

PLANNING BOARD

Tuesday, March 10, 2026 at 4:30 PM
Room 24 (Basement Level of City Hall)
and Zoom



MEMBERS

Joseph Zamboni, Chair
Kelsey Robertson, Vice Chair
Austin Smith
Beverly Uhlenhake
David Silk
Eric Din
Nicholas Messina

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agenda packet. All submissions must include the commenter's name and legal address. To help ensure your comment is submitted for the correct item, please include the name of the agenda item (see below).

AGENDA:

PUBLIC HEARING - 4:30 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON FEBRUARY 24, 2026

Public Hearing

Amendments to the Planning Board Rules: Fox, Mazer, Messina, Robertson present. Smith, Silk, and Zamboni absent.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON FEBRUARY 24, 2026

- i. Amendments to the Planning Board Rules. Mazer motioned and Robertson seconded a motion to approve amendments to the Board's rules and file them with the City Clerk's office and Planning & Urban Development Department. Vote 4-0 (Smith, Silk and Zamboni absent).

5. NEW BUSINESS

- i. Text Amendments to Article 3 (Definitions) and Article 6 (Uses); City of Portland, Applicant. The Planning Board will hold a hybrid workshop to consider proposed text amendments to Article 3 (Definitions) and Article 6 (Uses) of the Land Use Code. The proposed amendments would modify the definition of Theaters and Performance Halls in Article 3 and establish supplemental use standards in Article 6, including a minimum distance requirement between Large Theaters and Performance Halls within the B-3 and WCZ zoning districts.

Land Use Code Text Amendments – Entertainment Buffer
City of Portland, Applicant

Submitted to: Portland Planning Board Workshop Date: March 10, 2026 Date Prepared: March 4, 2026	Prepared by: Kevin Kraft, Director Matt Grooms, Deputy Director
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I. INTRODUCTION

Review a proposed text amendment to Articles 3 (Definitions) and 6 (Uses) of the Land Use Code, co-sponsored by Councilor Pelletier and Councilor Ali (Attachment A). The amendment would establish a minimum 750-foot buffer requirement between large theaters and performance halls.

The Planning Board’s role is to review the proposed amendments for consistency with the Comprehensive Plan and to provide a recommendation to the City Council to adopt, adopt with recommended amendments, or reject the amendments. This recommendation must be supported by findings of fact and an assessment of whether the proposal aligns with City policy and advances the goals and objectives of the Comprehensive Plan. The City Council has the final authority to review and adopt any proposed changes to the Land Use Code.

A legal advertisement for this workshop was published in the *Portland Press Herald* on February 26 and February 27, 2026.

II. BACKGROUND

In response to community concerns raised during review of a Major Site Plan application for the proposed 3,300-capacity Portland Music Hall at 244 Cumberland Avenue, the City Council voted 6–3 on [August 11, 2025](#) (Councilors Ali, Phillips, and Mayor Dion opposed) to enact a 180-day moratorium on theaters and performance halls with capacities exceeding 2,000. The moratorium was made retroactive to applications received on or after December 1, 2024 (Order 9-25/26). On [February 23, 2026](#), the City Council voted to extend the moratorium.

In response to the moratorium, on [November 18, 2025](#), the Housing & Economic Development Committee (HEDC) reviewed and discussed a proposed text amendment to the Land Use Code, introduced by Councilor Pelletier and Councilor Ali. The amendment proposed to eliminate the existing 100-foot buffer for businesses holding an entertainment license and replace it with a 750-foot buffer for large entertainment businesses, which the amendment defined as venues with seating capacities of 1,000 or more within the B-3 and Waterfront Central zones.

On [February 3, 2026](#), the HEDC reviewed and discussed a refined text amendment co-sponsored by Councilors Pelletier and Ali. The amendment would modify the existing Theater or Performance Hall use by creating two categories: Theater or Performance Hall (Small) and Theater or Performance Hall (Large). It would also prohibit Large Theaters or Performance Halls from being located within 750 feet of another Large Theater or Performance Hall within the B-3 and Waterfront Central zones.

During deliberations on the proposal, HEDC members Phillips, Sykes, and Michniewicz expressed general

opposition to the proposed 750-foot buffer. Councilor Michniewicz suggested considering a 250-foot buffer due to concerns that entrances to large venues located near one another could create conflicts when multiple venues are emptying at the same time and recommended that a 250-foot buffer be considered. Ultimately, the committee voted 4-0 to forward the proposed amendments to the Planning Board for review. However, the HEDC's vote was solely to move the amendments forward for consideration and did not constitute an endorsement of either a 250-foot or 750-foot buffer.

Adoption of Entertainment Sector Benefits for Large Venues

Since the enactment of the moratorium in August 2025, the HEDC reviewed a separate proposal on [October 21, 2025](#), to amend Chapter 4 of the City Code (Amusements) by establishing an Entertainment Sector Benefits Agreement requirement for large venues. On November 18, 2025, the HEDC voted 4-0 to recommend City Council approval of the amendment. On [January 5, 2026](#), the City Council voted 8-0 (Councilor Ali absent) to pass [Order 107-25/26](#), creating a new Large Capacity Entertainment License for venues with capacities of 2,000 or more, and requiring licensees to enter into an Entertainment Sector Benefits Agreement, providing financial or in-kind contributions equal to 1.0%-2.0% of the base ticket price to support Portland's local entertainment ecosystem. This ordinance became effective on February 5, 2026.

Existing 100-foot Entertainment License Buffer

In 2007, the City Council, guided by the Mayor's Old Port Task Force and the Public Safety Committee, created the existing Downtown Entertainment Overlay Zone, which included a 100-foot buffer between establishments with alcohol service and entertainment licenses to address the impacts of a high concentration of bars in the Old Port, many of which remained open late into the evening. The Task Force concluded that the dispersal requirement effectively prevented the clustering of bars and entertainment venues with music and dance licenses, which had been associated with public safety concerns, and determined that a 100-foot separation from main entrances provided sufficient distance to mitigate these impacts. This 100-foot dispersal requirement is codified in Section 6.8.4 of the Land Use Code for businesses with entertainment licenses in the B-3 and Waterfront Central Zones and remains in effect.

III. PROPOSED TEXT AMENDMENTS

As outlined in Councilor Pelletier's January 30, 2026 memo to the HEDC Committee (Attachment C), the goal of the proposed amendments is to address concerns regarding the spacing of large venues in downtown Portland. Establishing a buffer is intended to mitigate traffic impacts associated with patrons arriving at and departing from multiple venues simultaneously.

The proposed amendments (Attachment A), co-sponsored by Councilor Pelletier and Councilor Ali, would modify the existing Theater or Performance Hall use by creating two use categories, Theater or Performance Hall (Small) and Theater or Performance Hall (Large), that would be defined in Article 3 Definitions:

- **Theater or Performance Hall (Small):** An establishment with a total occupancy of fewer than 1,000 persons devoted to showing motion pictures or hosting dramatic, musical, or live performances.
- **Theater or Performance Hall (Large):** An establishment with a total occupancy of 1,000 or more persons devoted to showing motion pictures or hosting dramatic, musical, or live performances.

The 1,000-person threshold is derived from the Councilors' original proposal. Theaters and Performance Halls would continue to be permitted in the B-3 and Waterfront Central Zones (WCZ), as outlined in Table 6-C. However, Large Theaters and Performance Halls would be subject to supplemental use standards in Section 6.4.42, which would prohibit such venues from locating within 750 feet of the primary entrance(s) of another Large Theater or Performance Hall.

Under this approach, the 750-foot buffer would apply only between Large Theaters and Performance Halls. It would not restrict proximity between small theaters and performance halls, nor would it apply to larger venues such as stadiums or arenas, as currently drafted.

250 Foot Buffer Proposal

During the February 3, 2026 HEDC meeting, Councilor Michniewicz requested that staff explore a 250-foot buffer. The intent of establishing a 250-foot separation would be to address concerns about two primary entrances being located in close proximity and to mitigate impacts associated with patrons exiting venues and entering the sidewalk/street network simultaneously.

IV. ANALYSIS

Staff evaluated the proposed amendments by reviewing current and historic policy guidance, regulatory standards, and best practices in land-use planning, as well as analyzing parking conditions, the economic activity of the arts and cultural sector, and regulations from other cities.

Policy and Regulatory Background

Portland's adopted comprehensive policy framework, including Portland's Comprehensive Plan, [Portland's Plan 2030, One Climate Future](#), the [Downtown Vision Plan](#), and the [Portland Peninsula Transit Study](#), works in concert with established regulatory tools such as the Land Use Code, Site Plan Ordinance, Traffic Movement Permit (TMP) requirements, and impact fees to manage land use, transportation, site access, and parking impacts. Together, these policies and regulations provide sufficient flexibility and oversight to evaluate individual proposals on a case-by case basis while supporting the City's long-standing goals and commitment for encouraging compact, infill development, multimodal accessibility, and downtown economic vitality.

Over the past decade, City policymakers have deliberately pursued policies that reflect a modern, 21st-century approach to growth and sustainability. Long-range transportation planning has focused on creating a more integrated, multimodal network through public transit enhancements, sidewalk and streetscape improvements, bikeway planning, and targeted investments in the underlying street network. At the same time, the City has worked to ensure that its land use framework is closely aligned with transportation planning. The consistent direction of City policymaking over several decades demonstrates a shared commitment to guiding Portland's growth in a sustainable manner, prioritizing a transportation system that serves all users, not solely automobiles and single-occupancy vehicles, and ensuring density, mixed-use development, and key destinations are aligned with the public transit network. This commitment is increasingly reflected in Portland's built environment today.

For example, in 1991 the City adopted the *Downtown Vision Plan*. As Maine's largest city and Northern New England's primary urban center, Portland's Downtown serves as a vital hub for commerce, culture, and civic life. In regards to transportation planning, the *Downtown Vision Plan* emphasized the need to reduce reliance on single-occupancy vehicles and minimize on-site parking. It advocated for a more pedestrian-oriented downtown, supported by transit, shuttle lots, carpools, biking, and walking. While acknowledging that

reversing decades of car-centric development would take time, the plan called for a transitional approach, warning that continued auto-dependence could result in increased congestion, pollution, and diminished urban livability. Key transportation strategies outlined in the plan included limiting private on-site parking, encouraging employer participation in transit programs, and enhancing the role of public transit within a walkable, vibrant downtown core. This early policy direction laid the foundation for the City's ongoing efforts to create a more sustainable, accessible, and multimodal transportation system, and to support land use regulation that encourages a shift away from car-centric development.

In 2009, the City approved the *Portland Peninsula Transit Study*, a study intended to advance transportation strategies supporting the livability and sustainability of the Portland Peninsula, recognized as one of the most vibrant and walkable small urban areas in the nation and the heart of the region. Building on prior policy direction, the study emphasized the need to integrate land use, infrastructure, and transportation planning to strengthen walking, biking, and transit options. The study acknowledged that while investments in pedestrian, bicycle, and transit infrastructure are critical, meaningful reductions in single-occupancy vehicle trips would also require addressing the financial incentives and convenience that favor driving. It highlighted that many cities have chosen to accept some loss in auto-oriented conveniences in order to improve safety, reduce emissions, and prioritize multimodal transportation. The plan reinforced the City's long-standing commitment to sustainable transportation and again set forth goals including reducing single-occupancy vehicle trips, shifting away from auto-oriented infrastructure toward support for alternative modes, and managing, rather than expanding, the existing parking supply.

Key policy recommendations included:

- Traffic Policy:
 - Shift from an auto-oriented infrastructure to promotion of other modes;
 - Shift investment strategy from support for new lanes of asphalt to transit;
 - No longer designing streets solely to accommodate peak-hour traffic;
 - Accepting traffic delays as normal in an urban environment
- Transit Policy:
 - Encourage development of transit to reduce the growth of traffic to and within the peninsula;
 - Provide convenient, frequent, attractive, reliable, and safe transit options;
 - Invest in transit over new vehicular travel lanes of asphalt
- Parking Policy:
 - Encourage new initiatives to decrease the growth of traffic volumes;
 - Manage the parking supply rather than continue to expand it;
 - Use parking impact fees to support transit;
 - Develop shared parking
- Pedestrian & Bike Policy:
 - Encourage walking and biking, along with transit “share the street”

In 2017, the City adopted [*Portland's Plan 2030*](#), the Comprehensive Plan for the City of Portland. As a foundational policy document, it establishes the framework that guides zoning, the Land Use Code, and other adopted regulations. The Plan outlines goals and strategies aimed at reducing reliance on automobiles through compact, walkable, and multimodal development, strategically managed parking, and reinforcement

of the city center, recognizing that Downtown Portland remains the region’s cultural, civic, and economic hub.

Its transportation and land use policies emphasize that by managing growth in automobile traffic, the City can expand transportation choices and foster a more accessible and sustainable urban environment. Additionally, the Comprehensive Plan’s economic policy framework acknowledges that Portland hosts an increasingly diverse economy, including the financial and service sectors, a thriving local food scene, a port engaged in international trade, a regional healthcare hub, and a flourishing arts and culture community. The Plan outlines the following goals relevant when considering the proposed amendments:

- *Promote an economic climate that increases job opportunities and overall economic well-being (State Goal).*
- *Create economic prosperity by growing Portland’s tax and employment base (Local Goal).*
- *Value innovation and creativity as cornerstones of the local economy and central to Portland’s uniqueness and diversity (Local Goal).*
- *Support sustainable growth in educational, medical, and cultural institutions (Local Goal).*
- *Target areas for job growth by ensuring new employment can be accommodated in priority growth areas across the city and by evaluating zoning and infrastructure conditions in downtown, neighborhood nodes, and along transit corridors to support employment and housing growth.*
- *Emphasize arts and culture by leveraging them as defining elements of Portland’s quality of place, supporting cultural institutions and arts spaces, and ensuring access to arts and culture for all residents.*

The Plan’s, Future Land Use Framework further emphasizes areas most critical to the City’s continued growth and highlights the goal to “Reinforce the Center.” The Plan affirms that Downtown Portland remains central to the region’s arts and cultural, economic, and civic vitality and embraces the principle that downtown should continue to serve as a primary locus of activity for the broader region. Downtown is therefore identified as a priority growth node for continued enhancement and investment.

Portland’s Plan 2030 laid the foundation for further studies and policy development, including *One Climate Future*, approved in 2021. [*One Climate Future*](#) continued to move the City toward the goal of sustainable growth. This adopted policy document included specific goals and strategies to support implementation of the higher-level direction in *Portland’s Plan 2030*. These goals and strategies again focused on mode shift, aiming to decrease private vehicle use and focused on expanding public transportation systems, biking accessibility, complete streets, and transit-oriented development (TOD) in an effort to make it easier to travel between destinations without a car and to reduce greenhouse gas emissions.

A key action item identified in *One Climate Future* was to shift away from policies that promote increased parking demand and supply, and instead advance strategies that strengthen multimodal transportation options. To achieve this, the plan called for eliminating parking minimums in commercial areas and along designated transit corridors, and for establishing parking maximums. This was accomplished in 2024 through ReCode, when parking minimums were eliminated citywide and replaced with parking maximums. Furthermore, by encouraging lower-density, car-oriented development, excessive parking also undermines public transit efficiency and creates streetscapes that discourage walking and biking. This reinforces car dependency, increases greenhouse gas emissions, and perpetuates demand for more parking, directly conflicting with the goals of *One Climate Future*.

