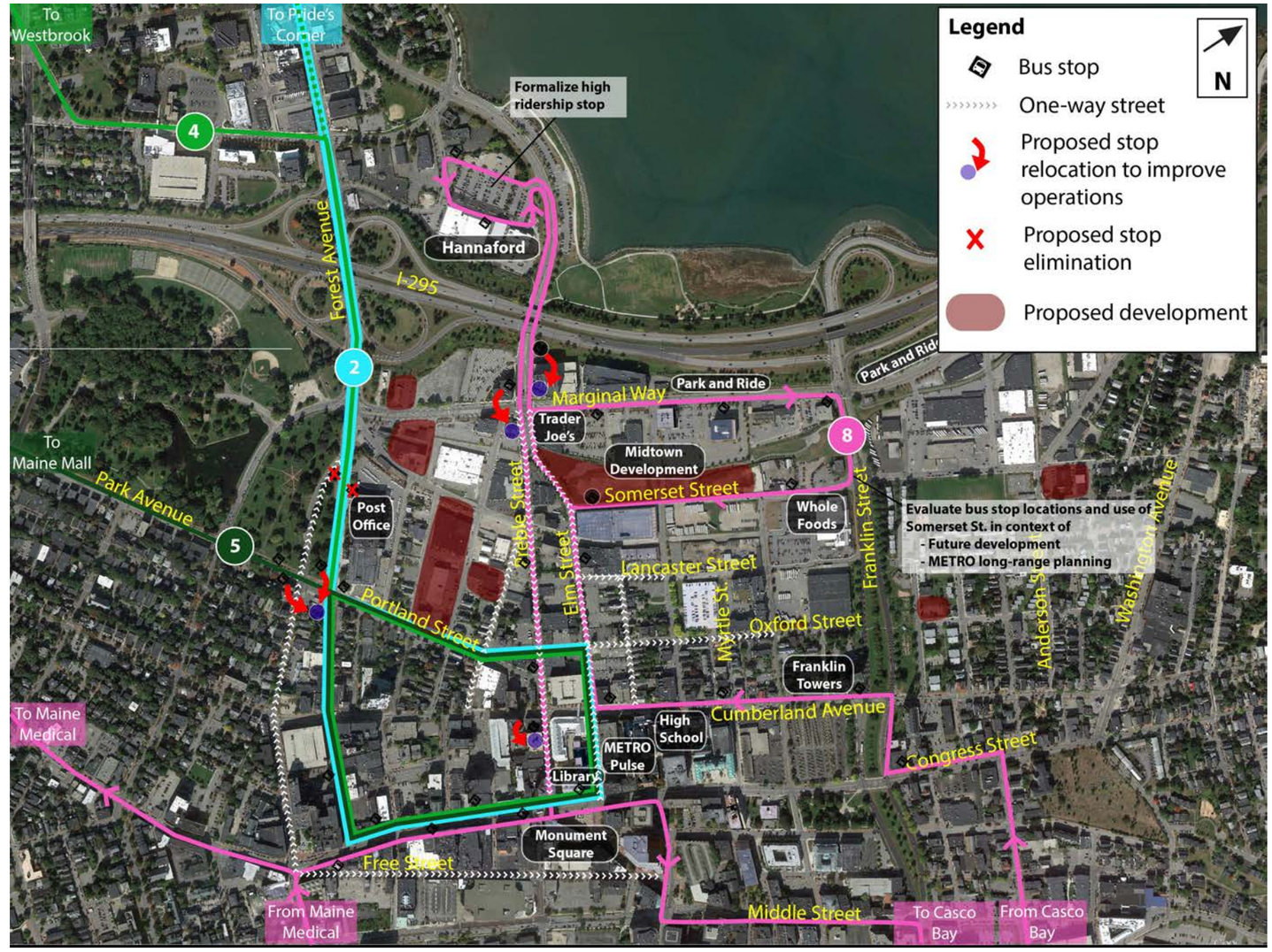


Figure 5-44: Proposed Alternative Bus Stop Relocations and Eliminations on Route 8

5.9.2 Two-way Preble and Elm Streets

1. **Two-way Preble and Elm**—Two-way Preble and Elm Streets will improve service to METRO Pulse as well as bus circulation throughout Bayside. With two-way streets, a bus-only street or "bus mall" could be considered.
2. **Preble Extension as Transit Priority Corridor**—Preble Extension was considered as a transit priority corridor for Routes 2, 4, and 8, as noted in the Peninsula Transit Study. Currently, Routes 2 and 4 run down Forest Avenue, make a loop around Congress Street, Elm Street, and Portland Street, and run back up Forest Avenue. Alternate routing was considered, which would re-route Route 2 and/or Route 4 from Forest Avenue to Preble Extension, as seen in **Figure 5-45**. The following steps are recommended:
   - **Short term**: It is recommended to keep Route 8 service on Preble Extension, and Route 2 and Route 4 service on Forest Avenue. With Preble Extension only serving a single route, it is not justified as a transit priority corridor in the context of other goals in the more immediate future.
   - **Mid-term**: Re-visit the potential of shifting Route 4 to Preble Extension within the context of METRO's overall planning for transit routes. Route 2 is likely to remain on Forest Avenue given high ridership demand along this corridor.
   - **Long-term**: While a transit priority lane has advantages, use of Forest Avenue rather than Preble Extension must be considered in the larger context of transit planning, City of Portland goals, and neighborhood needs.

Alternative routing for routes 2 and 4 from Forest Street left onto Portland and right onto Preble was also considered, but it not recommended. This recommendation did not move forward because of the need to service high rider demand stops on Forest Street, the direct connection to Congress Street the current routing provides, and other project goals for Portland and Oxford Street.

5.9.3 Park and Ride

Potential free Park and Ride on Marginal Way with transit connection via Pearl Street: As development in Bayside grows, consideration should be given to pursuing more transit connections between the Bayside neighborhood and downtown Portland. A connection from Marginal Way to Portland Street would help encourage more activity and bus travel in the area. Considerations for pursuing a park and ride with transit connections is the challenging topography between the Bayside neighborhood as it slopes up towards Congress Street.

5.9.4 Design Guidelines

- Management of curb space: Attention should be given to provide bus stop areas with appropriate lengths (ideally 80 feet). Curbs adjacent to bus stops should be absent of on-street parking and driveways, which can lead to vehicular conflicts with the bus.
- **Crosswalk location**: Crosswalks should be located to the rear of bus stops. Far-side stops (see Transit Service Section 2.2.1.9) enable this condition, as crosswalks are located at the intersection behind the bus stop. A crosswalk behind a bus stop is safer for pedestrians as they will be walking behind a bus as it moves forward, rather than trying to cross in front of the bus.
- **Accessibility**: Accessible stops require a 5x8 level landing area and curb ramps to crosswalks. Crossings that lack curb ramps, have very steep slopes, or lack proper landing areas, do not meet ADA requirements, and limit the accessibility of bus stops, especially for seniors and persons with disabilities.

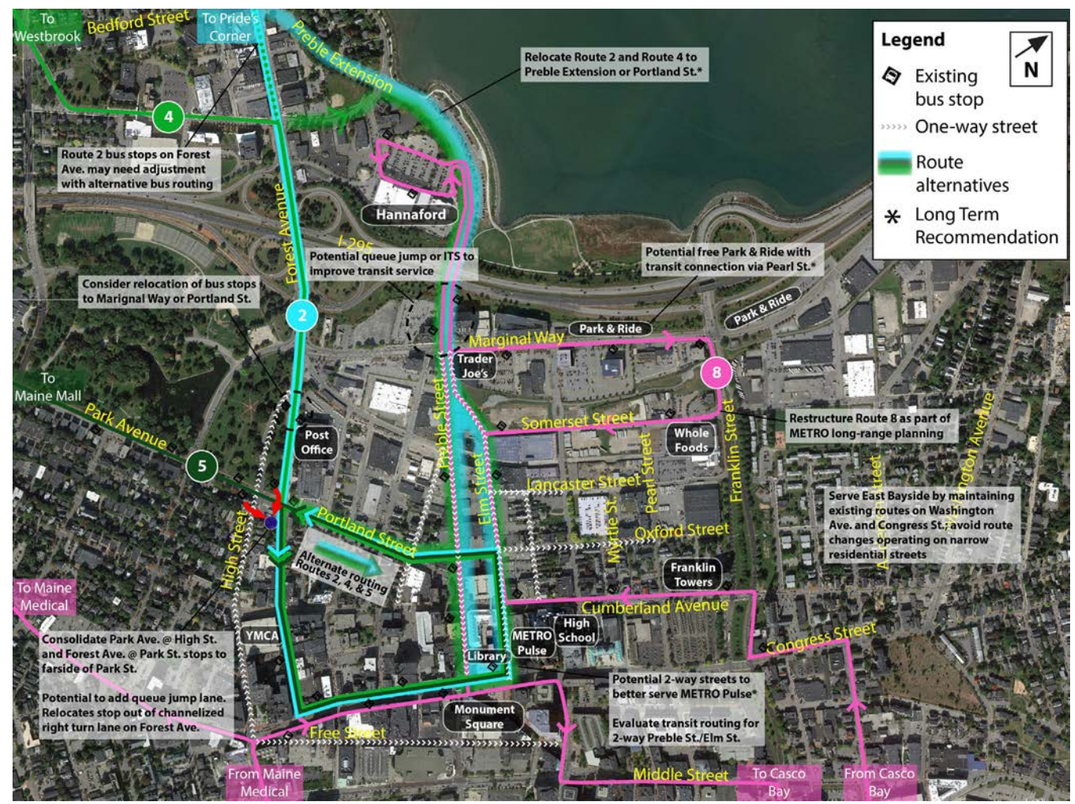


Figure 5-45: Proposed routing alternatives for Route 2 and Route 4 on Portland Street, Preble Street, and Elm Street