In recent years, the City and region have continued to advance their multimodal transportation goals. In 2023,

the [*Gorham-Westbrook-Portland Bus Rapid Transit \(BRT\) Study*](#) was completed to assess the feasibility and potential benefits of a rapid transit connection linking the three communities. The study identified a preferred alignment, running along Main Street, Brighton Avenue, and Congress Street through downtown Portland, as the most direct and effective corridor. This route would connect major destinations, including USM Gorham, Gorham Village, Downtown Westbrook, Rock Row, USM Portland, Maine Medical Center, Downtown Portland, and the Eastern Waterfront, with high-frequency bus service.

On April 14, 2025, the City Council adopted the Greater Portland Council of Governments' (GPCOG) [*Regional Vision Zero Action Plan*](#). By doing so, the City formally endorsed the initiative's core objective: eliminating all traffic-related fatalities and serious injuries by 2045. The GPCOG Vision Zero plan emphasizes reducing reliance on single-occupancy vehicles and promoting greater use of public transit as a critical step toward safer, more equitable mobility. Directly aligned with advancing Vision Zero, the City Council in 2025 adopted an update to the City's 2012 [*Complete Streets Policy*](#) to ensure it continues to reflect the community's vision for a safer, more multimodal city that serves all users, regardless of age or ability.

Policy & Regulatory Considerations:

- *Portland's Plan 2030* identifies downtown as the region's center for arts, culture, and commerce. Theaters and performance halls contribute to this role as components of the city's cultural and economic activity. Existing and former venues, including the State Theatre, Merrill Auditorium, Cross Insurance Arena, Blue, Portland House of Music, and Port City Music Hall (Closed), demonstrate that such uses have operated successfully in the downtown area.
- Economic development activity in downtown Portland may create opportunities for arts and cultural venues that generate visitor activity, support employment, and contribute to the local tax base. Permitting theaters and performance halls downtown is consistent with broader goals related to encouraging foot traffic, supporting mixed-use development patterns, and reinforcing downtown's role as a center for arts, culture, and commerce. Such venues may also influence overall downtown activity levels and have spillover effects on nearby businesses.
- Theaters and performance halls subject to site plan review must be designed to address potential impacts on vehicular and pedestrian circulation, noise, and adjacent streets. These projects are reviewed and regulated in accordance with the City's Site Plan Ordinance and the State's Traffic Movement Permit (TMP) requirements.
- *One Climate Future* prioritizes shifting travel away from single-occupancy vehicles. Downtown venues may support this objective by providing locations that are accessible by walking, public transit, and other alternative modes of transportation.
- *The Gorham-Westbrook-Portland BRT* study identifies Congress Street through downtown as a key corridor connecting Portland with Gorham Village and downtown Westbrook, with the potential to enhance high-frequency bus service at both the local and regional levels.
- Updates to the Vision Zero and Complete Streets policies emphasize the City's commitment to a street network that accommodates all users and modes, with a focus on reducing reliance on single-occupancy vehicles and supporting alternative modes of travel, including public transit, walking, and biking.

Parking Capacity & Utilization

While parking has been a frequent topic of conversation for several decades, in 2017 the City commissioned a study covering much of the downtown and nearby waterfront areas, which found that there are enough parking spaces to accommodate roughly one space for every four residents of Portland.

The study showed that peak utilization typically occurs on weekday afternoons in the summer, when businesses and offices are open, with demand tapering off by early afternoon and continuing into the evening. More recent studies and analyses have yielded similar findings.

Parking Study for Downtown, the Old Port, and the Eastern Waterfront (2017)

In 2017, the City commissioned a parking study covering the downtown, central waterfront, eastern waterfront, and a ¼-mile buffer surrounding these areas (Attachment D). The primary objectives were to collect data on parking supply and demand during both weekdays and weekends and to identify any areas of deficiency.



Figure 1: 2017 Parking Study – Study Area Map

The study identified a total supply of nearly 16,000 parking spaces (on-street, surface lot, structured parking) within the study area, or roughly one space for every four residents of the City of Portland (~25% of Portland’s entire population). Of these, over 11,000 spaces were located within the core downtown area. The analysis found that peak parking demand occurs on weekday afternoons during the summer, when office and businesses are open and visitors are abundant, and demand exceeds the system’s effective capacity¹, though not its total capacity (Figure 2). On these peak weekdays, utilization begins to decline starting around 2:30 PM and continues to remain low, below the system’s effective capacity, into the evening hours. In contrast, weekend peak demand during the summer season was significantly lower in general, reaching only 71% of effective capacity (Figure 3).

¹ Effective Capacity: The effective capacity is a concept in parking analysis that refers to the occupancy level at which parking users begin to have difficulty finding open spaces and vehicle circulation to access parking begins to exhibit signs of congestion including queuing. The effective capacity is also thought of as the threshold when a parking supply begins to be perceived by users to be full.

The study documented a strong preference for on-street parking, which was at or above effective capacity during weekday and Saturday evenings, despite the fact that substantial capacity remained in nearby surface lots and parking garages during those same periods. The study also highlighted that individual streets varied, and some high-demand streets, such as Commercial Street, Middle Street, and Exchange Street, exhibited higher occupancy rates than the overall sample within the study area.

The 2017 study also included a land-use-based analysis of parking demand. Using ITE parking generation factors, which are based on generalized national data and are often characterized as conservative in urban contexts, the study concluded that evening and weekend events at a sold-out Cross Insurance Arena, with a seating capacity of approximately 6,700, appeared to be adequately supported by existing parking in Downtown Portland. The study indicated approximately 5,000 spaces would be available during the peak period of a sold-out weekday event (Figure 4) and approximately 2,000 spaces would be available during the peak period of a sold-out Saturday event (Figure 5).

Rather than recommending the construction of additional parking facilities, the study concluded that the City should focus on more efficient management of the existing supply. Recommendations included encouraging greater use of underutilized surface lots and structured parking facilities, particularly during peak demand periods.

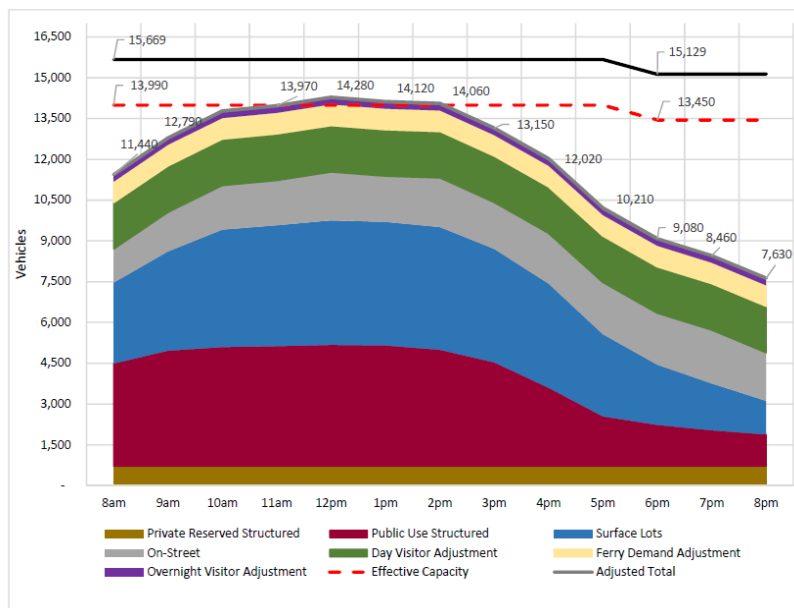


Figure 2: 2017 Parking Study – Estimated Peak Season Weekday Parking Demand by Time of Day

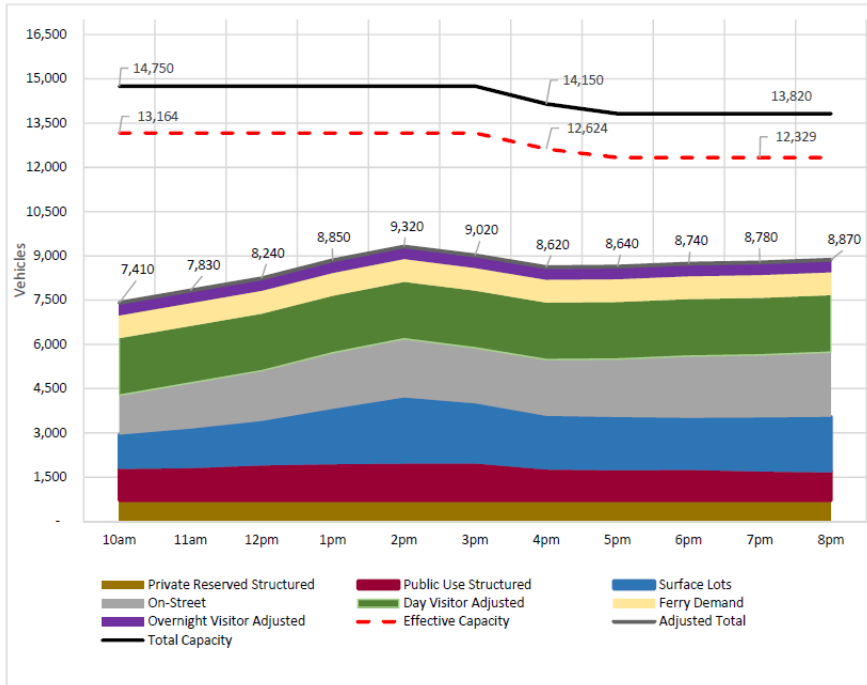


Figure 3: 2017 Parking Study – Estimated Peak Season Saturday Parking Demand by Time of Day

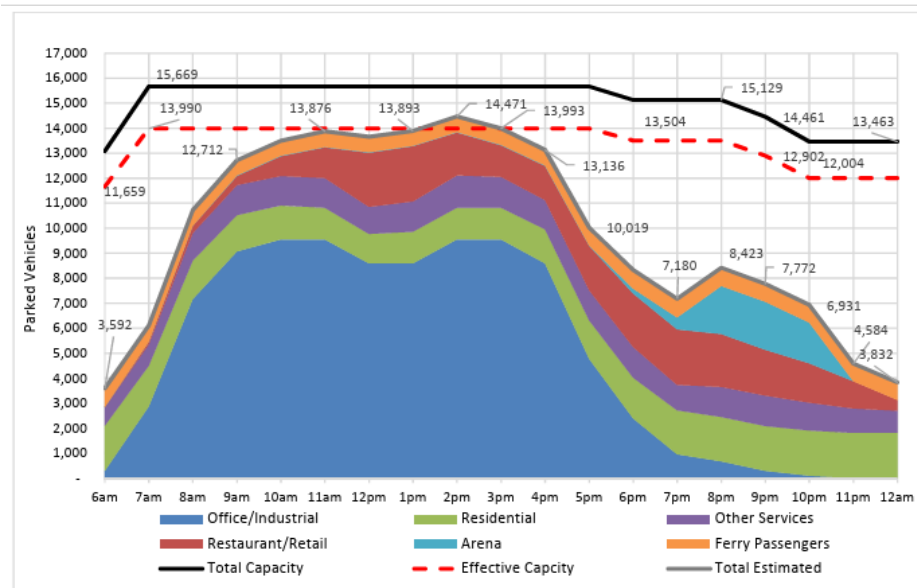


Figure 4: 2017 Parking Study – Weekday Peak Demand by Land-Use

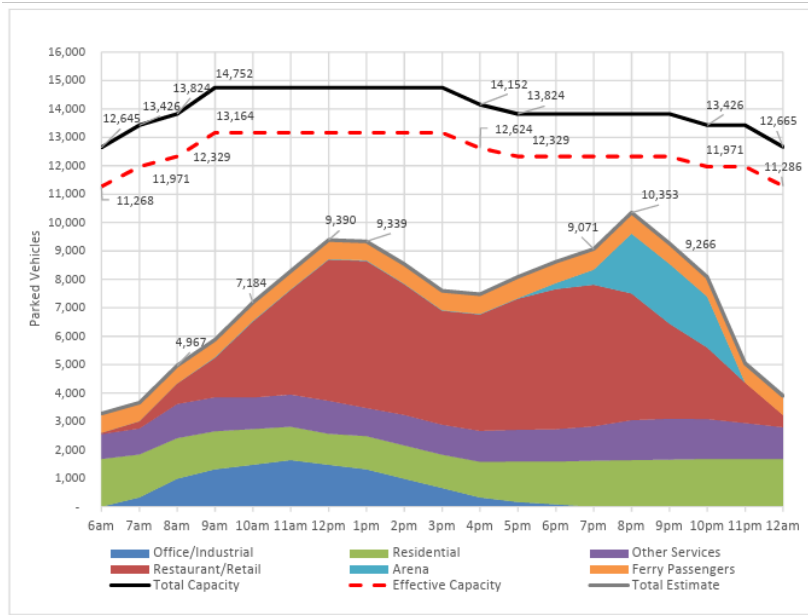


Figure 5: 2017 Parking Study – Saturday Peak Demand by Land-Use

Current parking occupancy data

As of today, parking capacity in the area remains similar to past levels. The City of Portland Parking Division conducted a parking lot occupancy assessment of parking lots and garages open to the general public within both a ¼ mile of the proposed Live Nation Portland Music Hall, and ½ mile of the proposed venue on a Thursday, Friday, and Saturday in May of 2025. Each lot was counted at least twice, and in some cases, up to four times, over the three-day period with all counts occurring after 5:00 PM.

The results showed that of the approximately 2,700 parking spaces within a ¼-mile radius of the proposed Live Nation Portland Music Hall, the average utilization rate between 5:30 PM and 8:00 PM was 19% (Table 1). For parking spaces located between ¼ and ½ mile from the venue, utilization after 5:00 PM averaged 18% (Table 2). These findings suggest that roughly 80% of the parking supply remained available during those times, indicating sufficient existing capacity to support the proposed venue and other uses. These findings are consistent with the 2017 study and reflect a broader trend of reduced parking demand, particularly during evening hours. With utilization below 20% and available capacity at approximately 80%, these numbers indicate that parking capacity remains within the existing supply, aligning with the recommendations of both the 2009 *Portland Peninsula Study* and the 2017 study, which advised the City to focus on managing the existing parking supply rather than expanding it.

Table 1 Off-Street Parking Utilization: 0 to 1/4 Mile Occupancy (5:30 PM-8:00 PM)(May 2025)			
Total Spaces	Available Spaces	% Utilized	% Available
3,380	2,715	19.66%	80.4%

Table 2
Off-Street Parking Utilization: 1/4 to 1/2 Mile Occupancy (5:30 PM-8:00 PM)(May 2025)

Total Spaces	Available Spaces	% Utilized	% Available
2,969	2,412	18.75%	81.25%

Portland Music Hall Traffic Movement Permit (TMP) Parking Analysis

Given that the proposed music venue includes no on-site parking, in accordance with zoning requirements, the project’s Traffic Movement Permit (TMP) included an analysis of existing parking to understand trip distribution within the surrounding area. The applicant provided a map of available off-street parking facilities, including garages and lots, identifying the total number of spaces within four-tenths of a mile of the site (Figure 6). These facilities were documented in the *March 2025 City of Portland Parking Division’s Annual Parking Survey*. Based on distance to the venue, current hours of operation, and capacity, the applicant identified five lots and garages as the most likely parking destinations for music hall patrons (Figure 7). Those five facilities alone account for approximately 2,800 total parking spaces.

Additionally, as part of the Portland Music Hall Major Site Plan Application, the applicant’s Transportation Demand Management (TDM) Plan highlights the venue’s central Downtown location and centers its strategies on access to and from the site on modal split and vehicle occupancy. The TDM materials estimate a total of 1,385 one-way vehicle trips, including both attendees and employees. The projected mode share is 82% vehicles, 2% transit, and 16% walking or biking. The applicant’s TDM submission also sets a target to reduce personal vehicle use by 10%, aiming for a modal split of 72% vehicles instead of 82%, which would further decrease parking demand. In summary, when comparing the estimated parking demand to the effective parking capacity downtown, there is sufficient parking available to accommodate demand, even under the more conservative 82% vehicle mode share.

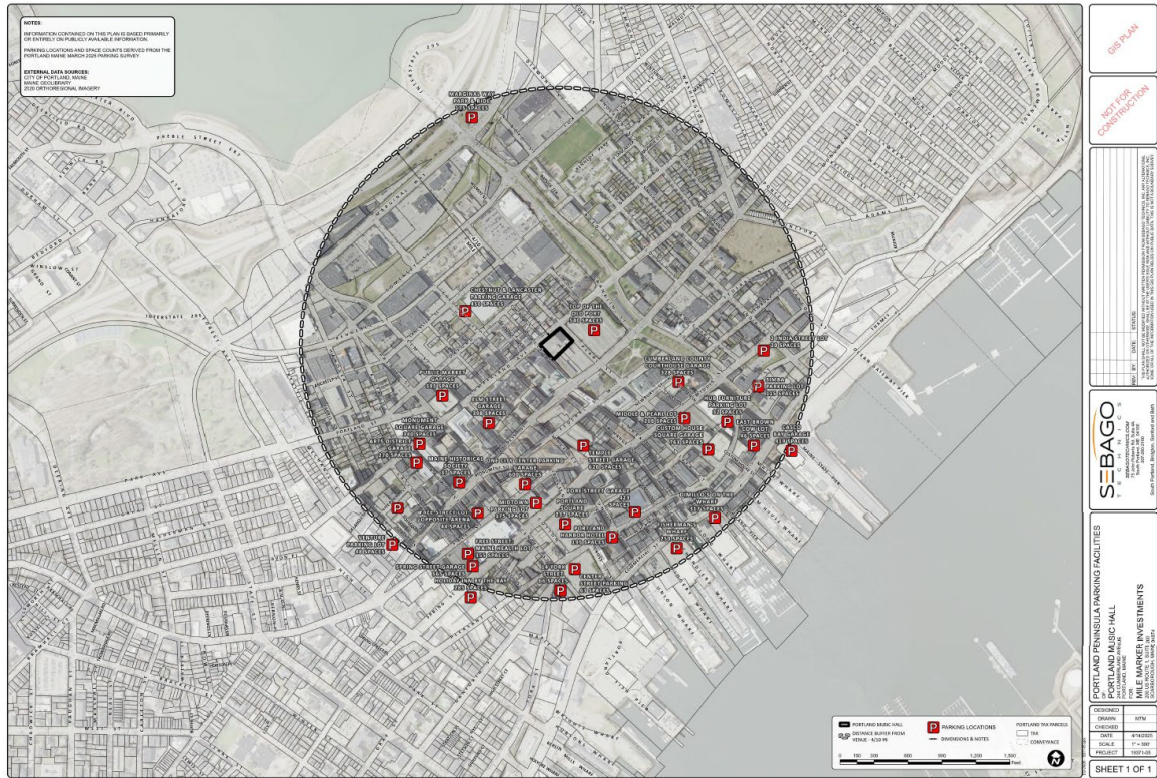


Figure 6: Garages and Lots Within 4/10 Mile of Proposed Portland Music Hall (outlined in black) – Traffic Movement Permit (April 21, 2025), Source: Sebago Technics

Parking Facility	# of Spaces	Hour of Operation	Walking Distance from Site
Top of the Old Port Surface Lot	540	Open 24hrs	0.1 Miles
Temple Street Parking Garage*	620	Closes 12AM	0.2 Miles
Cumberland County Parking Garage	328	Open 24hrs	0.3 Miles
Custom House Parking Garage*	761	Closes 12AM	0.4 Miles
One City Center Parking Garage	600	Open 24hrs	0.4 Miles

*Preliminary parking agreements between event operator and parking facility.

Figure 7: Traffic Movement Permit – Portland Music Hall (April 21, 2025) Nearby Parking Facilities, Source: Sebago Technics

Parking Capacity & Utilization Considerations

- Parking utilization studies indicate that the peninsula benefits from a strong transportation network, including access to multiple bus routes and a walkable street grid. Establishing a 750-foot buffer between Large Theaters and Performance Halls may result in some new venues locating in areas with reduced accessibility, walkability, or transit options, which could influence travel mode choices and parking demand.
- Expanding the buffer from 100 feet to 750 feet would reduce the number of potential locations for new venues in the central downtown area. Other sites within the B-3 Downtown Business zone

would remain available, and venues in these areas may continue to rely on the same parking facilities and traffic patterns.

- The B-3 Downtown zone includes numerous hotels. Visitors staying downtown to attend a show at a theater or performance hall could rely on walking, public transit, or taxi/rideshare services due to the close proximity of these uses.
- Several existing venues operate without on-site parking and continue to function under current conditions. New venues could potentially be accommodated through a combination of nearby public parking facilities, transit access, walkability, bicycle infrastructure, and visitors lodging within the city.
- *One Climate Future* identifies a key action to shift away from policies that increase parking demand and supply, and to advance strategies supporting multimodal transportation. The plan reinforces the City's long-standing commitment to sustainable transportation and outlines goals such as reducing single-occupancy vehicle trips, prioritizing alternative modes over auto-oriented infrastructure, and managing rather than expanding the existing parking supply.
- Does the proposed text amendment align with the Comprehensive Plan and advance the goals and objectives outlined in *One Climate Future* as it relates to parking?
- Are existing regulatory procedures sufficient to address the concerns identified in the stated purpose of the proposed text amendment?

Creative Economy (Theaters & Performance Halls Downtown)

As outlined in Creative Portland's *Local Economy Report for FY2025* (July 1, 2024–June 30, 2025), sustaining the arts community and promoting Portland's cultural life are central economic development priorities. Portland is home to more than 150 arts and cultural organizations that contribute significantly to the City's vibrancy and creative identity. The report emphasizes that the arts function as a key economic driver, powering the creative economy and playing an important role in workforce recruitment and retention.

These findings are reinforced by the October 2023 *Arts & Economic Prosperity* study, which concluded that Portland's nonprofit arts and culture industry generated \$86 million in economic activity in 2022. This included \$58.2 million in spending by nonprofit arts and cultural organizations and \$27.8 million in event-related spending by audiences. Collectively, this activity supported 1,872 jobs and generated \$20.7 million in local, state, and federal government revenue.

Within Portland, many venues operate on the peninsula, defined as east of I-295. The B-3 zone, which encompasses downtown and the Arts District, is home to many of the City's theaters and performance halls with varying capacities. Existing zoning regulations permit theater and performance hall uses by right, a framework that has allowed Portland's creative economy to grow organically. This flexibility has supported the continued evolution of Portland's arts and culture sector and fostered a diverse and dynamic venue landscape (Table 3). Furthermore, many of these venues operate without dedicated on-site parking, loading areas, or designated on-site tour bus parking.

When on-street space or street closure is needed for buses or tour buses, venue operators apply for a Street Occupancy Permit, which is reviewed and issued by the Department of Public Works (DPW). For larger events, whether sporting events or performances at theaters and other venues, venue operators are responsible for securing and funding any required police details to support with crowd control and

management. Requests are submitted through the Police Department’s website, which facilitates the coordination of services such as traffic control and pedestrian crossings before and after events.

Table 3 Venues

Venue Name	Address	Capacity (Approximate)	Zone	On-Site Parking
Merrill Auditorium	20 Myrtle Street	1,900	B-3	No
State Theatre	609 Congress Street	1,870	B-3	No
Aura	121 Center Street	1,100	B-3	No
Port City Music Hall (Closed)	504 Congress Street	400	B-3	No
Portland House of Music	25 Temple Street	300	B-3	No
Portland Stage	25A Forest Avenue	300	B-3	No
One Longfellow Square	181 State Street	200	B-3	No
Geno’s Rock Club	625 Congress Street	190	B-3	No
SPACE Gallery	543-538 Congress Street	130	B-3	No
Blue	650 Congress Street	110	B-3	No
The Apohadion Theater	107 Hanover Street	50	B-3	No
Thompson’s Point (Seasonal)	207 Thompson’s Point Road	6,000	B-5	Yes
Live at Madrid’s	144 Fore Street	800	B-6	No
Sun Tiki	375 Forest Avenue	220	B-2b	No
Mayo Street Arts	10 Mayo Street	110	B-2b	No

From a professional sports perspective, Portland was named the #1 Minor League Sports Market in the country in 2024 by *Sports Business Journal*. The city is home to several teams that draw visitors from Portland and across the region and beyond. The Portland Sea Dogs, the Double-A affiliate of the Boston Red Sox, welcomed 366,442 fans during the 2025 season, including 25 sold-out games. The Maine Celtics, the NBA G League affiliate of the Boston Celtics, recorded total regular-season attendance of 54,052 during the 2024–2025 season. The Maine Mariners, affiliated with the Boston Bruins (NHL), averaged 4,521 fans per game over the same period. In 2025, the Maine Hearts of Pine launched their inaugural United Soccer League (USL) season, drawing sold-out crowds at Fitzpatrick Stadium. The team set a USL single-game attendance record of 6,440 and averaged 5,811 fans across 14 home matches. Additionally, for the 2026 season, the Hearts of Pine have sold out both season tickets and single-game tickets for all home games.

Table 4 – Sporting Venues

Stadium/Arena Name	Address	Capacity (Approximate)	Zone
Cross Insurance Arena	1 Civic Center Square	6,000 – 9,500	B-3
Hadlock Field	271 Hadlock Field	6,868	OS-R
Fitzpatrick Stadium	140 Deering Avenue	6,000	OS-R
Portland Expo	239 Park Avenue	3,000	OS-R
Troubh Ice Arena	225 Park Avenue	650	OS-R

National Case Studies

To inform discussion of potential amendments related to theaters and performance halls, staff reviewed a range of jurisdictions to understand how other communities regulate and permit theaters, live performance venues, and similar assembly uses. The selected jurisdictions reflect a mix of regional comparators and cities with active cultural and entertainment environments, including nearby New England communities, mid-sized cities with vibrant downtowns, and larger cities with established entertainment

economies and more complex development and urban street patterns.

- **Regional and Comparable New England Cities:** Worcester, MA; Burlington, VT; Portsmouth, NH; Providence, RI.
- **Mid-Sized Cities with Active Downtown Cultural Scenes:** Cleveland, OH; Buffalo, NY; Asheville, NC; Provo, UT; Greenville, SC.
- **Larger Cities with Established Entertainment Economies:** New York, NY; Austin, TX; Boston, MA; Portland, OR; Nashville, TN; Seattle, WA

A summary of this review is provided in Attachment B.

Creative Economy Considerations

- *Portland's Plan 2030*, identifies the creative economy as an important component of the city's overall development framework and emphasizes maintaining downtown as the regional center for arts and culture. The plan notes that arts and cultural activities contribute to Portland's quality of place and calls for supporting cultural institutions and spaces.
- The plan emphasizes that economic development should support growth in Portland's tax base and employment, with new opportunities directed toward priority growth areas across the city. Downtown Portland serves as a regional hub, where arts and cultural spaces can contribute to economic activity and employment.
- The October 2023 *Arts & Economic Prosperity* study reported that Portland's nonprofit arts and culture industry generated \$86 million in economic activity in 2022. This included \$58.2 million in spending by nonprofit arts and cultural organizations and \$27.8 million in event-related spending by audiences. Collectively, this activity supported 1,872 jobs and generated \$20.7 million in local, state, and federal government revenue.
- Nationally, cities regulate arts and entertainment venues differently, with many encouraging such venues to locate in mixed-use or downtown areas.
- Portland's B-3 Downtown Business zone currently includes a 100-foot buffer, established in 2007 with the Downtown Entertainment Overlay Zone (DEOZ) to address public safety concerns related to late-night bars, particularly near Wharf Street. Seated, ticketed performance venues differ from these establishments in that they generally provide greater oversight, crowd management, and operational control. Consideration may be given to whether expanding the buffer beyond 100 feet would further mitigate potential crowd or traffic-related impacts.
- The City has a variety of venues of different sizes, including professional sporting facilities with capacities exceeding 6,000. Seated, ticketed venues have a limited history of complaints or public safety concerns, in contrast to the bars in the Old Port that prompted the original buffer. Site access, circulation, and traffic impacts are addressed through existing regulations and the City's development review process, which provide ongoing oversight and require mitigation measures as needed.
- Restrictions on venues may influence development patterns by encouraging new venues to locate in neighboring communities, potentially affecting local economic activity, tax revenue, and employment, while Portland venues continue to compete for patrons. Downtown Portland, as Maine's most walkable and transit-accessible area, provides the greatest opportunity for attendees to access venues using alternative modes of transportation, supporting the City's multimodal

mobility goals and, consistent with One Climate Future, helping to reduce greenhouse gas emissions from vehicle trips.

V. PUBLIC COMMENTS

During the February 3, 2026, HEDC committee meeting, public testimony opposing the proposal raised concerns about singling out a specific project, noted that the proposed music hall complies with all zoning requirements without requesting any variances, and emphasized the importance of supporting downtown economic development and the role of such venues in maintaining a vibrant downtown, while suggesting that a buffer would not be appropriate.

Testimony in support of establishing a buffer focused on parking and life-safety concerns, including emergency access and site circulation. Staff note that Portland hosts several major sporting venues, theaters, and performance halls that operate successfully in dense urban areas. Life-safety access and crowd evacuation are addressed through required emergency and evacuation plans, which are reviewed by the Fire Department as a condition of occupancy permits. For larger events, tenants are responsible for arranging and funding any necessary police details, coordinated through the Police Department to manage traffic and pedestrian safety. Site access and circulation are also regulated through the City's Site Plan Ordinance and are outside the scope of zoning considerations.

VI. NEXT STEPS

The purpose of this Planning Board workshop is to introduce the proposal, provide background context, and allow the Board to ask questions, deliberate, and offer direction to staff. The Board in reviewing the proposal should consider if the proposed text amendment advances the goals and objectives of the comprehensive plan or other relevant policy documents.

Following the workshop, a public hearing on the proposed amendments will be scheduled, at which the Board will evaluate the proposal for consistency with the Comprehensive Plan and adopted citywide policies and make a recommendation to adopt, adopt with amendments, or reject it.

VII. ATTACHMENTS

- A. Attachment A – Proposed Redlined Text Amendments
- B. Attachment B – National Case Studies
- C. Attachment C – Councilor Pelletier HEDC Memo
- D. Attachment D – Portland Parking Study Sept2017
- E. Attachment E – 750 Buffer Map



3 DEFINITIONS

Adjacent grade (within the floodplain). For the purposes of calculating floor elevation in areas of special flood hazard, the natural elevation of the ground surface prior to the construction next to the proposed wall of a structure.

Adult business establishment. Any business, including but not limited to any bookstore, newsstand, novelty store, nightclub, bar, cabaret, amusement arcade, or theater, which:

- A. Keeps for public patronage or permits or allows the operation of any adult amusement device as defined in Chapter 4 of the City of Portland Code of Ordinances; or
- B. Customarily, meaning more often than an average of one calendar week during any calendar month of operation, exhibits motion pictures or displays any other visual representation described or advertised as being “X rated” or “for adults only,” or which customarily excludes persons from any portion of the premises by reason of immaturity of age by the use of such, or similar, phrases; or
- C. Is adjudged to be in violation of 17 M.R.S. §§ 2911, 2912.