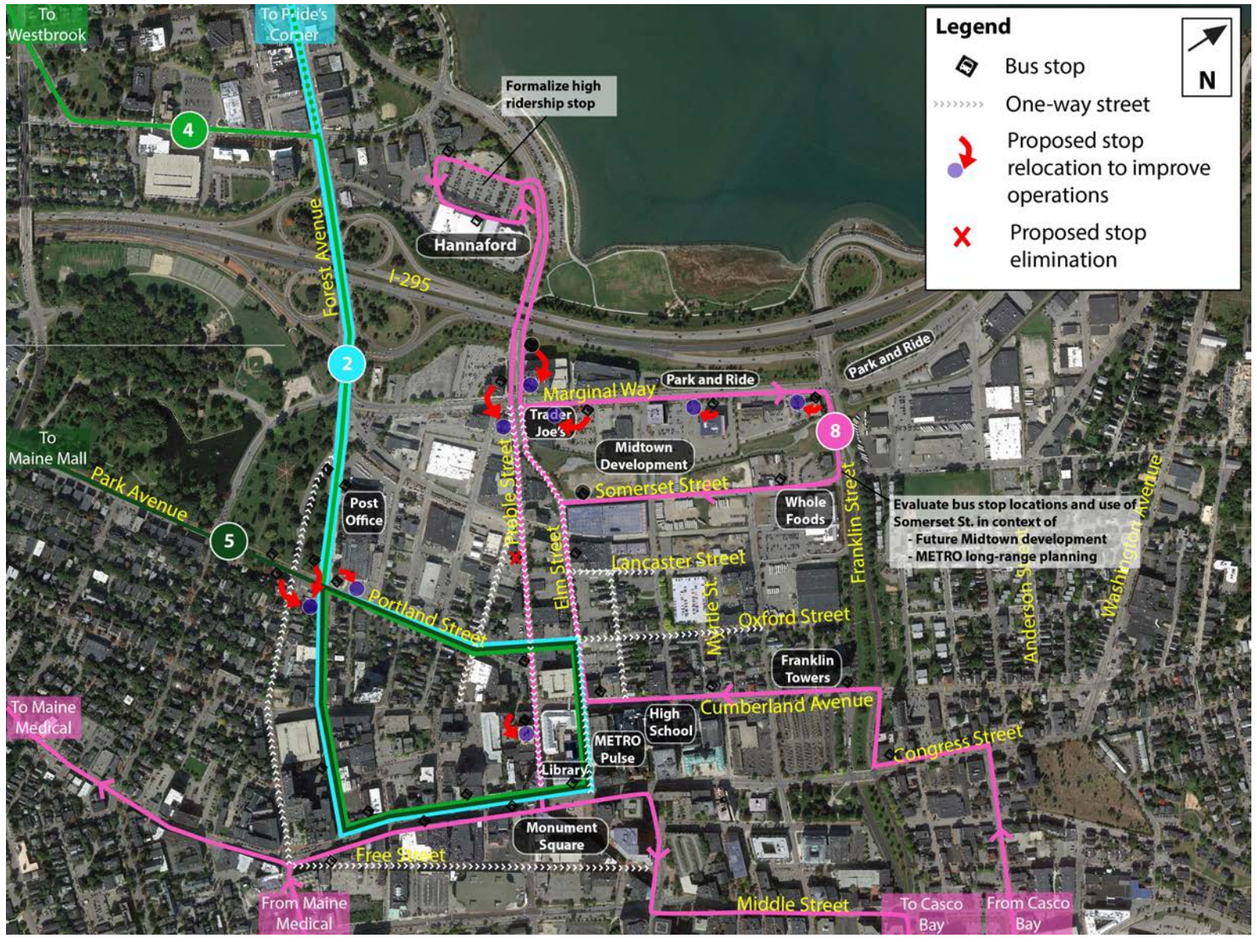


Figure 5-46: Short-term transit recommendations for stop relocations

Figure 5-47: Existing bus stop in Bayside to the left and bus stop with proper signage and amenities in Boston to the right

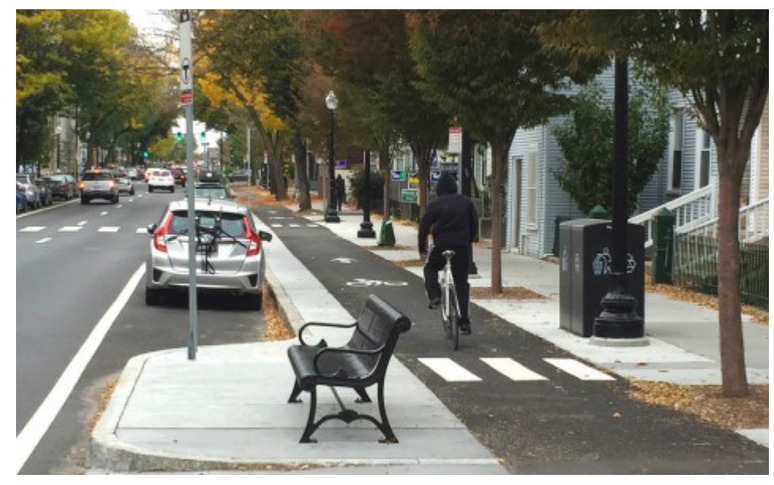


Figure 5-48: Example of cycle track behind a bus stop from MassDOT Separated Lane Planning and Design Guide

- **Bus stop amenities**: Where appropriate, bus stops should provide amenities such as a shelter, bench, trash/recycling receptacle, and route schedule. All bus stops should provide a front bus stop sign that is oriented to the curb to maximize visibility. An example of how bus stops could be enhanced with more amenities is shown in **Figure 5-47**
- **Bicycle lanes and bus stops**: Appropriate pavement marking treatment and signage should be provided where buses and bicycle lanes are in conflict. Although bus drivers may be able to re-enter traffic more easily when stopped in the travel lane, consideration needs to be given to the turns permitted in the lane and the direction of travel of the bus, the impact on overall traffic operations, and roadway space for overtaking a stopped bus.

Figure 5-48 is an example of cycle track behind a bus stop from MassDOT Separated Bike Lane Planning & Design Guide.

To avoid conflicts between bikes and buses, bike lanes should be dashed where they are adjacent to or fall within a bus lane, a shared bike-bus lane can be provided, or separated cycle tracks can be wrapped around the back of a bus stop. The recommended stop relocations in the Bayside neighborhood, as shown in **Figure 5-46,** seek to re-orient the bus stops to better conform to these types of guidelines, improving safety and efficiency. Moving forward it is recommended that PACTS, METRO, and the City of Portland work together to pursue developing bus stop design guidelines for future transit improvements in the METRO system, Bayside, and greater Portland.

5.9.5 Potential funding strategies

In conjunction with sidewalk improvements pursued for key corridors, considerations should be given to identifying sidewalk improvements that improve access to METRO bus stops. Improvements should be made in coordination with METRO and consistent with ADA Standards for Transportation Facilities.