Affordable housing. Housing for which the percentage of income a household is charged in rent and other housing expenses (including utilities such as electric, heat, water, sewer, and/or trash that the household pays separately from rent) or must pay in ownership cost (including but not limited to mortgage payments, condominium/HOA fees, mortgage insurance, other insurance, and real estate taxes), does not exceed 30% of a household’s income, or other amount established in City

regulations that does not vary significantly from this amount.

After-hours entertainment license. Any of the music, dancing, and special entertainment licenses required or authorized by Chapter 4, Article III of the City of Portland Code of Ordinances.

Agriculture. Land and associated structures used for the growing of crops and raising of domesticated animals to provide food and other products for sale, personal consumption, donation, and/or educational purposes. Agriculture includes single-family dwellings and any additional dwellings that are accessory to the principal use of agriculture. Agriculture also includes farmstands used to sell crops grown on the premises.

Airport. Land, water, or any human-made object or facility located thereon, which is used or intended to be used for landing and takeoff of aircraft, and any appurtenant areas that are used or intended to be used for airport buildings or other airport facilities or rights-of-way, together with all airport buildings and facilities located thereon. Airports may include airport administration, terminals, carrier operations, concessions, reservations and ticket sales, freight, repair and storage, fueling services, flying schools, car rental operations, and other associated uses.

Airport restricted access areas. Runways, taxiways, and other areas of an airport accessible to aircraft, whether access is restricted by the Federal Aviation Administration or not.

Alley. Any way designed primarily for vehicular and pedestrian or utility access to the back or side of

Temporary outdoor sales. Temporary uses, which may include temporary structures where goods are sold, such as but not limited to arts and crafts fairs, flea markets, rummage sales, consignment auctions, and holiday sales such as Christmas tree lots and pumpkin sales lots. Temporary outdoor sales does not include garage/yard sales, or outdoor sales related to a retail goods establishment where such goods are part of the establishment’s regular items offered for purchase.

Temporary outdoor storage container.

Temporary self-storage containers, delivered to a residence or business for the purpose of storing items, and subsequently picked up and stored at an off-site location until scheduled for retrieval.

Tenant. Any occupant in lawful possession of a rental unit, whether by lease, sublease, or otherwise.

Theater or performance hall (small). Any establishment with a total occupancy of fewer than 1,000 persons, devoted to showing motion pictures, or for dramatic, musical, or live performances.

Theater or performance hall (large). Any establishment with a total occupancy of 1,000 or more persons, devoted to showing motion pictures, or for dramatic, musical, or live performances.

Tidal waters. All waters affected by tidal action during the highest annual tide.

Transient guest. A person who occupies a facility offering accommodations on an overnight basis for compensation and whose actual occupancy is limited to no more than 15 days out of any 60-day period.

Tree. A woody perennial plant with a well-defined trunk(s) at least two inches in diameter at four and one half feet above the ground, with a more or less definite crown, and reaching a height of at least 10 feet at maturity.

Tree, feature mature. A tree that meets at least one of the following criteria:

- A. Any tree that is on the Register of Big Trees promulgated by the Maine Department of Agriculture, Conservation & Forestry (the “Big Tree List”)
- B. Certain trees 24” in diameter or greater (diameter at breast height or DBH) as identified by the City Arborist
- C. Ornamental trees 12” in diameter or greater (diameter at breast height or DBH) as identified by the City Arborist
- D. Rare tree specimen to include either a tree species classified as rare or endangered at either the state or federal level, and/or stands of native trees that are rare or threatened as identified by the City Arborist.

Tree, hazard. A tree with a structural defect, combination of defects, or disease resulting in a structural defect that under the normal range of environmental conditions at the site exhibits a high probability of failure and loss of a major structural component of the tree in a manner that will strike a target. A normal range of environmental conditions does not include meteorological anomalies, such as, but not limited to: hurricanes; hurricane-force winds; tornados; microbursts; or significant ice storm events. Hazard trees also include those trees that pose a serious and imminent risk to bank stability. A target is the area where personal injury or property damage could occur if the tree or a



6 USE STANDARDS

6.1 APPLICABILITY

6.1.1. In general

- A. The use of buildings, structures, private property, and City-owned property are governed by this article, except when superseded by other applicable laws or ordinances. It is the intent that, when in doubt, this article should be interpreted to accommodate the goals of the City’s Comprehensive Plan and other plans.
- B. All uses shall comply with any applicable federal and state requirements, and any additional applicable federal, state, county, and/or city ordinances.
- C. All uses shall comply with any supplemental use standards in Section 6.4 as applicable. Use standards address specific impacts, design or siting standards, and/or additional regulations outside of this Code.

6.2 DETERMINATION OF USE

6.2.1 Use tables

- A. Tables 6-A to 6-G shall determine if a use is permitted (●), conditional (◐), or not permitted () as a principal use within a zone. Where a use is listed as both permitted and conditional (●/◐), determination shall be based on the nature of such use as described in the use standards of Section 6.4. Unless otherwise noted, where a use is listed in terms of square footage, square footage figures shall correspond to the total square footage of the use as indicated.
- B. Certain uses within Tables 6-A to 6-G shall meet required use standards listed in Section 6.4. A reference is provided in the “Use Standards”

column the tables. In the case of conflict of required standards (i.e., a cross reference is missing from the table, the numbering of standards has changed but not updated in the Table, etc.), the use standards in Section 6.4 control.

6.2.2 Unlisted uses

- A. Uses not expressly listed as permitted or conditional in Tables 6-A to 6-G are prohibited as principal uses except that a use may be permitted subject to meeting the following performance-based standards:
 1. The proposed use is consistent with the purposes of the zone.
 2. The proposed use is closely related to a permitted or conditional use in terms of character, scale, and external impacts.
 3. The buildings and structures associated with the proposed use are designed and operated so that it will prevent undue adverse environmental impacts, substantial diminution of the value or utility of neighboring structures, or significant hazards to the health or safety of neighboring residents by controlling noise levels, emissions, traffic, lighting, odor, and any other potential negative impacts.
- B. The review authority shall determine whether the uses not listed as permitted or conditional uses meet the above standards. If it is determined that the use does not meet the above criteria, it shall not be permitted.
- C. The review authority may impose reasonable conditions of approval on the proposed use to ensure that it is similar in character and impact to a permitted or conditional use.

6.2.3 Multiple uses

- A.** A lot may contain more than one principal use, providing each use is allowed within the zone. Each principal use shall be permitted separately. In certain cases, uses are defined in Article 3 to include accessory uses that provide necessary support or are functionally integrated into the principal use.
- B.** Notwithstanding the above, and unless otherwise specifically permitted by this Code, lots containing a single family, two-family, three-family, or four-family dwelling may contain more than one principal use only so long as the total number of dwelling units on the lot does not exceed four, or three on the islands, not including accessory dwelling units.

6.2.4 Uses operated in an enclosed structure

- A.** In all mixed-use, office, and industrial zones, uses shall be operated within a completely enclosed structure, except for those customarily operated in open air.
- B.** In the mixed-use zones, open air activities shall be those licensed by the City.

6.2.5 Uses in zones not listed

- A.** Use permissions for certain zones within this Code are not included in Tables 6-A to 6-G, but are addressed separately as follows:
 - 1.** Use permissions for overlay zones are found in Article 8.
 - 2.** Use permissions for the India Street Form-Based Code (IS-FBC) zone are found in Article 9.
 - 3.** Use permissions for the waterfront zones are found in Article 10.

6.3 CHANGE OF USE

A change of use from one use in Tables 6-A to 6-G to another is governed by the requirements of the new use. The use of any part of any building, structure, or property shall not be changed to any other use, whether principal or accessory and whether alterations in the building, structure, or property are involved or not, until a permit and certificate of occupancy authorizing such change of use has first been secured from the Building Authority in accordance with Chapter 6 of the City of Portland Code of Ordinances.



USE STANDARDS

TABLE 6-A: PERMITTED AND CONDITIONAL USES IN RESIDENTIAL NEIGHBORHOOD ZONES

	RN-1	RN-2	RN-3	RN-4	RN-5	RN-6	Use Standards	
Residential	Single-family dwellings	●	●	●	●			
	Two-family dwellings	●	●	●	●			
	Three-family dwellings	●	●	●	●			
	Four-family dwellings	●	●	●	●			
	Multi-family dwellings	○	●	○	●	●	●	6.4.12
	Townhouse dwellings		●		●		●	6.4.13
	Group homes	○	○	○	○	○	○	6.4.17
	Lodging houses			○	○	●	●	6.4.21
	Child care centers + small child care facilities	○	○	○	○	○	○	6.4.9
Institutional	Elementary, middle, and secondary schools	○	○	○	○	○		
	Governmental uses	●	●	●	●	●		
	Places of assembly	○	○	○	○	○	○	6.4.30
	Post-secondary schools			○	○	○	○	6.4.31
	Residential care facilities (small)	○	○	○	○	○	○	6.4.35
	Residential care facilities (large)	○	○	○	○	○	○	
	Comm.	Bed and breakfasts				●/○	●/○	●/○
Hostels					●/○	●/○	●/○	6.4.18
Market gardens		○	○	○	○	○	○	6.4.25
Neighborhood nonresidential reuse		○	○	○	○	○	○	6.4.26
Other	Cemeteries	●	●	●	●	●		
	Parks and open spaces	●	●	●	●	●		
	Solar energy systems (minor)	●	●	●	●	●	●	6.4.38
	Utility substations	○	○	○	○	○	○	6.4.39

Key: ● = permitted | ○ = conditional | Blank = not permitted | ●/○ = permitted or conditional per use standards

TABLE 6-B: PERMITTED AND CONDITIONAL USES IN ISLAND ZONES

	IR-1	IR-2	I-B	Use Standards	
Residential	Single-family dwellings	●	●	●	
	Two-family dwellings	●	●	●	
	Three-family dwellings			●	
	Four-family dwellings			●	
	Multi-family dwellings			○	6.4.12
	Live/work dwellings			●	
	Lodging houses		○	●	6.4.21
Institutional	Child care centers + small child care facilities	○	○	●	6.4.9
	Cultural facilities			●	
	Elementary, middle, and secondary schools	○	○	○	
	Governmental uses	●	●	●	
	Places of assembly	○	○	●	6.4.30
Commercial / Service	Auto service stations			○	6.4.5
	Bed and breakfasts			●	6.4.7
	General offices			●	
	General services			●	6.4.15
	Greenhouses/nurseries (retail)			○	6.4.16
	Hotels			○	6.4.19
	Market gardens	○	○	●	6.4.25
	Neighborhood nonresidential reuse	○	○		6.4.26
	Restaurants			●	6.4.34
	Retail			●	6.4.36
	Specialty food service			●	
Other	Agriculture	●			6.4.3
	Boathouses and storehouses for fishing equipment	●	●	●	
	Campgrounds	○			6.4.8
	Cemeteries	○	○		
	Low-impact industrial			●	
	Marinas			●	
	Parks and open spaces	●	●	●	
	Solar energy systems (minor)	●	●	●	6.4.38
	Studios for artists and craftspeople	●	●	●	
	Utility substations	○	○	○	6.4.39
	Wharves, piers, docks, and landing ramps	●	●	●	

Key: ● = permitted | ○ = conditional | Blank = not permitted | ●/○ = permitted or conditional per use standards



TABLE 6-C: PERMITTED AND CONDITIONAL USES IN MIXED-USE ZONES

	B-1	B-2	B-2b	B-3 ¹	B-4	B-5	B-6	Use Standards
Residential	Two-family dwellings	●	●	●	●	●	●	
	Three-family dwellings	●	●	●	●	●	●	
	Four-family dwellings	●	●	●	●	●	●	
	Townhouse dwellings	●	●	●	●	●	●	6.4.13
	Multi-family dwellings	●	●	●	●	●	●	6.4.12
	Live/work dwellings	●	●	●	●	●	●	
	Lodging houses	●	●	●	●	●	●	6.4.21
	Child care centers + small child care facilities	●	●	●	●	●	●	6.4.9
	Clinics	●	●	●	●	●	●	
	Cultural facilities	●	●	●	●	●	●	
Institutional	Elementary, middle, and secondary schools	●	●	●	●	●	●	
	Emergency shelters				⓪	⓪	⓪	6.4.14
	Governmental uses	●	●	●	●	●	●	
	Places of assembly	●	●	●	●	●	●	6.4.30
	Post-secondary schools		●	●	●	●	●	6.4.31
	Residential care facilities (small)	●	●	●	●	●	●	
	Residential care facilities (large)		●	●	●	●	●	6.4.35
	Adult business establishments				●			6.4.2
	Auto, boat, and related dealerships		⓪			●		6.4.5
	Auto service stations		⓪	⓪		●		
Commercial / Service	Bars		●	●	●	●	●	6.4.6
	Bed and breakfasts	●	●	●	●			6.4.7, 6.4.10
	Exhibition, meeting, and convention halls				●	●	●	⓪
	Funeral homes		●	●		●		
	General offices	●	●	●	●	●	●	
	General services	●	●	●	●	●	●	6.4.15, 6.4.10
	Greenhouses/nurseries (retail)		⓪	⓪		⓪		
	Hostels	●			●		●	6.4.18, 6.4.10
	Hotels		●		●	●	●	6.4.19
	Intermodal transportation facilities		●	●	●	●	●	
Commercial / Service	Marijuana retail stores		●		●			6.4.23
	Market gardens	●	●	●	●	●	●	6.4.25, 6.4.10
	Recreation and amusement centers		●	●		●	●	

Key: ● = permitted | ⓪ = conditional | Blank = not permitted | ●/⓪ = permitted or conditional per use standards

TABLE 6-C (CONT.): PERMITTED AND CONDITIONAL USES IN MIXED-USE ZONES

	B-1	B-2	B-2b	B-3 ¹	B-4	B-5	B-6	Use Standards
Commercial/Service	Registered marijuana dispensaries		●	●	●			6.4.23
	Restaurants	●	●	●	●	●	●	6.4.34, 6.4.10
	Retail	●	●	●	●	●	●	6.4.36, 6.4.10
	Small-scale marijuana caregivers		●	●	●			6.4.23
	Specialty food service	●	●	●	●	●	●	6.4.10
	Theaters and performance halls (small)		●	●	●	●	●	
	Theaters and performance halls (large)		●	●	●	●	●	6.4.42
	Veterinary services		●	●		●		
	Animal-related services					●		
	Communication studios		●	●	●	●	●	
Industrial	Dairies		●	●	●			6.4.11
	Impound lots				●			6.4.20
	Laboratory and research facilities		○	○	○	●	○	○
	Low-impact industrial	●	●	●	●	●	●	6.4.22
	Marijuana manufacturing facilities					●		
	Marijuana testing facilities					●		6.4.23
	Printing and publishing				●	●	●	6.4.32
	Self-storage facilities					●		6.4.37
	Studios for artists and craftspeople	●	●	●	●	●	●	
	Warehousing and distribution facilities					●		6.4.40
Other	Marine uses					●	●	6.4.24
	Off-street parking				●/○	●	○	6.4.27
	Parks and open spaces	●	●	●	●	●	●	
	Social service centers		○	○	○	○	○	
	Solar energy systems (minor)	●	●	●	●	●	●	
	Solar energy systems (major)					○		6.4.38
	Utility substations	●	●	●	●	●	●	6.4.39
	Wind energy systems (minor)		○	○	○	○	○	6.4.41

Key: ● = permitted | ○ = conditional | Blank = not permitted | ●/○ = permitted or conditional per use standards

¹ Uses within the B-3 zone may be subject to the standards of the Pedestrian Activities District (PAD) Overlay found in Section 8.5 of this Code.