Federal regulations under the Moving Ahead for Progress in the 21st Century (MAP-21) increases the emphasis on maintaining transit assets in a State of Good Repair. A new federal transportation bill was passed on December 4, 2015, Fixing America's Surface Transportation Act (FAST ACT), increasing funding for transportation programs for the next five years. METRO could partner with the City of Portland to implement transit enhancements, now known as "associated transit improvements" under MAP-21. These transit improvements include streetscape improvements on public rights-of-way, bicycle accommodations at stations such as METRO Pulse, and improved accessibility in compliance with the Americans with Disabilities Act (ADA). Pedestrian and bicycle improvements within a one-half mile of a transit stop (including bus stops) have a de facto functional relationship to public transportation. (Federal Register, volume 76, 161, August 19, 2011)[1]. The U.S. Department of Transportation launched the Safer People, Safer Streets Initiative in 2014 strengthening this option. In other words, the pedestrian and bicycle improvements the Bayside Transportation Master Plan seeks to advance could be pursued through alternative funding mechanisms if the improvements could increase use of public transportation. The Greater Portland Council of Governments has secured funding to work with PACTS transit providers to do this.

Throughout the Bayside Transportation Master Plan process, a wide range of stakeholders collaborated to reach the recommendations in this report (see Section 6.1). Ongoing collaboration between City of Portland, as the primary owner of roadways in the study area, and METRO as the transit provider, is essential for the successful implementation of roadway improvements that benefit all modes of transportation. A continued partnership approach among PACTs, City of Portland, METRO, and private development allows limited funding to be pooled for more timely results.

1 http://www.gpo.gov/fdsys/pkg/FR-2011-08-19/pdf/2011-21273.pdf

6.1 PUBLIC OUTREACH PROCESS

Approach

To reach a rapidly evolving neighborhood that includes residential, retail and commercial interests, the team developed a broad-based and accessible public outreach program that provided multiple opportunities and venues for input. The overall vision and direction for this neighborhood had already been identified; the 2000 vision of Bayside as a sustainable, mixed-use, transit-oriented neighborhood remains the model for which this study provides a framework.

The most significant challenge from a public outreach perspective was to find a way to clearly communicate the multitude of locations, choices and issues that would be addressed as part of the study. Knowing that providing too much information would guarantee scattered and incomplete feedback, the team directed comments toward the city-identified focus areas (Marginal Way, Portland and Oxford Streets, Lancaster and Kennebec Streets, Pearl Street, and Preble and Elm Streets), as well as Transit Access and key locations in East Bayside/Washington Avenue. The team also included an opportunity for specific feedback on public space, since changes in transportation use would create new opportunities for this important component.

Creating Awarness

The first step in a successful public outreach program is simply making sure that those people who would be affected by any changes are aware of the process—and have a convenient and easy way to learn and comment. The primary method of identifying such people is geographical—those that live, work, run businesses, or own property in the study area. Elected officials, adjacent neighbors, and those who are involved in projects close by are also target audiences, as well as such critical partners as related state agencies, and transportation providers. Awareness was generated for the Bayside Study via the following processes:

Traditional Media—Working with the City of Portland, a press release was developed prior to each public workshop, covering the reason for the study, identified focus areas, and an overview of the public comment opportunities. For the second and third workshop, this press release was updated to include an overview of the feedback received to date. Follow-up with key reporters took place in an effort to generate coverage prior to the workshop. The Forecaster was reliable in its coverage; see link to sample article on final workshop: http://www.theforecaster.net/portland-bayside-transportation-plan-nears-completion/. The Press Herald was less so, but did run an article prior to the first workshop: http://www.pressherald.com/2015/09/14/portland-to-consider-bikes-and-pedestrians-in-transportation-forums/.

Social Media/Partnerships—Rather than create a special Facebook page for this short-lived study, the team worked with key partners to post updates on their pages regarding workshops and feedback opportunities. The East Bayside Neighborhood Organization, the Bayside Neighborhood Association, and the Bicycle Coalition of Maine, were all very helpful in posting timely information on meetings and other outreach opportunities.

Email Outreach—Morris Communications has compiled a large (450 +/-) email list of individuals who are interested in transportation issues and studies in Greater Portland. Email flyers for all three workshops and the open house were sent out at least three times per event. As opposed to people feeling "email fatigue," many people expressed appreciation for ongoing updates. In addition, the City contributed to outreach by including workshops and the open house as part of its email alert system. A one-page Question and Answer (Q&A) sheet was created to use both as a handout by City staff, and as part of the emails.

Public Feedback Opportunities

As noted above, the team provided multiple opportunities for feedback. The below summarizes the categories of information presented at each venue and the general feedback received. Workshops generated between 30 and 45 individuals at each session. Presentations and all public input are available at http://shscs.engagingplans.org/documents.

Public Workshop #1 - September 15, 2015—The purpose of this workshop was to familiarize everyone with the purpose of the study—essentially of making Bayside easier and safer for all modes to move around—as well as highlight the focus areas within the study area. The meeting agenda covered existing conditions within the focus areas and asked the public for general feedback on opportunities for improvement throughout the study area.

AGENDA

Welcome and Team Introductions

- Study Background, Process and Schedule
- Public Feedback Opportunities
- Draft Purpose and Need Statement
- Existing Conditions/Issues and Opportunities
  - ◊ Marginal Way
  - ◊ Pearl Street
  - ◊ Portland and Oxford Streets
  - ◊ Reconnected Lancaster Street
  - ◊ Configuration of Preble and Elm Streets
  - ◊ Transit Access and Service
- Next Steps
- Workshop

Feedback: Comments were extensive, from minor suggestions on street names to "big ideas" for significant changes at intersections and one-way/two-way combinations. Participants were very interested in making the neighborhoods safer and easier to navigate, as well as adding public space. Comments from this workshop are at http://shscs.engagingplans.org/document/3a-what-we-heard-sept-15-bayside-workshop.

Figure 6-1: Help Fulfill Bayside Vision PublicWorkshopFlyer–September15, 2015

Figure6-2:SeeNewTransportationIdeas for Bayside Flyer – October 29, 2015

Public Workshop #2 - October 29, 2015—For this second workshop, the team looked at feedback from the first meeting and the portlandstudies.org feedback and incorporated the suggestions into a series of early recommendations for each focus area. This allowed the team and City staff to hear more detailed feedback around the various choices. Making Oxford Street, Preble Street, and Elm Street two-way drew major consideration. Adapting Lancaster and Kennebec Streets as shared streets was also proposed. The treatment of Marginal Way and Forest Avenue intersections in particular drew much discussion.

AGENDA

Welcome and Team Introductions

- Study Background, Process and Schedule
- Public Feedback Opportunities
- Draft Purpose and Need Statement
- Existing Conditions/Issues and Opportunities
  - Marginal Way
  - Configuration of Preble and Elm Streets
  - Reconnected Lancaster Street
  - Kennebec Street
  - East Bayside
  - Transit Access and Service
- Next Steps
- Workshop

Feedback: Many comments were generated. There was no clear consensus on making Preble and Elm Streets two-way; comments reflected pros and cons of both solutions. There was significant support, though not unanimous, for making Oxford Street two-way, as well as for adding a full vehicle connection at the Oxford Street/Franklin Street intersection. Interest in better linking the Bayside Trail at Franklin Street was also strong. Based on feedback from the first meeting, a station on Public Space (staffed by Portland Trails) was added to help identify new locations that could be added as the neighborhood developed. Full comments are at http://shscs.engagingplans.org/document/2a-what-we-heard-october-bayside-meetings.

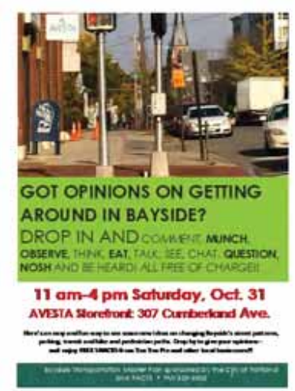


Figure 6-3: Got Opinions on Getting AroundBaysideFlyer–October31,2015

Public Open House – October 31, 2015—The team experimented with a new feedback opportunity for this study. In an effort to draw participants who would not ordinarily attend a meeting or go online to comment, an informal open house was staged on a Saturday, partnering with Avesta in their sidewalk-adjacent conference room on Cumberland Avenue in one of the more active parts of the study area. Food and coffee was served, and displays and stations were the same as at Public Workshop #2, but participation was on a drop-in basis, so no presentation was made. Participation was fairly low, with about 20 individuals attending over a 5-hour period. About half were new faces; the others were people who had been unable to make the October 29th workshop. Everyone was very appreciative of the convenience. Comments gathered are incorporated into the October 29th workshop feedback. While perhaps not the most efficient use of time on a per-person basis, this concept would be very effective in a study area that had a central area with more foot traffic, and/or if it could be up and running for a week or so. It provides a good opportunity for informal conversation and the chance to talk with people outside of the usual sphere of influence, and so remains a good tool for a serious public outreach process.

Figure 6-4: FINAL WORKSHOP! Flyer – December 10, 2015

Public Meeting #3 – December 10, 2015—This last workshop presented final recommendations, with an emphasis on lower cost and immediate changes that could be incorporated into the study sooner rather than later. Longer term, more expensive options were included where appropriate. Because of the detail involved in these plans, the presentation lasted longer than at other meetings; about 40 minutes was still made available for written comments. In general, draft recommendations included Oxford Street moving to two-way, Preble and Elm Streets staying one-way with an added bike lane and buffer, and modified intersections at Marginal Way and Franklin Street, Marginal Way and Preble Street/Elm Street, and Marginal Way and Forest Avenue.

AGENDA

Presentation

Welcome and Team Introductions

- Study Background, Process and Schedule
- Public Feedback Opportunities
- Draft Purpose and Need Statement
- Existing Conditions/Issues and Opportunities
  - Configuration of Preble and Elm Streets
  - Pearl Street Future Connection
  - Portland and Oxford Streets
  - Forest Avenue/Park Avenue/Portland Street
  - Lancaster Street
  - Kennebec Street
  - East Bayside
  - Washington Avenue
  - Marginal Way
  - Transit: Long-term Considerations
- Next Steps
- Workshop

Feedback: In general, recommendations were met with support and positive feedback, with specific suggestions on details like intersection geometry at Plowman Street, access out of the Elm Street Parking Garage, adjustments to the Forest Avenue intersection, and suggestions for adding crosswalks on Oxford Street. Parking concerns about the two-way change on Oxford Street were also reiterated. The oral comments made during the meeting and the written workshop comments can be found at http://shscs.engagingplans.org/document/1a-what-we-heard-december-bayside-workshop.

Website – www.portlandstudies.org:

Figure 6-5: PortlandStudies Transportation Website

This interactive web platform was used to post study information (meeting alerts, meeting PowerPoints and meeting comments), along with posing specific questions about study issues.

Opportunities to answer these question ran from the end of September through the end of October and comments were viewable online during that time. The four questions posted were:

1. Should Preble and Elm Streets be two-way?
2. What's most important for Oxford Street?
3. What short-term improvements are needed for Marginal Way, and
4. How could we connect PHA properties to the larger neighborhood.

There were 14 individuals who answered these questions; the format encourages longer, more thoughtful answers with an attribution. This group generally wanted two-way streets instead of one-way; was very interested and specific in comments on safety and pedestrian/bike needs, and also included comments from the Chamber (Chris O'Neil) and property owner Brent Noyes. See details at http://shscs.engagingplans.org/document/1b-what-was-posted-portlandstudiesorg.

6.1.4 Other Key Stakeholder Outreach

Other key stakeholders were also part of the outreach process in smaller meetings during the study process:

MaineDOT

As a major stakeholder, the team and City staff sent materials to MaineDOT for review and feedback prior to each public meeting, as well as meeting with staff at key points. MaineDOT staff also attended each of the three workshops and participated in terms of listening and providing the DOT viewpoint to the public as needed. This contributed to a smooth study process with no surprises for any of the team members.

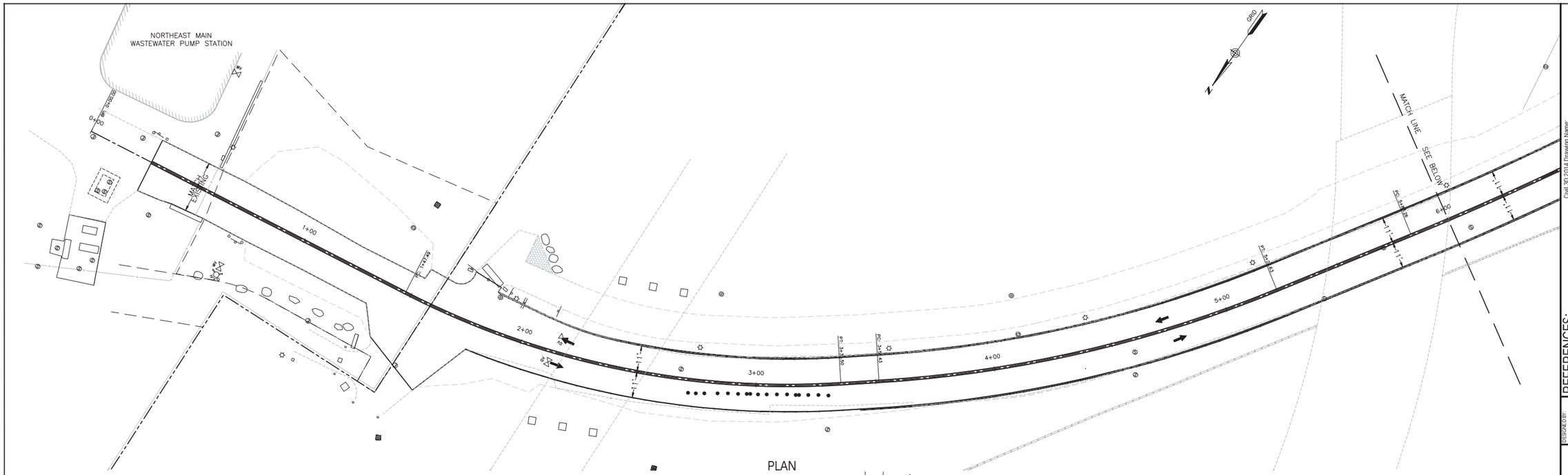
METRO

City staff and Metro Manager Greg Jordan met on August 5th to identify existing conditions and issues/opportunities. In addition, there were periodic exchanges of transit data by email and an intensive work session on November 23rd attended by the consultant team, City staff, and Metro staff.

Affected Businesses and Organizations

Outreach to property owners (Brent Noyes and Peter Quesada), and the Postmaster General, was part of the process in order to identify issues about changes in bus stops and potential improvements. A follow-up communication was sent to the Postmaster General to allow them to comment on changes proposed in front of the Portland Street entrance.

APPENDICES



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2. ALL PAVEMENT MARKING LINES SHALL BE PAINT AND 4" WIDE, EXCEPT FOR;
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   DASHED WHITE LANE LINE ALONG MARGINAL WAY–6"
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5. REMOVE ALL CONFLICTING EXISTING PAVEMENT MARKING LINES.

SYMBOL AND ARROW NOTES:

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2. SYMBOLS AND LETTERS SHALL BE PROPORTIONED ACCORDING TO THE GRID SHOWN.
3. SPACING BETWEEN CHARACTERS SHALL BE ONE UNIT, BUT VISUAL SPACING MAY BE USED.

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DYCL – DOUBLE YELLOW CENTER LINE
SWEL – SOLID WHITE EDGE LINE
DWEL – DASHED WHITE EDGE LINE

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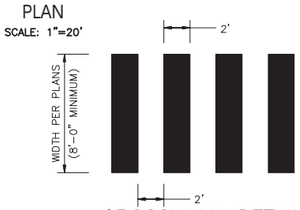

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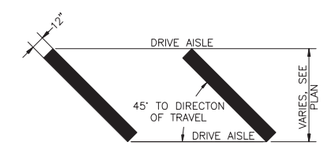

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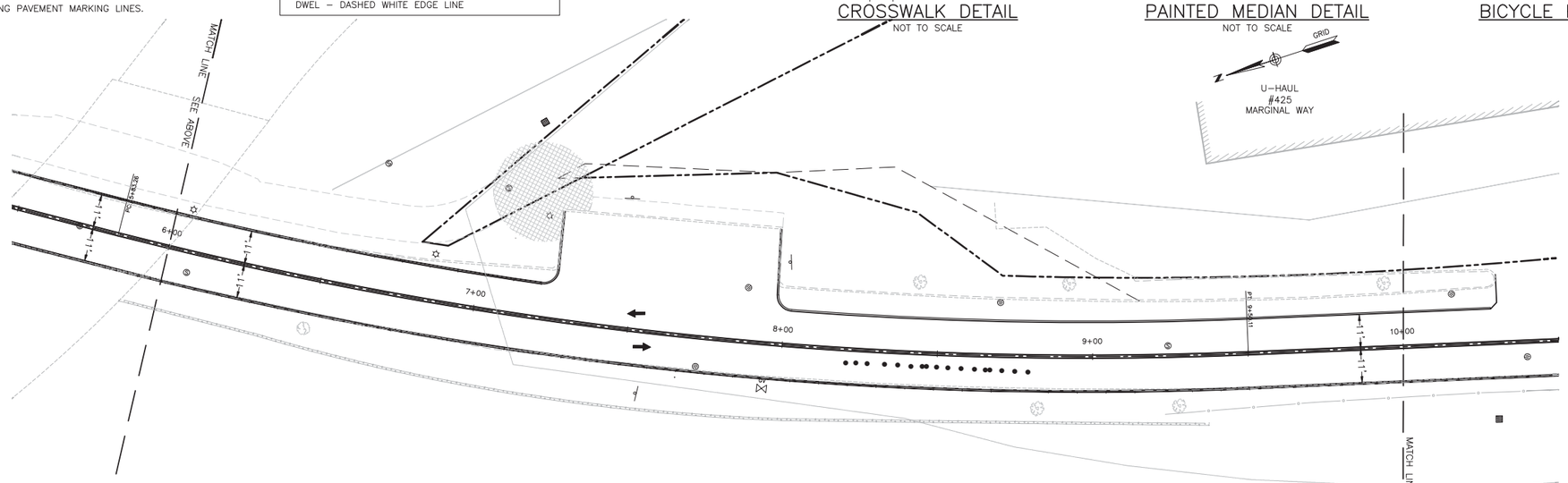