TABLE 6-D: PERMITTED AND CONDITIONAL USES IN TRANSIT-ORIENTED DEVELOPMENT ZONES

		TOD-1	TOD-2	Use Standards
Residential	Townhouse dwellings	●	●	6.4.13
	Multi-family dwellings	●	●	6.4.12
	Live/work dwellings	●	●	
	Lodging houses	●	●	6.4.21
Institutional	Child care centers + small child care facilities	●	●	6.4.9
	Clinics	●	●	
	Cultural facilities	●	●	
	Elementary, middle, and secondary schools	●	●	
	Governmental uses	●	●	
	Places of assembly	●	●	6.4.30
	Post-secondary schools		●	6.4.31
	Residential care facilities (small)	●	●	6.4.35
	Residential care facilities (large)	●	●	
	Bars	●	●	6.4.6
Commercial / Service	Exhibition, meeting, and convention halls		●	
	General offices	●	●	
	General services	●	●	
	Hostels		●	6.4.18
	Hotels		●	
	Intermodal transportation facilities	●	●	
	Recreation and amusement centers		●	
	Restaurants	●	●	
	Retail	●	●	
	Specialty food service	●	●	
Industrial	Theaters and performance halls (small)	●	●	
	Theaters and performance halls (large)	●	●	6.4.42
	Veterinary services	●	●	
	Communication studios	●	●	
Other	Low impact industrial	●	●	6.4.22
	Studios for artists and craftspeople	●	●	
	Parks and open spaces	●	●	
Other	Solar energy systems (minor)	●	●	6.4.38
	Utility substations	●	●	6.4.39

	TOD-1	TOD-2	Use Standards
Wind energy systems (minor)	⓪	⓪	6.4.41

Key: ● = permitted | ⓪ = conditional | Blank = not permitted | ●/⓪ = permitted or conditional per use standards

TABLE 6-E: PERMITTED AND CONDITIONAL USES IN OFFICE ZONES

	O	Use Standards
Inst.	Child care centers + small child care facilities	● 6.4.9
	Governmental uses	●
Com	General offices	●
	Office parks	● 6.4.28
Ind.	Laboratory and research facilities	●
	Printing and publishing	● 6.4.32
	Parks and open space	●
Other	Solar energy systems (minor)	● 6.4.38
	Utility substations	
	Wind energy systems (minor)	⓪ 6.4.41

Key: ● = permitted | ⓪ = conditional | Blank = not permitted | ●/⓪ = permitted or conditional per use standards



TABLE 6-F: PERMITTED AND CONDITIONAL USES IN INDUSTRIAL & AIRPORT ZONES

	I-L/I-Lb	I-M/I-Mb	I-H	A-B ¹	Use Standards
Institutional	Live/work dwellings	●			
	Airports			●	
	Child care centers + small child care facilities	●	●		● 6.4.9
	Emergency shelters	●	●	●	6.4.14
	Places of assembly	●			6.4.30
Commercial / Service	Bars			●	6.4.6
	General offices	●	●		6.4.15
	General services				●
	Hotels				●
	Intermodal transportation facilities	●	●		
	Market gardens	●			6.4.25
	Recreation and amusement centers	●	●		
	Restaurants				●
	Self-storage facilities		●	●	6.4.37
	Specialty food service	●	●		
	Veterinary services	●	●	●	
	Animal-related services	●	●	●	6.4.4
	Auto service stations	●	●	●	● 6.4.5
	Construction & engineering services	●	●	●	
	Dairies	●	●	●	
Food & seafood processing, packing, and distribution		●	●		
High-impact industrial uses			●		
Impound lots		●	●	6.4.20	
Laboratory and research facilities	●	●	●		
Low-impact industrial	●	●	●	6.4.22	
Lumber yards	●	●	●		
Marijuana cultivation facilities	●	●	●		
Marijuana manufacturing facilities	●	●	●	6.4.23	
Marijuana testing facilities	●	●	●		
Printing and publishing	●	●	●		

Key: ● = permitted | ● = conditional | Blank = not permitted | ●/● = permitted or conditional per use standards

TABLE 6-F (CONT.): PERMITTED AND CONDITIONAL USES IN INDUSTRIAL & AIRPORT ZONES

	I-L/I-Lb	I-M/I-Mb	I-H	A-B ¹	Use Standards	
Industrial	Recycling facilities		●	●	6.4.33	
	Solid waste disposal facilities		●	●	6.4.33	
	Studios for artists and craftspeople	●	●			
	Warehousing and distribution facilities	●	●	●	6.4.40	
	Off-street parking				●	
Other	Social service centers	⓪	⓪	⓪		
	Solar energy systems (minor)	●	●	●	6.4.38	
	Solar energy systems (major)		●	●		⓪
	Telecommunication towers (ground-mounted)		●	●		
	Utility substations	●	●	●	6.4.39	
	Wind energy systems (minor)	⓪	●	●	●	6.4.41
	Wind energy systems (major)		●	●	⓪	

Key: ● = permitted | ⓪ = conditional | Blank = not permitted | ●/⓪ = permitted or conditional per use standards

¹ Permitted uses on lots within airport restricted access areas shall be limited to those which do not require or encourage access or visits by the public and which provide technical administrative or other support to airport operations.



TABLE 6-G: PERMITTED AND CONDITIONAL USES IN OPEN SPACE ZONES

	OS-R ¹	OS-P	Use Standards
Cemeteries	●		
Cultural facilities	⓪		
Marinas	●		
Parks and open space	●	●	6.4.29
Solar energy systems (minor)	⓪		6.4.38, 6.5.6
Solar energy systems (major)	⓪		
Stadiums	⓪		6.5.6
Utility substations	●/⓪		6.4.39, 6.5.6
Wharves, piers, docks, and landing ramps	●	⓪	
Wind energy systems (minor)	⓪		6.4.41, 6.5.6

Key: ● = permitted | ⓪ = conditional | Blank = not permitted | ●/⓪ = permitted or conditional per use standards
¹ Accessory uses within structures of 2,500 SF or more shall be treated as a conditional use under subsection 6.5.6.

6.4 SUPPLEMENTAL USE STANDARDS

These standards shall apply to the following uses as indicated in Tables 6-A to 6-G, whether permitted or conditional. Where a use is allowed as conditional, these standards apply in addition to the general conditional use standards in Section 6.5.

6.4.1 In general

A. Street access. Unless specifically excepted under Section 7.4, a building or structure may only be constructed on or moved onto a lot, or a dwelling unit added to a lot, if one of the following conditions is met. These standards apply to all buildings and structures unless specifically exempted by this section.

1. *Existing, accepted streets.*
 - a. The lot has frontage on a paved and accepted City street with a minimum width of 10 feet on a one-way street and 20 feet on a two-way street, measured from curb to curb. In the absence of a curb, the minimum clear

paved width shall be measured from the edge of the pavement, excluding sidewalks.

- b. The lot has frontage on an accepted or continued street on an island in Casco Bay that meets a minimum width of 16 feet, measured from the edge of the pavement, or from the edge of the built surface if unpaved.
 - c. The required minimum width may be reduced, or the requirement waived on the islands only, if the Fire Chief and the Public Works Director or their designee(s) jointly determine that meeting the minimum width is impracticable and the City’s ability to provide services will not be unreasonably impaired by a reduction in width.
2. *Streets to be improved in connection with development.* The owner or developer of a lot that is not located on an existing,

accepted (or in the case of the islands, continued) street that meets the minimum criteria established above shall improve the street in accordance with the following.

- a. The street, between the lot and the nearest existing, accepted City street and including the frontage of the lot itself, shall be improved to meet the standards adopted elsewhere in this Code, including those adopted by the Public Works Authority and the Planning Authority. In the case of a corner lot, this shall apply to the frontage of the lot from which access is taken.
- b. The street may be improved to an alternative standard if the Fire Chief and the Public Works Director or their designee(s) jointly determine that:
 - i. Meeting the standards adopted elsewhere in this Code is impracticable;
 - ii. There is limited potential for further development on the street or for further connections to the City's existing street network; and
 - iii. The City's ability to provide services will not be unreasonably impaired by a modification of the standards of this Code.
- c. The owner or developer shall take all necessary steps under Chapter 25, Article III, of the City Code to dedicate the improved portion of the street to the City for acceptance. This shall include provision of a waiver of any

claim for damages that may result from acceptance.

3. *Exceptions.* On lots with an existing, inhabited structure or structures on an unaccepted City street, the following buildings and structures are exempt from the requirements of this subsection.
 - a. Accessory buildings not intended for habitation.
 - b. The addition of one accessory dwelling unit within an existing single-family dwelling.

6.4.2 Adult business establishments

- A. Adult business establishments shall be located at least 1,000 feet from any other adult business establishment, and at least 500 feet from any residential zone, as measured in a straight line from the nearest point of the lot line on the lot which the use is proposed to the nearest point of the lot line on the lot where the other use or zone is located, without regard to intervening structures or objects.
- B. No sexually explicit materials, entertainment, or activity shall be visible from the exterior of the premises.

6.4.3 Agriculture

- A. No animals shall be kept on any lot less than three acres or closer than 100 feet to any street or lot line, except domesticated chickens as regulated in Chapter 5 of the City of Portland Code of Ordinances.
- B. Raising of domesticated animals as a component of any agricultural use shall not create any odor, noise, health, or safety hazards, or other nuisance to neighboring properties.



- C. Raising of pigs or reptiles is not permitted.

6.4.4 Animal-related services

- A. In the B-4, I-L and I-Lb zones, animal-related services may not include kennel or boarding facilities.
- B. No animal-related service may include outdoor kennel facilities.
- C. Any exterior training and exercise areas shall be located in a side or rear yard only, and shall be completely fenced.
- D. Exterior training and exercise areas are not permitted within 200 feet of a residential zone.

6.4.5 Automobile, boat, and related dealerships and auto service stations

- A. In the B-2b zone, auto service stations shall only be permitted as an expansion of an auto service station in existence as of 11/15/1999.
- B. Signs shall not adversely affect visibility at intersections or access drives. Signs shall be constructed, installed, and maintained so as to ensure the safety of the public, and shall advertise only services or goods available on the premises.
- C. No ingress and egress driveways shall be located within 30 feet from an intersection. No entrance or exit for vehicles shall be in such proximity to a playground, school, church, other place of public assembly, or any residential zone that the nearness poses a threat or potential danger to the safety of the public.
- D. A landscaped buffer, no less than five feet wide, shall be located along street frontages (excluding driveways). The buffer shall consist of a variety of plantings in accordance with the City of Portland *Technical Manual*.

- E. Car washes shall be designed to avoid the tracking of residual waters into the street.

6.4.6 Bars

- A. In the B-6 zone, no bars located east of Waterville Street shall be permitted within 50 feet of Fore Street.

6.4.7 Bed and breakfasts

- A. Bed and breakfasts in the RN-4, RN-5, and RN-6 zones are allowed only as conversions of residential structures existing as of 3/3/1997. Such uses are a permitted use if they contain four or fewer guest rooms, and a conditional use if they contain five to nine guest rooms.
- B. In the RN-4, RN-5, and RN-6 zones, the minimum lot area for bed and breakfasts shall be 2,000 square feet for the first three guest rooms and 500 square feet for each additional guest room.
- C. In the I-B zone, bed and breakfasts are permitted on Peaks Island only. The minimum lot area for bed and breakfasts shall be 5,000 square feet for the first three guest rooms and 5,000 square feet for each additional guest room. When not served by public water and sewer, a bed and breakfast in the I-B zone shall require 10,000 square feet of lot area per guest room.

6.4.8 Campgrounds

- A. Campgrounds shall not include recreational vehicles.
- B. No tent shall be located within 75 feet of the perimeter of site.
- C. The land area of the campground shall not be less than the equivalent of 5,000 square feet of

land area per tent site exclusive of the roadway network.

6.4.9 Child care centers and small child care facilities

- A. Outdoor play areas shall be screened and buffered from surrounding residences with landscaping and/or fencing.
- B. Solid waste shall be stored in covered containers. Such containers shall be screened on all sides.
- C. For child care centers in residential and island residential zones, the following additional standards apply:
 1. Outdoor play areas shall be located in the side or rear yards only, and shall be screened from adjacent properties by a fence or wall at least 48 inches in height.
 2. The minimum lot area shall be 10,000 square feet.

6.4.10 Commercial and service uses in the B-1 zone

- A. Commercial and service uses in the B-1 zone shall be permitted provided that such uses generate less than 100 peak hour vehicle trips per 2,000 square feet of floor area and less than 100 peak hour vehicle trips in total.
- B. No beverage container redemption centers shall be permitted.

6.4.11 Dairies

In the B-2 and B-2b zones, dairies are permitted only if an expansion of an existing dairy.

6.4.12 Dwellings, multi-family

A. Use limitations

1. In the RN-1 and RN-3 zones, multi-family dwellings are allowed only as conversions of existing nonresidential structures.
2. In the I-B zone, multi-family dwellings are allowed only as conversions of existing residential or nonresidential structures.

B. Conversion standards

1. No multi-family conversion is allowed in an existing structure with less than 1,500 square feet of habitable floor area.
2. Any new off-street parking provided for multi-family conversion of existing residential structures shall be located to the side or rear of the structure.

6.4.13 Dwellings, townhouse

- A. For townhouse dwellings, interior side setback requirements do not apply to the interior side yard where the party wall for the structure is located. Such requirements only apply to end units without an attached party wall.
- B. There shall be a minimum separation of 15 feet between exterior sidewalls of townhouse buildings. Where the front or rear wall of a townhouse faces the front or rear wall of another townhouse, the minimum required separation between such buildings shall be 30 feet. Driveways and parking areas may be located within this minimum separation area.

6.4.14 Emergency shelters

- A. In the B-3 zone, no emergency shelters shall be permitted north of Oxford Street.
- B. The facility shall provide adequate space for conducting security searches and other assessments.



- C. The facility shall be designed with a centralized shelter operations office on each level providing sightlines to sleeping areas.
- D. A management plan adequately outlining the following areas shall be provided: management responsibilities; process for resolving neighborhood concerns; staffing; access restrictions; on-site surveillance; safety measures; controls for resident behavior and noise levels; and monitoring reports.
- E. Adequate access to and from fixed route transit service shall be provided. The facility shall be within a ¼ mile of fixed route transit service, or shall be within ½ mile of fixed route transit service and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit.
- F. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, housing assistance, or other programs.
- G. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site.
- H. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

6.4.15 General offices and general services

- A. General office and general service uses in the I-B and B-1 zones are limited to a maximum of 5,000 square feet of gross floor area.
- B. General office uses in the I-L and I-Lb zones shall be limited to those involving minimal public visitation and minimal direct service to the general public, primarily to provide support

services to larger organizations such as educational institutions, social service agencies, or business headquarters.

6.4.16 Greenhouses/nurseries (retail)

In the I-B zone, the indoor display of retail goods and point of sale area shall be limited to a maximum of 1,000 square feet.

6.4.17 Group homes

- A. Group homes shall be subject to the minimum lot area requirements for nonresidential uses.
- B. A group home shall not be located within 500 feet of another, as measured along street lines to the respective property lines.
- C. The Board of Appeals or Planning Board may impose conditions upon a conditional use permit concerning the creation or operation of a group home including but not limited to the following: site and building maintenance; lighting, fencing, and other appropriate security measures; screening and buffering of parking areas; compatibility of any additions or alterations with the existing residential structure; and compatibility of new structures with the architectural character of the surrounding area.