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DATED 12–30–2015

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Civil 3D 2014 Survey Database:
Civil 3D 2014 Data Shortcuts:

REVISIONS:

DESIGNED BY:	DTW
DRAWN BY:	CGH
CHECKED BY:	ZE
SCALE:	AS NOTED
DATE:	12/30/2015

BACK COVE SOUTH
STORAGE CONDUIT

PAVEMENT MARKING PLAN

STATIONS 0+00 TO 10+00

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING DIVISION

SHEET #
OF

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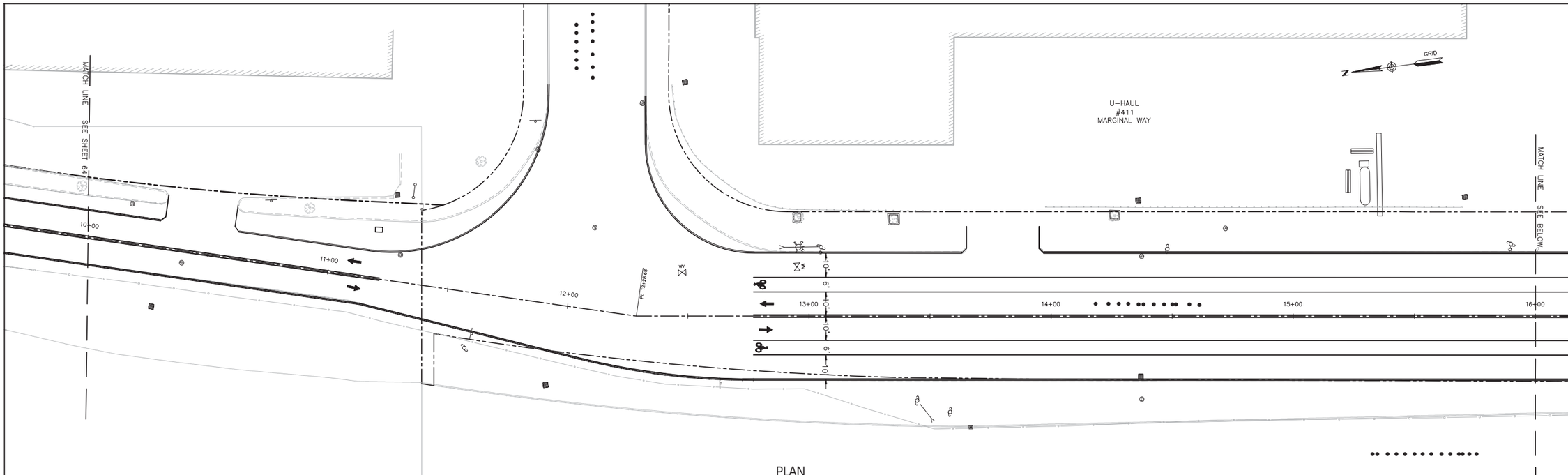

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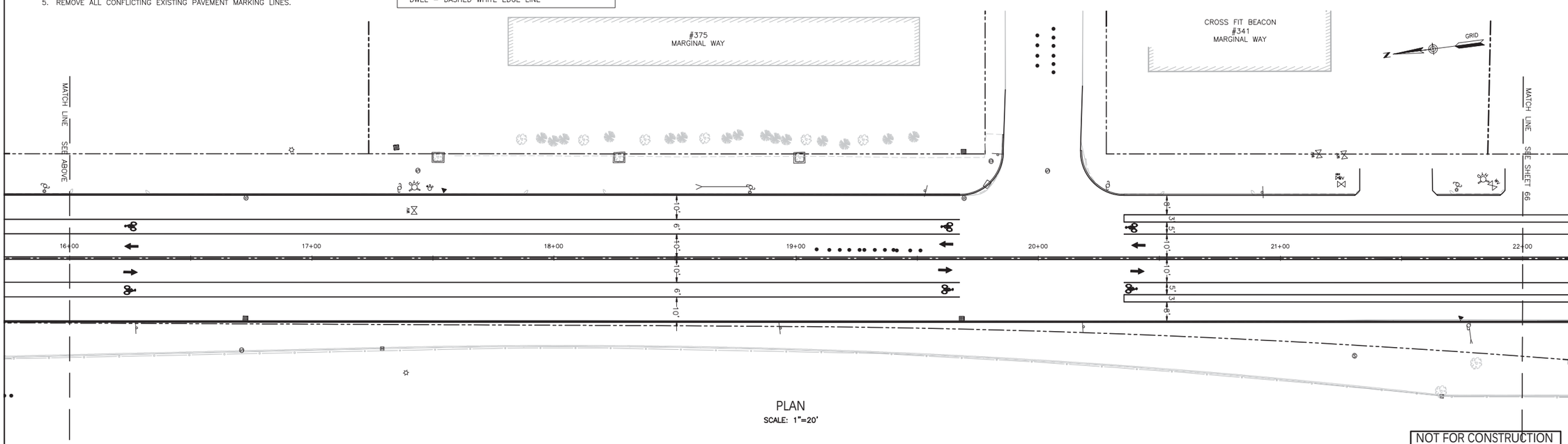

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PAVEMENT MARKING PLAN

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CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING DIVISION

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OF

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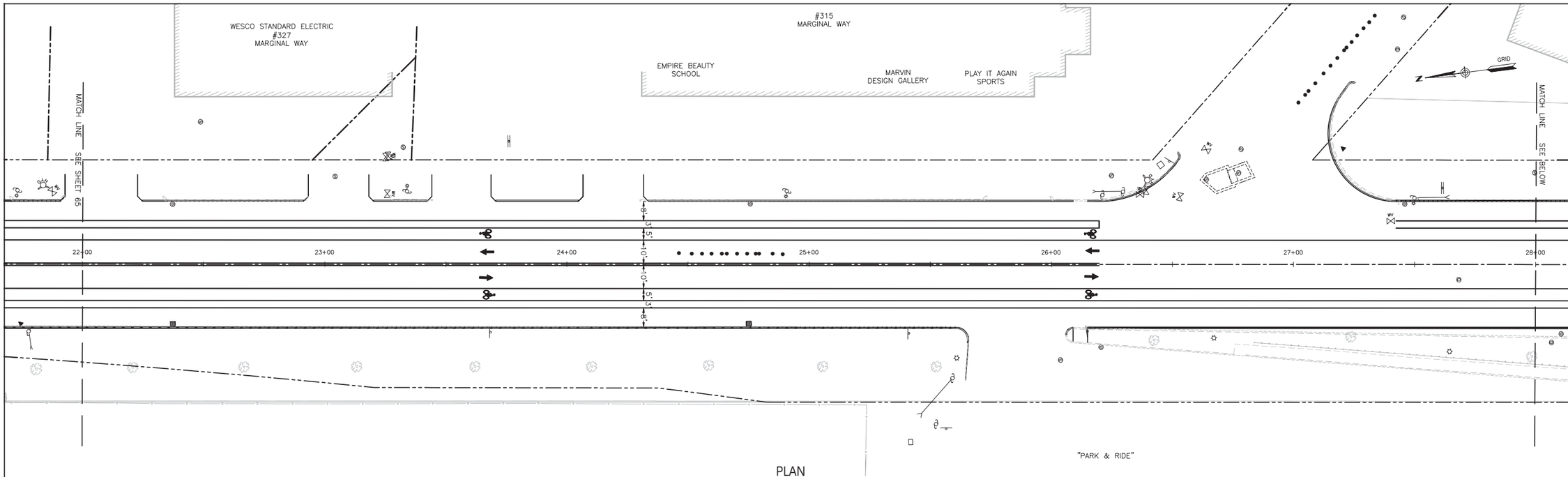

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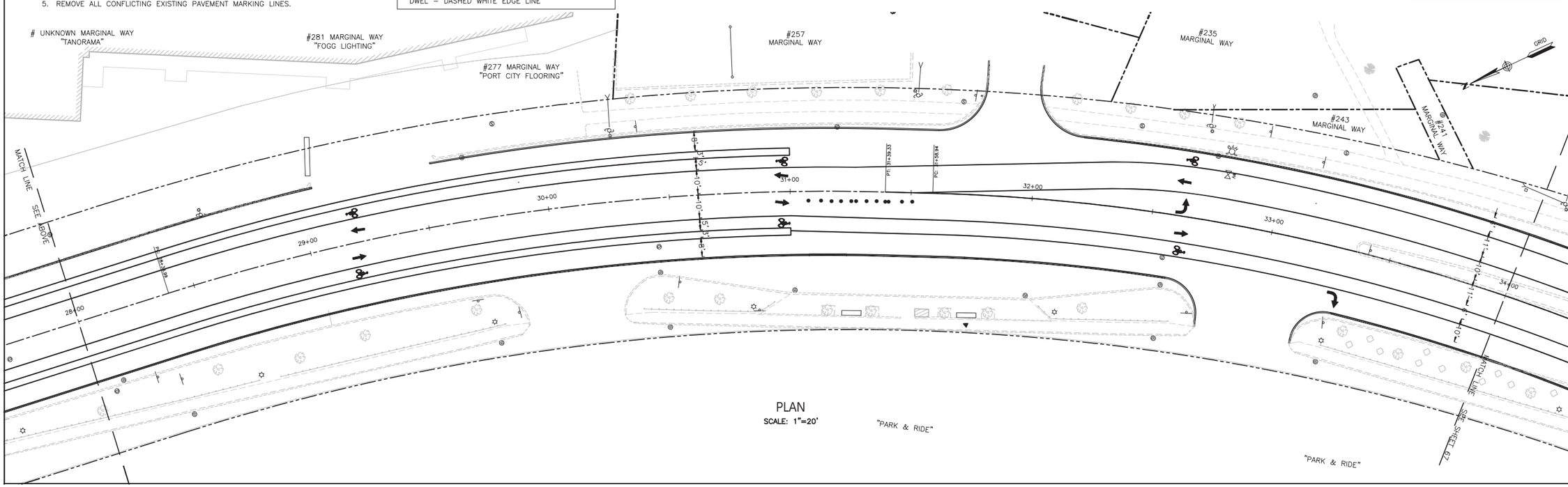

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STORAGE CONDUIT

PAVEMENT MARKING PLAN

STATIONS 22+00 TO 34+00

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING DIVISION

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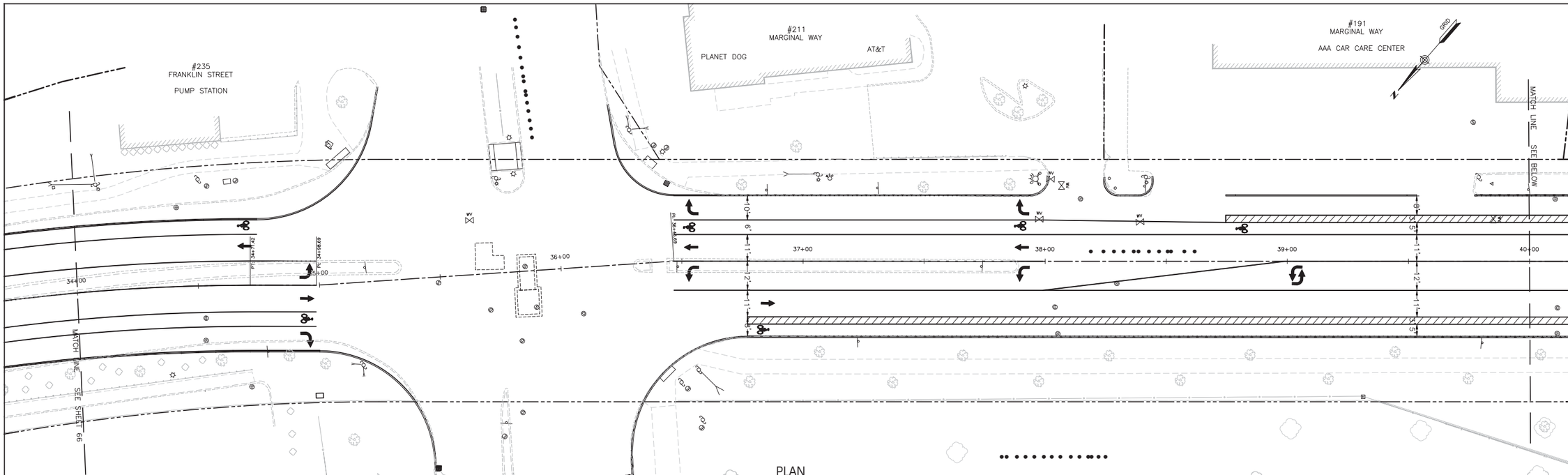

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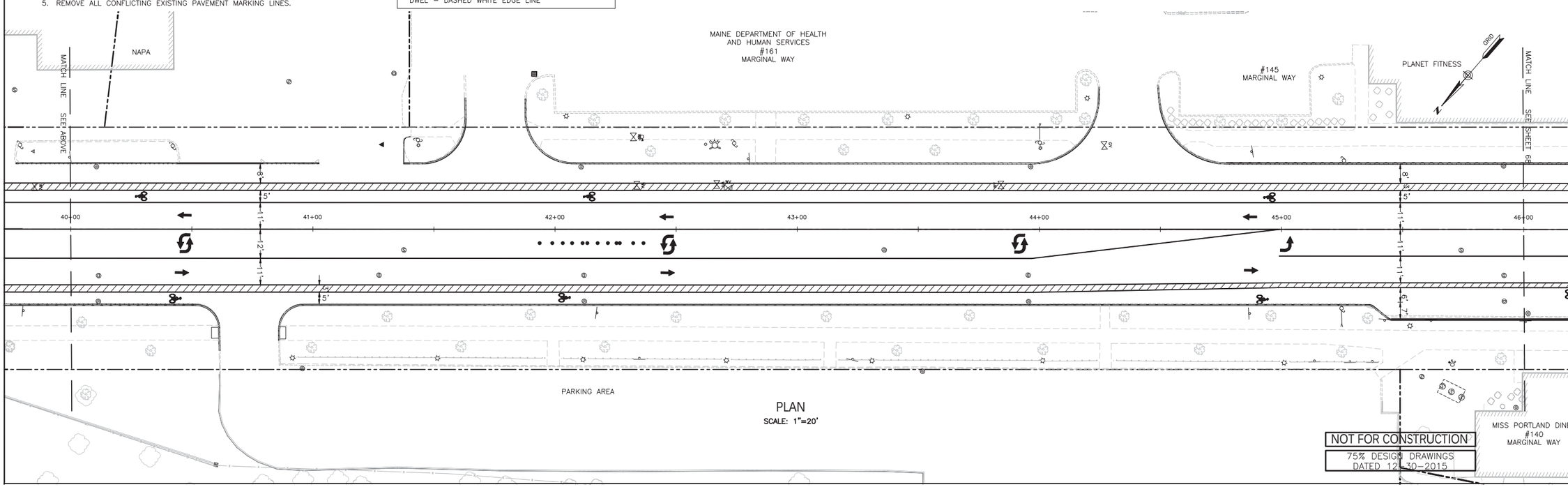