6.4.18 Hostels

- A. An operations plan shall be submitted demonstrating that:
 - 1. No unaccompanied minors under the age of 18 shall be permitted in the facility.
 - 2. The length of stay for transient guests shall not exceed 15 days within any 60-day period.
- B. In the RN-4, RN-5, and RN-6 zones, hostels are permitted if for no more than 10 overnight

transient guests, and conditional if for between 11 and 20 overnight transient guests. No more than 20 overnight transient guests shall be permitted.

- C. In the B-1 zone, no more than 20 overnight transient guests shall be permitted.

6.4.19 Hotels

- A. Hotels in the I-B zone are limited to a maximum of 50 guest rooms.
- B. The minimum gross floor area for hotels in the I-B zone shall be 5,000 square feet for the first three guest rooms and 5,000 square feet for each additional guest room. When not served by public water and sewer, a hotel in the I-B zone shall require 10,000 square feet of lot area per guest room.
- C. Hotels in the B-6 zone are limited to a maximum of 150 guest rooms.

6.4.20 Impound lots

Impound lots shall be at least 300 feet from any residential zone or lawfully conforming residential use.

6.4.21 Lodging houses

- A. In the RN-3 and RN-4 zones, lodging houses are allowed only as conversions of existing two-family, three-family, four-family, or multi-family residential structures, provided that the lodging house shall not be located within 500 ft. of another as measured along street lines.
- B. Lodging houses shall be subject to the minimum lot area requirements for nonresidential uses.
- C. Individual rooming units in a lodging house shall be a minimum of 70 square feet in area.

- D. Lodging houses shall provide a minimum of 200 square feet of combined rooming unit and common area per rooming unit.
- E. Lodging houses, except for lodging houses located in the IR-2 and I-B zones, shall contain common areas for use by residents, including a kitchen. A kitchen need not be available as a part of the common areas where all meals are provided on a daily basis.
- F. In the IR-2 and I-B zones, lodging houses are allowed with no more than nine rooming units. When not served by public water and sewer, lodging houses shall require 10,000 square feet of lot area per rooming unit.

6.4.22 Low-impact industrial

- A. Low-impact industrial in the B-1, B-2b, B-3, and B-6 zones is limited to a maximum of 10,000 square feet in gross floor area.
- B. In the B-6 zone, no brew pubs or microbreweries east of Waterville Street shall be permitted within 50 feet of Fore Street.
- C. When a low-impact industrial use is located in any mixed-use zone, the following standards apply:
 1. All circulation and maneuvering, including loading, unloading, and turnaround areas, must be located on site. No maneuvering, loading, or unloading may happen in the right-of-way.
 2. Truck loading, unloading, and access shall be located in the rear or interior side yard where possible.
 3. Shared infrastructure shall be utilized to the extent practicable, including but not limited to service alleys, parking areas, stormwater treatment, public transportation facilities, and driveways.



6.4.23 Marijuana-related uses

A. The following standards apply to the following marijuana-related uses:

1. Marijuana cultivation facilities.
2. Marijuana manufacturing facilities.
3. Marijuana retail stores.
4. Marijuana testing facilities.
5. Small-scale marijuana caregivers.
6. Registered dispensaries.

B. Location criteria

1. No marijuana cultivation facility, marijuana manufacturing facility, marijuana testing facility, small-scale marijuana caregiver, marijuana store, or registered dispensary may be located within 500 feet of a pre-existing public school, private school, or a public preschool program, as defined by 20-A M.R.S. § 1. Distance shall be measured in a straight line from the nearest point of the lot line on the lot which the use is proposed to the nearest point of the lot line on the lot where the public school, private school, or public preschool program is located, without regard to intervening structures or objects.
2. No marijuana cultivation facility, marijuana manufacturing facility, or marijuana testing facility may be located within 300 feet of any residential zone. Distance shall be measured in a straight line from the nearest point of the lot line on the lot which the use is proposed to the nearest point of the lot line on the lot where the residential zone is located, without regard to intervening structures or objects.

C. Marijuana retail stores and registered dispensaries may not exceed a maximum gross floor area of 2,000 square feet.

D. Marijuana cultivation facilities shall be limited to less than 2,000 square feet of plant canopy in the I-L/I-Lb zone and less than 7,000 square feet of plant canopy in the I-M/I-Mb zone.

E. For purposes of this ordinance, any approval issued for a marijuana cultivation facility, marijuana manufacturing facility, or marijuana testing facility operated pursuant to 22 M.R.S. § 2421 et seq. shall be deemed to constitute approval for the same corresponding marijuana cultivating, manufacturing, or testing facility use operating under 28 M.R.S. § 101 et seq. Notwithstanding the above, no marijuana cultivation facility, marijuana manufacturing facility, or marijuana testing facility may operate without the applicable state and City license.

6.4.24 Marine uses

- A.** In the B-5 zone, marine uses shall include marine products wholesaling and retailing; harbor and marine supplies and services; marine repair services and machine shops; shipbuilding and facilities for the construction, maintenance, and repair of vessels; marine museums and aquariums; boat repair yards; boat storage; and seafood processing, packing, and distribution for human consumption.
- B.** In the B-6 zone, marine uses shall include marine products wholesaling and retailing; harbor and marine supplies and services; and underground marine fuel storage provided that such storage shall be used solely for the purpose of fueling vessels.

6.4.25 Market gardens

Market gardens may be located outdoors or fully enclosed within a permanent building, subject to the following:

- A.** Outdoor market gardens are limited to the cultivation of herbs, fruits, flowers, or vegetables, including the cultivation and tillage of soil and the production, cultivation, growing, and harvesting of any agricultural, floricultural, or horticultural commodity.
- B.** The keeping of livestock, chickens or other poultry, and apiaries are prohibited.
- C.** Greenhouses, including high tunnels/hoop-houses, cold-frames, and similar structures, are permitted to extend the growing season.
- D.** Accessory structures, including but not limited to a shed or utility building necessary for the use's operation may be allowed for the storage of tools and materials. All accessory structures shall be located a minimum of five feet from any lot line.
- E.** Farmstands are permitted, and are limited to sales of items grown at the site. Farmstands shall be removed during the time of the year when the use is not in operation. Only one farmstand is permitted per market garden.
- F.** When located in a fully enclosed permanent building, market gardens may include all of the forms of cultivation and production allowed for outdoor market gardens, as well as hydroponics, aquaponics, myco-culture, and other similar indoor crop-production techniques.
- G.** Market gardens within a fully enclosed permanent building may include an area within the building for sales of items grown at the site. Such sales area may occupy no more than 15% of the floor area devoted to the principal use.

6.4.26 Neighborhood nonresidential reuse

- A.** Neighborhood nonresidential reuse is only allowed within existing structures that are

nonresidential in their original construction and/or current principal use as of the effective date of this Code.

- B.** The following nonresidential uses are permitted within a neighborhood nonresidential reuse. The initial conditional use approval for the neighborhood nonresidential reuse may specify one or more uses under the list below. A modification of the conditional use approval is required for a change to any of the uses below which were not specified in the initial or subsequent conditional use approval.
 - 1.** General offices <5,000 square feet
 - 2.** General services <5,000 square feet
 - 3.** Restaurants
 - 4.** Retail <5,000 square feet
 - 5.** Specialty food service
 - 6.** Studios for artists and craftspeople
- C.** No off-street parking is required for a neighborhood nonresidential reuse.
- D.** Drive-through facilities are prohibited for any neighborhood nonresidential reuse.
- E.** Neighborhood nonresidential reuses shall comply with the performance standards of the B-1 zone.

6.4.27 Off-street parking

- A.** In the B-3 zone, structured parking is a permitted use. Surface parking within the B-3 zone shall be allowed as a conditional use.
- B.** Surface parking in the B-3 and B-6 zones is subject to the following standards:
 - 1.** Surface parking lots shall be laid out in a manner conducive to development of future buildings, and/or structured parking on site.
 - 2.** All surface parking areas, including parking aisles, shall be located a minimum of 35

feet from any street. This 35-foot setback shall not apply to access drives oriented perpendicularly to a street.

- C. In the B-3, B-5, and B-6 zones, structured parking is subject to the following standards:
 - 1. Parking structures shall incorporate ground-floor retail space or other non-parking and active use space along all street frontages. Such retail or active space shall maintain a minimum depth of 30 feet from all street-facing façades of the structure.
 - 2. The Planning Board may waive the requirement for ground-floor retail or other non-parking and active use space upon demonstration that the project meets at least one of the following criteria:
 - a. The applicant demonstrates that steepness of grade or the character of the adjacent street does not support retail or other non-parking and active use space.
 - b. The ground floor of the garage is set back a minimum of 35 feet from the street right-of-way, and its design does not serve as an impediment for the development of space between the structure and the right-of-way for retail or other non-parking and active use in the future. Any such space located between the structure and the right-of-way shall not be used for surface parking.
 - c. The applicant demonstrates, to the satisfaction of the Planning Board, that market support for ground floor retail or other non-parking active uses does not currently exist. In such cases,

the structure of the garage shall be designed to accommodate such spaces in the future as follows:

- i. On the ground floor of a structure, a minimum of 30 feet in depth, measured from the façade of the structure, shall be designed to accommodate retail or active uses in the future.
 - ii. Such space shall maintain a minimum height of 12 feet from finished floor to finished ceiling. Where a parking structure fronts on more than one public street, and where there is an existing change in grade elevation of over 5% across the footprint of the garage, this requirement only applies to the frontage facing the street with higher traffic volumes.
 - iii. The applicant must demonstrate that the design of the parking structure anticipates the future development of utilities and circulation necessary to support non-parking active uses.
- 3. In cases where the Planning Board waives the requirement for ground-floor retail or other non-parking and active use space, garages shall be designed to enhance the pedestrian experience and disguise the parking use to the greatest extent possible. Use of traditional storefront design concepts and traditional building materials is encouraged.

6.4.28 Office parks

- A.** Office parks shall have a minimum gross area of three acres of contiguous land, and may be developed with multiple buildings on a single lot under common ownership, or as a coordinated development on multiple parcels under unified control or management.
 - B.** Office park development proposals shall include a master plan of the office park, which shall include the following:
 - 1.** The location of the building(s) on the site.
 - 2.** The location of infrastructure on the site.
 - 3.** The location of all common areas and landscape buffers.
 - 4.** Identification of traffic circulation patterns, traffic controls, and parking areas, including demonstration that additional traffic generated by the project itself can be reasonably accommodated on existing public streets.
 - 5.** Identification of internal sidewalks, illustrating the manner in which the developer will provide this amenity to take advantage of the topography and natural features of the site.
 - 6.** Building elevation drawings which indicate architectural style, exterior finishes and color, building height and scale, and location and scale of window and door openings. Samples of exterior building materials shall also be submitted.
 - 7.** The location and style of lighting to be used in the development.
 - 8.** Identification and description of all proposed signage.
 - 9.** A description of phasing and timing of the development.
 - 10.** A description of any proposed private development restrictions.
 - 11.** Delineation of the subdivision of land, if proposed as a coordinated development on multiple parcels.
 - 12.** Any other information necessary and sufficient to ensure compliance with the standards in this subsection.
- C.** Office parks shall include a landscape program that meets the following standards.
- 1.** All land areas not covered by structures, parking areas, or circulation facilities shall be landscaped and maintained.
 - 2.** To soften the visual impact of large expanses of pavement in parking lots, vegetation shall be planted or retained in islands or planting strips where required by the site plan or subdivision ordinance.
 - 3.** Landscape buffers shall be provided to screen areas abutting a residential zone or use, and to screen parking lots and driveways from public view. The buffer shall be of a dense and continuous nature and shall incorporate trees, shrubs, fencing, berms, and related elements deemed necessary.
- D.** Office parks shall consider and be sensitive to the need to preserve natural features on site. Natural features include, but are not limited to existing vegetation, floodplains, rock outcroppings, surface water bodies, drainage swales and courses, and wetlands.
- E.** All light fixtures shall be hooded or shielded so that the light shines downward.

6.4.29 Parks and open spaces

In the OS-P zone, parks and open spaces shall be limited to passive recreational use, including but not



limited to trails and paths for pedestrians and bicyclists, and areas for fishing, hiking, wildlife management and conservation activities. Essential services shall also be permitted.

6.4.30 Places of assembly

- A. In all RN zones, construction of a new principal building as a place of assembly is permitted only on lots with frontage on collector or arterial roads. Places of assembly are allowed on streets of any classification as adaptive reuse of existing structures that are nonresidential in their original construction and/or current use as of the effective date of this Code.
- B. Places of assembly in the B-1, I-L, and I-Lb zones are limited to 10,000 square feet or less in gross floor area.

6.4.31 Post-secondary schools

- A. In any residential zone, expansion of existing post-secondary schools onto land other than the lot(s) on which the principal use is located shall be subject to a determination that the proposed use cannot be reasonably accommodated on the existing lot(s) through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas.
- B. In any residential zone, a new post-secondary school or expansion of an existing post-secondary school shall not cause displacement or conversion of existing residential uses.

6.4.32 Printing and publishing

Printing and publishing in the B-3, B-5, B-6, and O zones is limited to a maximum of 10,000 square

feet in gross floor area, unless an expansion of a printing and publishing establishment greater than 10,000 square feet and in existence as of 4/4/1988.

6.4.33 Recycling and solid waste disposal facilities

Within the I-M/I-Mb zone, recycling and solid waste disposal facilities are permitted within an enclosed structure only.

6.4.34 Restaurants

- A. In the B-1 zone, restaurants are limited to a maximum of 2,000 square feet in gross floor area, shall not operate between the hours of 11 p.m. and 6 a.m., and shall not accept deliveries or services between the hours of 10 p.m. and 7 a.m. Food service and consumption shall be the primary function.
- B. In the B-6 zone, restaurants located east of Waterville Street within 50 feet of Fore Street shall be limited in hours of operation to between 5 a.m. and 11 p.m. each day, and food service and consumption shall be the primary function of the restaurant.

6.4.35 Residential care facilities

In the residential zones, large residential care facilities shall require a minimum lot area of 20,000 square feet.

6.4.36 Retail

- A. In the I-B zone, retail uses are limited to a maximum of 10,000 square feet in gross floor area.
- B. In the B-1 zone, retail uses are limited to a maximum of 5,000 square feet in gross floor area, and shall not operate between the hours of 11 p.m. and 6 a.m., and shall not accept

deliveries or services between the hours of 10 p.m. and 7 a.m.

- C. Retail in the B-3 and B-5 zones shall not include wholesale or bulk purchase sales of lumber and construction supplies, truck rental establishments, sales, rental, and repair of heavy equipment, or wholesale establishments, including establishments where membership is required.

6.4.37 Self-storage facilities

- A. Storage units shall not be used for residential occupancy or business.
- B. Plumbing connections shall not be permitted in self-storage units.
- C. The following additional standards apply to self-storage facilities with units accessed directly from the outdoors:
 1. Outdoor self-storage facilities shall be oriented so that storage unit access doors do not face the public right-of-way.
 2. Outdoor self-storage facilities are allowed to include an area for storage of recreational vehicles. Storage areas for recreational vehicles shall be located in the rear yard.
 3. No storage of recreational vehicles is allowed within 25 feet of any rear lot line. No storage of recreational vehicles is allowed within 30 feet of any interior side lot line. No storage of recreational vehicles is allowed within 50 feet of any front or corner side lot line.
 4. If storage areas for recreational vehicles are provided, they shall be screened along interior side and rear lot lines with a solid fence or wall, a minimum of six feet and a maximum of seven feet in height. Shrubs

shall be planted and spaced sufficiently to form a continuous linear hedgerow at plant maturity; plantings shall be placed inside the fence oriented toward the interior of the lot.