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PAVEMENT MARKING PLAN

STATIONS 34+00 TO 46+00

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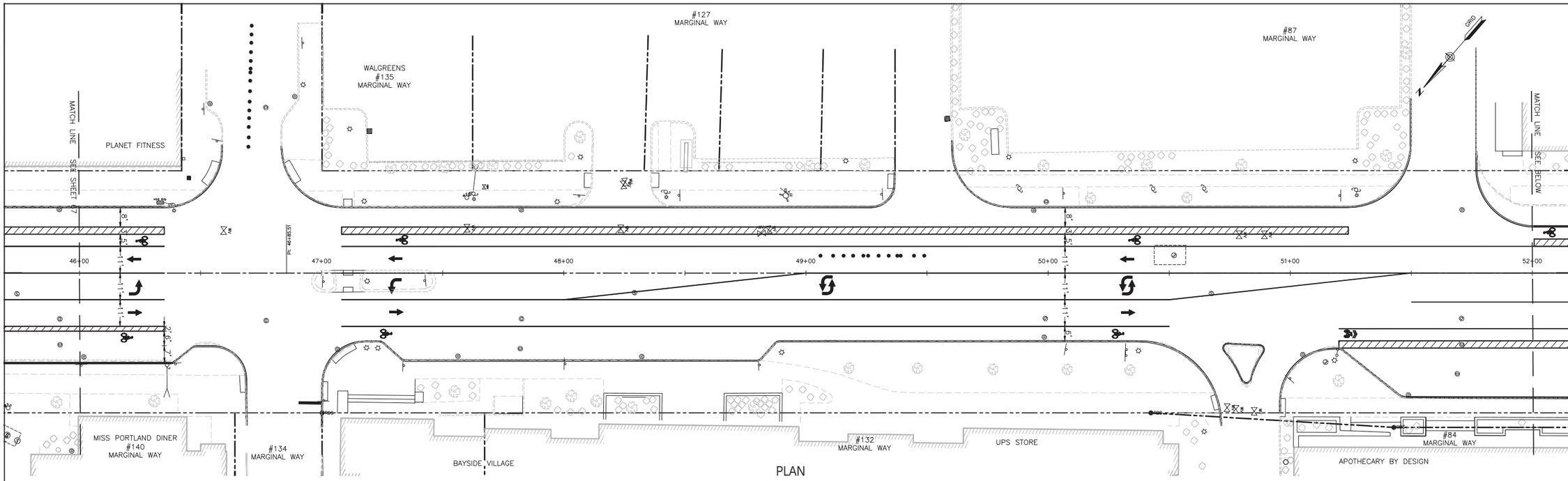

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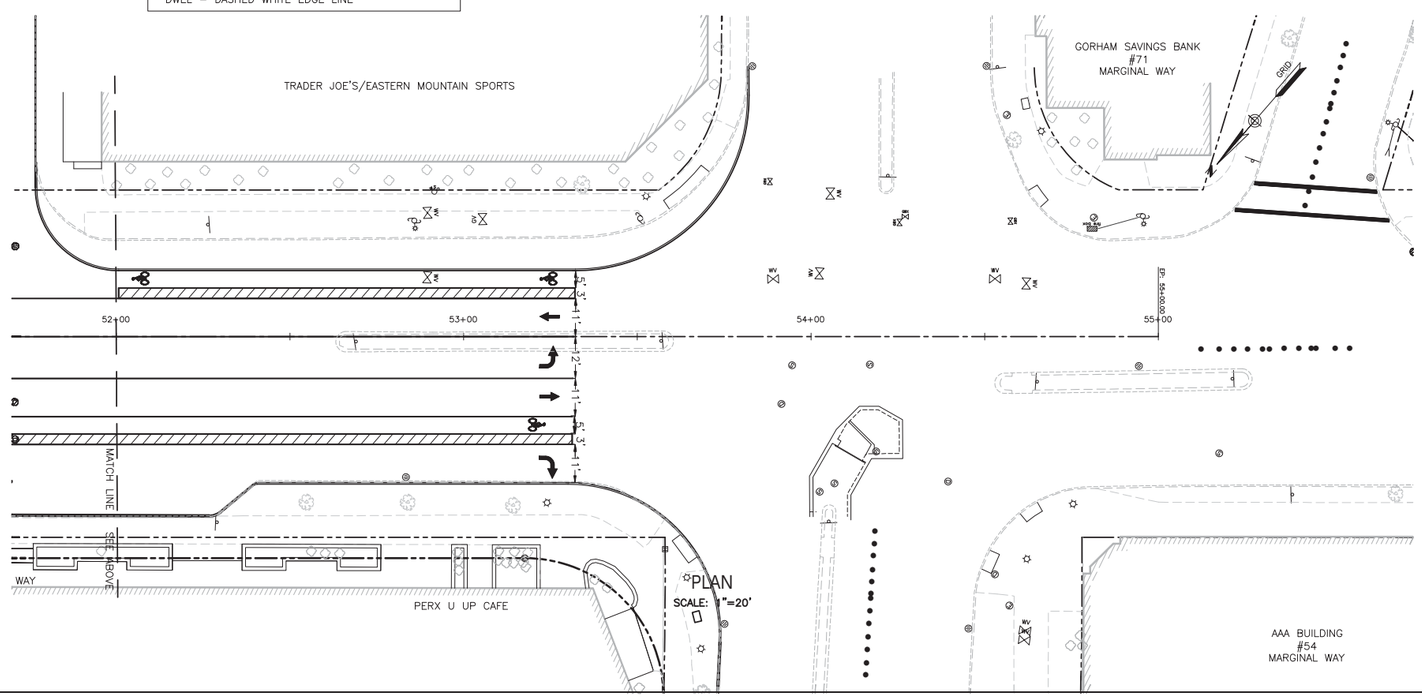
1. STROKE WIDTH AND LINE WIDTH VARIANCES SHALL BE NO MORE THAN, +/– ¼" FROM DIMENSIONS SHOWN.
2. SYMBOLS AND LETTERS SHALL BE PROPORTIONED ACCORDING TO THE GRID SHOWN.
3. SPACING BETWEEN CHARACTERS SHALL BE ONE UNIT, BUT VISUAL SPACING MAY BE USED.

LEGEND
DYCL – DOUBLE YELLOW CENTER LINE
SWEL – SOLID WHITE EDGE LINE
DWEL – DASHED WHITE EDGE LINE



PLAN
SCALE: 1"=20'

NOT FOR CONSTRUCTION

75% DESIGN DRAWINGS
DATED 12–30–2015

REFERENCES:

Civil 3D 2014 Drawing Name:
Civil 3D 2014 Survey Database:
Civil 3D 2014 Data Shortcuts:

REVISIONS:

DESIGNED BY: RTW
DRAWN BY: CGH
CHECKED BY: CE
SCALE: AS NOTED
DATE: 12/30/2015

BACK COVE SOUTH
STORAGE CONDUIT

PAVEMENT MARKING PLAN

STATIONS 46+00 TO 55+00

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING DIVISION

SHEET #
OF

PLAN NUMBER
C-68

TO: Chair Thibodeau and Members of the Sustainability and Transportation Committee

FROM: Bruce Hyman, Transportation Program Manager

DATE: March 16, 2018

SUBJECT: Draft Bayside Transportation Master Plan

CC: Jeff Levine, Planning and Urban Development Director
Chris Branch, Public Works Director
Jeremiah Bartlett, Transportation Systems Engineer
Troy Moon, Sustainability Coordinator

Introduction:

The City conducted the PACTS-funded Bayside Transportation Master Plan to integrate and lay the groundwork for many various public planning-project initiatives and private development activities in the fast-changing Bayside and East Bayside neighborhoods. The Plan and its recommendations are organized around 8 primary 'Focus Areas':

- Marginal Way
- Preble and Elm Streets
- Portland and Oxford Streets
- Pearl Street
- Lancaster and Kennebec Streets
- East Bayside
- Washington Avenue (on-peninsula)
- Public Transit.

A robust public outreach-engagement process with residents, property owners and businesses was conducted that included three well-attended public workshops, an Open House and an interactive project website. Close coordination with the MaineDOT and METRO was also maintained throughout the process. This process and its outcomes are documented in Chapter 6.

For each of the 8 focus areas the public outreach and consultant-staff discussions generated a series of Issues-Opportunities and Goals were identified. From these, a set of Alternatives were generated and analyzed and evaluated based on how well they met the Goals.

Principal Recommendations by Focus Area:

Recommendations for each focus area were made based on the technical analysis and goals evaluation. The principal recommendations for each focus area are summarized below. Common themes for each focus area are an improved streetscape/sidewalks and pedestrian crossings.

- Marginal Way. To more safely and efficiently serve a more urban development context, Marginal Way is recommended to become a more consistent 3-lane roadway from Forest Avenue to Franklin Street with one lane in each direction, two-way center turn lane/left turn lanes at intersections and on-street parking. Intersections are recommended to be reconfigured to serve this configuration including at Preble/Elm Streets, Chestnut Street (including a traffic signal) and at Franklin Street. At Franklin Street, full movement of traffic for westbound Marginal Way is preserved.
- Preble and Elm Streets. In anticipation of the Somerset Street re-connection between Elm and Hanover Streets, Preble Street is proposed to be reconfigured from Marginal Way to Congress Street for generally one travel lane and a bike lane with turn lanes at intersections where needed. Elm Street is recommended to remain two travel lanes with shared lane bikeway markings.
- Portland and Oxford Streets. Portland Street is recommended to be reconfigured at the Forest Avenue intersection to better serve pedestrians and transit users. Oxford Street is recommended to become two-way from Elm Street to Alder Street/Portland Street to improve street connectivity within the neighborhood. A test of a two-way Oxford Street from Elm to Pearl is suggested.
- Pearl Street. Pearl Street is recommended to be extended the one block from Somerset Street to Marginal Way to enhance north-south connectivity on the peninsula from Marginal Way to Commercial Street.
- Lancaster and Kennebec Streets. Various options for reconfiguring both streets are presented including as traditional city streets (travelways with curb and sidewalk) or as shared streets for some sections in response to potential development opportunities. City staff also suggest that portions of Kennebec Street be considered to become pedestrian only/a pedestrian mall given its unique characteristics. This type of conversion has been successful in communities across the country to create vibrant redevelopment areas.
- East Bayside. Many streets are recommended to be upgraded to traditional city streets with curb and sidewalks where they are currently missing.
- Washington Avenue (on-peninsula). In anticipation of reconstruction of much of the street and its continued redevelopment/revitalization, Washington Avenue is recommended to have a much higher quality streetscape/sidewalks and better pedestrian access along and across Washington Avenue.
- Public Transit. Many bus stops are recommended to be relocated and formalized by removal of on-street parking to allow buses access to the curb to better serve riders.

ETHAN K. STRIMLING (MAYOR)
BELINDA S. RAY (1)
SPENCER R. THIBODEAU (2)
BRIAN E. BATSON (3)
JUSTIN COSTA (4)

CITY OF PORTLAND
IN THE CITY COUNCIL

KIMBERLY COOK (5)
JILL C. DUSON (A/L)
PIOUS ALI (A/L)
NICHOLAS M. MAVODONES, JR (A/L)

RESOLUTION ADOPTING A GOAL TO REDUCE GREENHOUSE GAS EMISSIONS CITYWIDE 80 PERCENT BY 2050

WHEREAS, as a coastal, urban community, Portland is highly vulnerable to the impacts of climate change; and

WHEREAS, local sea level during the past two decades has been rising 130 percent faster than the historical rate and analysis in the recent Bayside Adapts report suggests the City should prepare to manage 8.8 feet of sea level rise by 2100; and

WHEREAS, waters in Casco Bay and the Gulf of Maine are warming at a rate 99% faster than the world's oceans, and will soon reach temperatures projected to shift marine species and disrupt traditional fisheries; and

WHEREAS, members of our community and others are already feeling the effects of climate change through increased temperatures, more extreme weather events, more frequent flooding, and other disruptions that also affect our economy, and way of life; and

WHEREAS, from 1895 to 2014, average annual temperatures in Portland warmed by four degrees Farenheit (F) and climate models for the Casco Bay watershed predict further increases from two to six degrees F by mid-century and three to 10°F by 2100; and

WHEREAS, current trends and projections show that Cumberland County can expect more frequent extreme precipitation events, categorized as coastal floods, flash floods, heavy rain and tropical storms, and increased months of drought as well; and

WHEREAS, these climate changes have cascading effects on the City's economy, infrastructure, public health and safety, and other critical systems; and

WHEREAS, the transition to a low-carbon community reliant on the efficient use of clean energy resources and electrified transportation will most likely improve air quality, enhance public health, increase national and energy security, create local green jobs, and reduce reliance on finite resources; and

WHEREAS, increasing energy efficiency and resilience may attract jobs and economic development opportunities to our community and improve our long-term economic competitiveness;

WHEREAS, the City of Portland has already demonstrated leadership in climate action and has implemented initiatives to reduce greenhouse gas emissions, including energy upgrades in municipal buildings, deployment of electric vehicles and charging infrastructure, an Energy Benchmarking Ordinance in 2016, the completion of a Municipal Climate Action Plan and the conversion of its streetlights to LED, a first for Maine; and

WHEREAS, national leaders met in Paris in December 2015 to negotiate a global agreement that endeavors to decrease greenhouse gas emissions to a level that could cap the average global temperature increase at two degrees above normal or lower; and

WHEREAS, in 2017 the City Council pledged that the City will run on 100% clean energy by 2040, joined the Mayors National Climate Action Agenda, and pledged to take action in accordance with the goals stated in the Paris Climate Agreement; and

WHEREAS, conservative estimates by the world's climate scientists state that to achieve climate stabilization and avoid cataclysmic climate change, emission of greenhouse gases must be brought to 80% below 1990 levels by 2050; and

WHEREAS, the City of Portland would be joining a growing coalition of cities around the world who are committed to an 80% reduction in greenhouse gas emissions by 2050 including Atlanta, Boston, Boulder, Chicago, Minneapolis, New York, Portland, Oregon, Providence, San Francisco, Seattle, and Washington, DC; and

NOW, THEREFORE, BE IT RESOLVED, that the Portland City Council and the Mayor hereby establish the goal of reducing citywide greenhouse gas emissions by 80 percent by the year 2050.

Portland, Maine — Yes. Life's good here.

Executive Department
Jon P. Jennings, City Manager

To: Councilor Thibodeau and members of the Sustainability and Transportation Commitee

From: Troy Moon, Sustainability Coordinator

Date: March 16, 2018

Subject: Adopting a goal to reduce greenhouse gas emissions citywide 80% by 2050

In June, 2017, the Portland City Council adopted a resolve to join the Mayors National Climate Agenda (Climate Mayors), pledging to take actions to reduce greenhouse gas emissions in a manner consistent with the goals outlined in the Paris Agreement. Specifically, signatory cities pledged to:

1. Develop a community greenhouse gas (GHG) emissions inventory
2. Set near- and long-term targets to reduce emissions
3. Develop a Climate Action Plan aligned with the City's targets

The Sustainability Office has been developing a strategy to meet this commitment. During this process, I met with my counterpart in South Portland – also a member of the Climate Mayors – to discuss our plans. We realized that by collaborating we could address climate issues on a regional level and reduce costs by sharing consulting expenses. Together, we developed a joint project centered on an ambitious long-term vision for deep emissions reductions. The key facets of our recommended strategy are:

1. Adopt a greenhouse gas reduction target compatible with the goals established by the Paris Climate Agreement. Leading cities have chosen an 80% reduction in emissions by 2050. (80x50)
2. Select a qualified consultant to assist with the development of a rigorous planning process that will identify actions necessary to achieve the targeted GHG reductions.
3. Establish a stakeholder group of experts in key areas to guide the planning process. (Key areas include energy, land use and transportation, waste reduction, and resilience.)
4. Conduct community meetings to engage citizens in the planning process

At the conclusion of this process each city will have a detailed plan describing concrete actions and measureable goals that will result in a less carbon intense and more resilient community.

During the formation of our strategy we were approached by a team consisting of the principals from Gridsolar and the leadership of the Maine Chapter of the Sierra Club. They proposed a project that would create parcel level maps of energy consumption in both cities and a map showing the location and capacity of key assets in the local electric grid. Together, this information would allow our cities to identify effective ways to deploy distributed energy resources such as solar panels, choose areas where micro-grids might make sense, and where it makes the most sense to build out electric vehicle charging infrastructure. These technologies will be vital parts of any effort to reduce GHG emissions and ensure our communities are resilient in the face of the unavoidable impacts of climate change. GridSolar and the Sierra Club view this

project as a model for cities across the country and are offering to pilot it in our cities at no charge, although they ask that we help identify potential funders if possible.

With these pieces in place, Sustainability staff met with both City Managers to review our project and discuss funding. Conversation with colleagues in other cities and discussions with several consultants suggests a budget for our planning process should be approximately $220,000. We proposed that South Portland and Portland both commit $110,000 to the project. Either city pursuing a planning process on its own would likely pay more than that. Additionally, partnering with GridSolar will provide access to research, mapping, and public outreach valued at $400,000. Moving forward with this project will model collaborative regional climate action planning, minimize consulting costs, and leverage an innovative approach to energy modeling.

As a next step in this process we are asking the City Council to officially adopt the goal of reducing greenhouse gas emissions by 80% before 2050. The cities involved in the Climate Neutral Cities Alliance, which includes New York, Boston, Minneapolis, Seattle, San Francisco, as well as many international cities state:

> Cities striving for carbon neutrality recognize that averting the worst impacts of climate change will require cutting GHG emissions by at least 80% by 2050. Because urban areas account for nearly three-quarters of humanity's emissions, reaching this goal will depend in large part on our ability to reimagine and reinvent cities in ways that promote economic prosperity, social equity, enhanced quality of life, and climate resilience.

The Paris Agreement was signed by 195 nations around the world who rallied around a shared objective of keeping global temperature rise to no more than 2 degrees Celsius, preferably no more than 1.5 degrees Celsius. As a member of the Climate Mayors, Portland has pledged to work toward this goal.

Adopting this goal aligns with the City Council's stated commitment to take meaningful action to address global climate change and to reduce its local impacts. It represents the first step toward developing a comprehensive climate action and adaptation plan for the City of Portland.