6.4.38 Solar energy systems (major and minor)

A. In general

1. All solar energy systems shall meet the technical, safety, and maintenance standards in the City of Portland *Technical Manual*.
2. Solar energy systems shall minimize impacts resulting from construction and maintenance of the solar energy system, including lighting, security measures, traffic, and grid connections.
3. Solar panel placement shall minimize or negate any solar glare impacting nearby properties or roadways, without unduly impacting the functionality or efficiency of the solar energy system.

B. Ground-mounted solar energy systems

1. Ground-mounted solar energy systems are only permitted in the B-4, I-L, I-Lb, I-M, I-Mb, I-H, and A-B zones.
2. Ground-mounted solar energy systems shall be located away from and screened from public ways and nearby residential/institutional uses to the extent possible and shall be designed to minimize impacts on significant scenic views.
3. Layout and fencing for ground-mounted systems shall be integrated with existing landscape and minimize removal of vegetation to the extent possible.
4. Minor ground-mounted solar energy systems shall be located a minimum 50



feet from all RN zones, and the B-1 and B-2/B-2b zones.

5. Major ground-mounted solar energy systems shall be located at least 75 feet from all RN zones, and the B-1 and B-2/B-2b zones.
6. The absolute height of any ground-mounted solar energy system shall be no more than 20 feet above the ground as measured from the base of the support.
7. The following components of a ground-mounted solar energy system shall be counted as impervious in the calculation of landscaped open space ratio:
 - a. Foundation systems, typically consisting of driven piles, monopoles, or helical screws with or without small concrete collars or weighted ballast.
 - b. All mechanical equipment of the solar energy system, including maximum horizontal extents of any concrete pad or any pad mounted structure for batteries, switchboard, transformers, or storage cells.
 - c. Paved access roads servicing the solar energy system.

C. Roof-mounted solar energy systems

1. Roof-mounted solar energy systems are not included in the calculation of maximum structure height.

Solar energy systems mounted on flat roofs shall meet the following standards:

- a. In residential zones, solar energy systems mounted on flat roofs are limited to a height of 5 feet above the surface of the roof upon which they are mounted, and shall be set back from the edge of the roof one foot for

every one foot of solar energy system height.

- b. In B-4 and industrial zones, flat roof-mounted systems are not subject to limitations on height, or to a required setback.
 - c. In all other zones, solar energy systems mounted on flat roofs are limited to a height of 8 feet above the surface of the roof upon which they are mounted, and shall be set back from the edge of the roof one foot for every one foot of solar energy system height.
2. Solar energy systems mounted on pitched roofs shall meet the following standards:
 - a. Solar energy systems on pitched roofs shall be mounted with a maximum distance of one foot between the surface of the roof to the highest point of the system.
 - b. Solar energy systems on pitched roofs shall be installed parallel to the roof surface on which they are mounted.
 - c. Solar energy systems on pitched roofs may not extend higher than the highest point of the roof surface upon which they are mounted.

6.4.39 Utility substations

- A. Utility substations shall be as small in size as practicable, and shall be set back a minimum of 35 feet from any right-of-way, not including limited-access roads.
- B. Substations shall be suitably screened and landscaped so as to ensure compatibility with the surrounding neighborhood. The remainder of the lot not occupied by the utility substation

and its related access shall be designed and designated for future development.

- C. In the OS-R zone, sewage pumping and treatment facilities shall be permitted. Water pumping stations shall be treated as a conditional use and subject to the additional standards of subsection 6.5.6.

6.4.40 Warehousing and distribution facilities

- A. Warehousing and distribution facilities in the I-L and I-Lb zones are limited to a maximum of 10,000 square feet in gross floor area.
- B. No outdoor storage is permitted as a component of warehousing and distribution in the B-4 and I-L/I-Lb zones, except for boat storage.

6.4.41 Wind energy systems (major and minor)

A. General

- 1. All wind energy generation equipment shall be approved under a certification program approved by the U.S. Department of Energy.
- 2. Wind energy systems, including foundations and support structures, electrical connections, control equipment, and associated site improvements shall be designed, engineered, and installed to comply with all applicable local, state, and federal construction and electrical regulations and Federal Aviation Administration regulations. Applicable state and local approvals shall be obtained prior to installation of any wind energy system.
- 3. All on-site electrical wiring associated with the proposed wind energy system shall be located within the tower/pole/supporting

structure or underground. Above ground on-site connections near substations or to the electric grid shall be allowed.

- 4. Wind energy systems shall be designed to avoid electromagnetic interference with the transmission or reception of radio, telephone, television, microwave, navigational, or similar signals to neighboring areas.

B. Setbacks

- 1. Minor ground-mounted wind energy systems shall be set back from all property boundaries and street right-of-way lines by a distance equal to or greater than 1.1 times the total height of the system, measured from the base of the system to the top of the system at maximum vertical rotation. The setback distance shall be measured to the center of the wind generator base.
- 2. Major ground-mounted wind energy systems shall be set back from all property boundaries and street right-of-way lines by a distance equal to or greater than 1.5 times the total height of the system, measured from the base of the system to the top of the system at maximum vertical rotation. The setback distance shall be measured to the center of the wind generator base.

C. Height

- 1. Ground-mounted wind energy systems are limited to a maximum height of 65 feet in the B-2/B-2b, B-5, and B-6 zones.
- 2. All moving components of a ground-mounted wind energy system shall be a minimum of 12 feet from ground level or accessible surface.



D. Siting and placement

1. No wind energy system shall be located within 250 feet of any significant wildlife habitat, as defined by the Maine Department of Environmental Protection/Maine Department of Inland Fisheries and Wildlife under provisions of the Natural Resources Protection Act (38 M.R.S. § 480 et seq.) including wildlife habitat for species appearing on the official state and federal list of endangered or threatened animal species.
2. For all major and minor wind energy systems, or any system over 100kW, evidence shall be provided that the Environmental Coordinator of the Maine Department of Inland Fisheries and Wildlife and the Maine Natural Area Program have been notified of the location, height, and design of the proposed wind energy system at least three weeks prior to any final determination under this subsection. Any comments received therefrom shall be addressed to the satisfaction of these state authorities prior to any final determination under this provision.
3. The support structure (e.g. tower, pole) for ground-mounted wind generating systems shall not be climbable for a minimum height of 12 feet above the surrounding ground level. All ground-mounted electrical and control equipment shall be labeled and secured to prevent unauthorized access.
4. The use of guy wires is discouraged. If required, they shall be located away from pedestrian routes/access points and

marked with visible, reflective, colored objects, such as flags, reflectors, or tape, which shall be placed on the anchor points of guy wires and along the guy wires up to a height of ten feet from the ground.

5. Ground-mounted wind energy systems shall be located away from and screened from public ways and nearby residential/institutional uses to the extent possible and shall be designed to minimize impacts on significant scenic views.

E. Illumination and signs

1. No part of the system may be illuminated, except as required by the Federal Aviation Administration (FAA) or other authorities for safety and security purposes. Where lighting is required, it shall be at the lowest intensity allowable with fixtures shielded and directed to minimize glare and visibility from the ground.
2. There shall be no signs, advertisements, flags, or decorative items on a wind energy system or any associated facilities, except for the manufacturer's/installer's/owner's identification (not exceeding one square feet in size), appropriate warning signs, or lights if required by the FAA.

6.4.42 Theaters and Performance Halls (large) in the B-3 and WCZ zones

- A. A large theater and performance hall may not be located within 750 feet of another large theater and performance hall, as measured along or across public ways from the main entrance of each. The main entrance is defined as one or more public entrances intended to provide primary access for patrons to areas designed for public use, such as lobbies.

vestibules, concourses, seating areas, or similar spaces. This definition does not include secondary entrances used primarily for staff, production, limited public or ADA access, or performers.

- B. Any large theater and performance hall located in the B-3 or WCZ zones on or before December 1, 2024 shall not be required to comply with this dispersal requirement. If located within 750 feet of another large theater and performance hall, such business shall be considered a lawfully nonconforming use subject to the standards of Article 4 of this Code.
- C. Where two or more large theater and performance halls operate on one site, and where each entity requires or has a separate business license, or displays in a manner visible from public property separate business trademarks, logos, service marks, or other mutually identifying names or symbols, each entity shall be counted as a separate large theater and performance hall for the purposes of this section.

6.5 CONDITIONAL USES

6.5.1 Conditional use review procedure

- A. **Review authority.** The Zoning Board of Appeals shall review all conditional use applications, with the exception that the Planning Board shall review all conditional use applications associated with projects that are otherwise before the Planning Board.
- B. **Application.** Applications for conditional use review shall be submitted to the Building Authority for all Zoning Board of Appeals reviews and the Planning Authority for all Planning Board reviews. A nonrefundable

application fee, as established from time to time by the City Council to cover administrative costs and costs of a hearing, shall accompany each application. The application shall be in such form and shall contain such information and documentation as shall be prescribed from time to time by the review authority.

- C. **Public hearing.** A public hearing shall be set, advertised, and conducted by the review authority in accordance with Article 2 of this Land Use Code.
- D. **Action.** Within 30 days following the close of the public hearing, the review authority shall render its decision, in a manner and form specified by Article 2 of this chapter, approving the conditional use, approving the conditional use subject to conditions as specified in Subsection 6.5.3, or denying it. The failure of the review authority to act within 30 days shall be deemed an approval of the conditional use, unless such time period is mutually extended in writing by the applicant and the review authority. Within five days of such decision or the expiration of such period, the Building Authority or Planning Authority shall mail notice of such decision or failure to act to the applicant and, if a conditional use is authorized, list therein any and all conditions imposed by the review authority.

6.5.2 General conditional use standards

The review authority shall, after review of the application, approve a conditional use upon a finding that the proposed conditional use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the



same zone. The review authority shall find that this standard is satisfied if it finds that:

- A. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone.
- B. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.
- C. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.
- D. The proposed use will meet any additional zone or use-specific standards identified in Tables 6-A to 6-G and Section 6.4.

6.5.3 Conditions on conditional use approvals

The review authority may impose such reasonable conditions upon the premises benefited by a conditional use as may be necessary to prevent or minimize adverse effects therefrom upon other property in the neighborhood. Such conditions shall be expressly set forth in the resolution authorizing the conditional use. Violation of such conditions shall be a violation of this article.

6.5.4 Effect of issuance of a conditional use approval

The approval of a conditional use shall not authorize the establishment or extension of any use nor the development, construction, reconstruction, alteration, or moving of any building or structure, but shall merely authorize the preparation, filing, and processing of applications for any permits or approvals which may be required by the City of Portland Code of Ordinances, including but not limited to a building permit, a certificate of occupancy, subdivision approval, and site plan approval.

6.5.5 Limitations on conditional use approvals

No conditional use approval shall be valid for a period longer than three years from the date of approval, unless the conditional use has commenced or a building permit is issued and construction has begun within that period and is thereafter diligently pursued to completion, provided, however, that one or more extensions of said time may be granted if the facts constituting the basis of the decision have not materially changed and the two year period is not exceeded thereby. A conditional use approval shall be deemed to authorize only the particular use for which it was issued and such approval shall automatically expire and cease to be of any force or effect if such use shall for any reason be discontinued for a period of 12 consecutive months or more.

6.5.6 Supplemental standards for certain conditional uses in the OS-R zone

In addition to general conditional use standards and supplemental use standards, the following standards shall apply to stadiums, solar energy systems, water pumping stations, wind energy systems, and accessory uses within structures of 2,500 square feet or more within the OS-R zone:

- A. The use shall be in conformity with or satisfy a deficiency identified in a federal, state, regional, or City recreation and open space plan, including but not limited to the state *Comprehensive Outdoor Recreation Plan*, as such plans may from time to time be created or revised.
- B. Buildings and structures shall not obstruct significant scenic views presently enjoyed by nearby residents, passersby, or users of the site.
- C. Indoor recreation or nonrecreational uses in the OS-R zone shall serve a significant public purpose that cannot reasonably be accommodated outside of the OS-R zone.

6.6 ACCESSORY USES

6.6.1 In general

- A. Accessory uses shall be permitted in conjunction with permitted or conditional principal uses. Accessory uses shall be:
 1. Customarily found in association with the principal use.
 2. Generally consistent with the impacts of the principal use.
 3. Secondary in nature, clearly incidental and subordinate to the principal use in terms of area and function.
 4. Located on the same lot as the principal use unless otherwise permitted.
 5. Consistent with the intent of the zone.
- B. No accessory use or uses within a building shall occupy more than a combined total of 25% of the floor area of the principal building, with the exception of required off-street parking, unless otherwise provided in Subsection 6.6.2 below. In the case of multi-tenant buildings, this standard shall apply separately to each leased portion of the principal building.

- C. No accessory use or uses not within a building shall occupy more than a combined total of 25% of the unbuilt lot area, with the exception of off-street parking or as otherwise provided in Subsection 6.6.2.

6.6.2 Standards for specific accessory uses

A. Accessory Dwelling Units (ADUs)

1. Accessory Dwelling Units (ADUs) shall be permitted on all lawfully conforming and nonconforming lots with legal residential uses.
2. ADUs shall be permitted as new detached accessory structures, building additions, or within existing lawfully conforming or nonconforming structures. However, the addition of an ADU may in no way increase the degree of nonconformity of any structure unless otherwise permitted under this subsection.
3. Up to two ADUs shall be permitted per qualifying property.
4. Under circumstances where an existing nonconforming structure is converted to an ADU, the design of the ADU shall take into consideration to the extent practicable the privacy of adjacent properties.
5. An ADU shall be limited to a gross floor area of $\frac{2}{3}$ of the gross floor area of the largest principal unit on the lot. The aggregate square footage of detached ADUs on a lot shall not exceed the gross floor area of the principal structure.
6. ADUs shall be exempt from maximum lot coverage and minimum lot area per dwelling unit requirements.



7. Detached ADUs shall be limited to a maximum height of 18 feet, unless constructed above a garage, in which case the height of the structure shall be limited to 25 feet.
8. In residential zones, detached ADUs, regardless of size, shall be subject to side and rear setbacks for detached accessory structures less than 250 square feet, as established in Article 7.
9. Detached ADUs shall not be permitted between a principal structure and a front lot line.

B. Antennas, discs, transmitting and receiving equipment. Building-mounted antennas, discs, and other transmitting and receiving equipment shall be:

1. No taller than 15 feet above the highest structural steel of the building roof.
2. Setback no less than 15 feet from the building perimeter.
3. Integrated into the architecture of the building in placement, form, color, and material so as to screen or camouflage such equipment from public view.

C. Drive-throughs

1. Drive-throughs shall be permitted as an accessory use in the B-4 zone.
2. Drive-throughs shall be permitted as conditional accessory uses in the B-2 zone only if a drive-through was located on the site as of the effective date of this Code.
3. In all other zones, drive-throughs shall be prohibited.
4. Drive-throughs shall be subject to the following review standards:
 - a. All components of a drive-through, including, but not limited to, signs,

stacking lanes, menu/order boards, trash receptacles, and service windows shall be located to the side or rear of the principal building where practicable, except where such placement will be detrimental to an adjacent residential zone or use, and shall be located a minimum of 40 feet from any adjoining property in a residential zone. This distance shall be measured from the outermost edge of the outside drive-through feature to such property line. In addition, drive-through features shall be located a minimum of 25 feet from a right-of-way.

- b. The site shall have adequate stacking capacity for vehicles waiting to use these service features without impeding vehicular circulation or creating hazards to vehicular circulation on adjoining streets.
- c. Any speakers, intercom systems, or other audible means of communication shall not play pre-recorded messages. Any speakers, intercom systems, audible signals, computer prompts, or other noises generated by drive-through services or fixtures shall not exceed 55 dB or shall be undetectable above the ambient noise level as measured by a noise meter at the property line.
- d. Site and vehicular light sources shall not unreasonably spill over or be directed onto adjacent residential properties and shall otherwise conform to the lighting standards set

forth in the City of Portland *Technical Manual*.

- e. Where automobiles may queue, waiting for drive-through services, their impacts shall be substantially mitigated to protect adjacent residential properties from headlight glare, exhaust fumes, and noise. As deemed necessary by the review authority, mitigation measures shall consist of installation of solid fencing with landscaping along any residential property line which is exposed to the drive-through or the enclosure of the drive-through fixtures and lanes so as to buffer abutting residential properties and to further contain all associated impacts.
- f. Drive-through lanes shall be designed and placed to minimize crossing principal pedestrian access-ways or otherwise impeding pedestrian access.

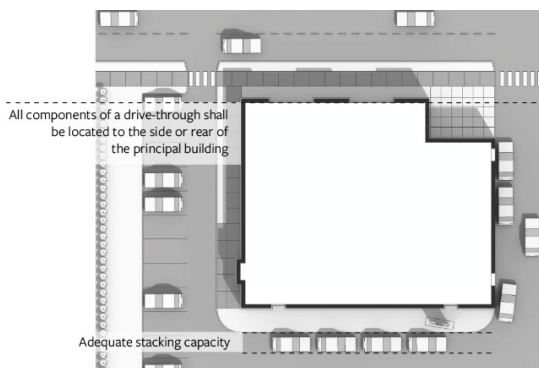


FIGURE 6-A: DRIVE-THROUGH SITING

- D. Heliports.** A heliport shall be designed and constructed in accordance with all federal and state regulations.
- E. Home occupations**

1. A home occupation shall be incidental to the residential use of a dwelling, and shall not change the essential residential character of the dwelling.
2. No interior or exterior alterations that are inconsistent with the residential use and character of the building shall be permitted. With the exception of a permitted sign, there shall be no evidence visible from the exterior of the premises that the property is used in any way other than as a dwelling. No display of products shall be visible from the exterior of the premises.
3. Exterior signs shall be limited to one non-illuminated sign not exceeding a total area of two square feet. Such sign must be affixed to the building, and may not project more than one foot from the façade of the building.
4. The home occupation and all related activity, including any storage, equipment, and display of products shall be conducted entirely within a principal building or accessory structure. This does not apply to the home occupation of licensed family childcare provider, which may include outdoor space needed to meet state licensing requirements.
5. No toxic, explosive, flammable, combustible, corrosive, etiologic, radioactive, biohazardous, or other restricted materials shall be used or stored as a component of a home occupation.
6. No home occupation shall include dispensing of medication from the dwelling.



7. The home occupation shall not produce any perceptible noise, vibration, heat, smoke, odor, electrical interference, dust or other particulate matter, or other nuisance effects in excess of that normally associated with residential use.
 8. A home occupation shall be limited to residents of the dwelling and no more than two nonresident employees on the premises.
 9. The home occupation shall not create vehicular or pedestrian traffic in greater volumes than average for a residential neighborhood. The home occupation and any related activity shall not create any traffic hazards or nuisances in public rights-of-way.
 10. Any clients or business-related visitors shall be limited to the hours of 7:00 a.m. to 8:00 p.m.
 11. The storage of semi-trucks, trailers, or heavy equipment such as construction or landscaping equipment used in a commercial business, is prohibited.
 12. Repair and service of any vehicles, any type of heavy machinery, or any type of engine, is prohibited. Repair of small electronics or appliances is allowed.
 13. A family childcare provider as a home occupation shall not be subject to floor area limitations for an accessory use, but shall be limited to the care of not more than 12 children and shall have no nonresidential employees.
 14. Businesses with no employees, no customers, and no external impacts are not considered home-occupations for the purposes of this subsection, and are exempt from its provisions. Remote work is also not considered a home occupation, and is exempt from these provisions.
- F. Makers' markets in the IL-b zone.** Makers' markets, including periodic or seasonal sale of handcrafted and limited production products for final consumption, which may include prepared or raw foods, shall be permitted as an accessory use in the IL-b zone, provided that:
1. Such sales are located within a lawfully conforming principal permitted use.
 2. Such sales occupy an area no larger than 45% of the floor area devoted to the principal use.
 3. Such sales by any single vendor or group of vendors shall occur for no more than a total of 28 hours a week collectively.
 4. Such products are produced or permitted to be produced in the IL/IL-b zone.
 5. Such products are sold by the producer of the product or their designee.
- G. Tasting rooms in industrial zones.** Tasting rooms shall be permitted as accessory uses on the premises of facilities where beer, wine, spirits, other alcoholic or non-alcoholic beverages, or food are produced, provided that:
1. Service of food in the facility is limited to that which does not constitute a full meal.
 2. No more than 10% of the beverage menu in tasting rooms accessory to beverage production or 10% of the food menu in tasting rooms accessory to food production is produced or manufactured off-site.
 3. Tasting rooms shall not be subject to the limitations on the use of unbuilt lot or yard area in Subsection 6.6.1(C).

H. Solar energy generation

1. Accessory solar energy systems shall be permitted in all zones except within cemeteries.
2. All accessory solar energy systems are subject to the following conditions:
 - a. All systems shall meet the technical, safety, and maintenance standards in the City of Portland *Technical Manual*.
 - b. Solar energy systems shall minimize impacts resulting from construction and maintenance of the solar energy system, including lighting, security measures, traffic, and grid connections.
 - c. Solar panel placement shall minimize or negate any solar glare impacting nearby properties or roadways, without unduly impacting the functionality or efficiency of the solar energy system.
 - d. Ground-mounted accessory solar energy systems shall be located in side or rear yards only, and shall be subject to all dimensional standards for detached accessory structures within Article 7 unless otherwise specified.
 - e. Building-mounted or roof-mounted accessory solar energy systems are not included in the calculation of maximum structure height, but must meet the following standards:
 - i. Systems installed on pitched roofs shall be installed parallel to the roof surface on which they are mounted, and may project a maximum of one foot from the surface of the roof to the highest

point of the system. Systems may not extend higher than the highest point of the roof surface on which they are mounted.

- ii. Systems installed on flat roofs must be set back a minimum of one foot for each foot of system height. Systems are limited to a height of five feet above the surface of the roof in all residential zones, 15 feet in the B-4 zone and industrial zones, and eight feet in all other zones.

- I. **Wind energy generation.** Ground-mounted and roof-mounted accessory wind energy systems shall be permitted as accessory uses within all zones. Accessory wind energy systems are subject to the following standards:

1. Accessory wind energy systems shall comply with all general use standards for wind energy systems as stated under Subsection 6.4.41.A of this article.
2. Properties shall be limited to one ground-mounted accessory wind energy system and two roof-mounted accessory wind energy systems.
3. The maximum height of a ground-mounted accessory wind energy system is 25 feet in all RN zones, the B-1 zone, and all island zones. In all other zones, the maximum height shall be the maximum height allowed within the zone or 45 feet, whichever is less.
4. The maximum height of any roof-mounted accessory wind energy system is 15 feet above the height of such structure. Roof-mounted systems are not included in the calculation of maximum structure height.



5. Roof-mounted accessory wind energy systems shall be set back from any edge of the building upon which they are mounted by a distance equal to or greater than the total height of the system, measured from the roof surface at the point of attachment to the top of the system at maximum vertical rotation. The setback distance shall be measured to the center of the wind generator base.
6. Ground-mounted accessory wind energy systems shall be setback from property lines by a distance equal to or greater than 1.1 times the total height of the system, measured from the base of the system to the top of the system at maximum vertical rotation. The setback distance shall be measured to the center of the wind generator base.
7. Ground-mounted accessory wind energy systems shall be located within the rear yard only and shall be sited to maximize existing vegetative or other screening from nearby residential buildings and public ways. The location shall minimize changes to existing topography and natural vegetation which would result from construction or maintenance of the system.

6.7 TEMPORARY USES

6.7.1 In general

Temporary uses may be permitted as determined by the Planning Authority or Building Authority. Temporary uses on private property shall comply with the standards of this section, as well as regulations pertaining to temporary uses contained

elsewhere in the City of Portland Code of Ordinances. All temporary uses require a temporary use permit unless specifically cited as exempt. A temporary use permit may be issued for additional temporary uses not specifically listed per Subsection 6.7.2(G) below. Temporary uses do not require additional parking unless specifically cited in the temporary use standards or stipulated as a condition of approval.

6.7.2 Standards for specific temporary uses

A. Farmstands

1. A farmstand for the sale of food or non-food crops grown only on the premises is permitted, and shall be exempt from temporary use permit requirements.
2. In the island zones, such stand may include the sale of agricultural products produced on the premises or the sale of fish or shellfish caught by the occupant of the premises.
3. Acceptable stands are a portable table or cart, and cannot exceed an area of 200 square feet.
4. Farmstands are permitted for no more than 180 days per calendar year, and shall be removed when not in use.
5. Farmstands must be set back from all public rights-of-way a distance of no less than five feet.

B. Garage/yard sales

1. A garage/yard sale is permitted as a temporary use on residential property, and shall be exempt from temporary use permit requirements.
2. Garage/yard sales are limited to no more than six days per calendar year.

C. Real estate project sales offices or model units

1. A real estate sales office/model unit(s) is allowed for a residential development.
2. No real estate sales office/model unit(s) may be located in a manufactured home or off-site.
3. The temporary use permit shall be valid for the life of the residential development project. The real estate sales office must be removed and/or closed within 30 days after the sale or rental of the last unit within the development. The model unit(s) must be closed within 30 days after the sale or rental of the last unit of the development.
4. All activities conducted within real estate sales office/model unit(s) must be directly related to the construction and sale of properties within the particular development. Use as a general office of operation of any firm is prohibited.

D. Temporary contractor's yards

1. A temporary contractor's yard is allowed incidental to a construction project.
2. The temporary use permit shall be valid for the life of the project, to be verified by open permits.
3. The temporary contractor's yard shall be removed within 30 days of the completion of construction, and the premises shall be restored to their pre-construction state.
4. Temporary contractor's yards shall be screened on all sides by a fence a minimum of six feet in height to a maximum of eight feet in height. Fencing shall not be required on shared lot lines if the abutting

lot contains a fence or other barrier that prohibits entry onto the lot.

E. Temporary outdoor sales

1. Temporary outdoor sales in residential zones are limited to those events conducted by and located on the premises of a place of assembly, an elementary, middle, or secondary school, or a post-secondary school, and shall be exempt from temporary use permit requirements.
2. Time limits shall be as follows:
 - a. Time limitations apply to the lot, not the operator of the use.
 - b. Temporary outdoor sales events in residential zones are limited to three events per calendar year, with a maximum of either three consecutive days, or two consecutive weekends. A minimum of 30 days between events is required.
 - c. Temporary outdoor sales events in nonresidential zones are limited to four events per calendar year, with a maximum duration of five days per event, and a minimum of 30 days between events.
 - d. Temporary outdoor sales events for seasonal sales, such as Christmas trees or pumpkins, are limited to four events per calendar year, with a maximum of 30 days per event and a minimum of 30 days between events.
 - e. Temporary outdoor sales events in any nonresidential zone must be located a minimum of 125 feet from a residential zone.

F. Temporary outdoor storage containers



The use of an outdoor storage container is limited to a maximum of 90 days per calendar year, and shall be exempt from temporary use permit requirements.

- G. Additional temporary uses.** In addition to the temporary uses listed above, a temporary use permit may be issued by the Planning Authority or Building Authority for other temporary uses that are substantially similar to a temporary use listed above. A permit may be issued if the Planning Authority determines that such use is compatible with the surrounding land uses and proper care has been taken to address potential impacts to surrounding land uses. The time limit of such temporary use will be determined and approved as part of the temporary use permit.

6.8 PERFORMANCE STANDARDS

All uses shall comply with the performance standards established in this section, unless any federal, state, or local law, ordinance, or regulation establishes a more restrictive standard, in which case the more restrictive standard shall apply.

6.8.1 Development in the OS-R and OS-P zones

All development in the OS-R and OS-P zones shall comply with the following development standards:

- A.** All ground areas not used for parking, loading, vehicular, or pedestrian areas and not left in their natural state shall be suitably landscaped and designed with quality materials that are consistent with adopted City policy or master plans, and which provide a comfortable, durable, accessible, readily maintainable, and aesthetically pleasing environment.
- B.** Natural features, such as mature trees and natural surface drainageways, shall be

preserved to the greatest possible extent consistent with the uses of the property.

- C.** Loading areas shall be screened and parking areas shall be screened and landscaped so as to avoid a large continuous expanse of paved area.
- D.** Buildings and structures shall be sited to avoid obstructing significant scenic views presently enjoyed by nearby residents, passersby, and users of the site.
- E.** Storage of commodities and equipment shall be completely enclosed within buildings or provided with screening by a fence, wall, or landscaping.
- F.** The outer perimeter of playfields, play lots, and other active recreational areas shall be screened, or shall be located a reasonable distance from any residential use.

6.8.2 Discharges

No discharge shall be permitted at any point into any private sewage disposal system, or stream, or into the ground, of any materials in such a way or of such nature or temperature as to contaminate any water supply, or otherwise cause the emission of dangerous or objectionable elements, except in accordance with standards approved by the Public Health Authority or by the Public Works Authority. No discharge into harbor water areas shall be permitted, unless permitted by the Maine Department of Environmental Protection under a waste discharge license and as approved by the Department of Public Works in accordance with Chapter 24 of the City of Portland Code of Ordinances. All private sewage disposal or private wastewater treatment facilities shall comply with the provisions of Chapter 24.

6.8.3 Electromagnetic interference

TABLE 6-H: NOISE STANDARDS

Zone	Daytime/Evening (7 a.m.-9 p.m.)	Night (9 p.m.-7 a.m.)
I-B	60 dBA	55 dBA
O	60 dBA	60 dBA
B-1	55 dBA	55 dBA
B-2/B-2b	60 dBA	55 dBA
B-3	60 dBA	55 dBA
B-4	65 dBA	60 dBA
B-5, B-6	60 dBA	50 dBA
I-L/I-Lb	60 dBA	50 dBA
I-M/I-Mb	70 dBA	55 dBA
I-H	75 dBA	55 dBA
A-B	60 dBA	60 dBA

In any industrial zone, there shall be no electromagnetic interference that adversely affects the operation of any equipment other than that belonging to the creator of such interference.

6.8.4 Exterior lighting

All exterior lighting shall be designed and installed with full cut-off fixtures to direct illumination onto the site and to prevent illumination from such fixtures on neighboring properties in accordance with the City of Portland *Technical Manual*.

6.8.5 Landscaping and screening

- A. In all mixed-use zones, the I-B zone, TOD zones, the O zone, and the A-B zone outside of restricted access areas, sites shall be landscaped to screen parking and accessory site elements, including storage and solid waste receptacles, from the right-of-way, public open space, or abutting residential zones.
- B. In the I-H zone, where a front yard abuts an arterial or a major collector street, it shall be

landscaped. Rear yards, side yards, and the perimeter of any parking area for greater than 15 vehicles shall be landscaped if visible from a right-of-way, public open space, or residential zone.

6.8.6 Noise

- A. No use shall be operated so as to generate recurring noises that are unreasonably loud, cause injury, or create a nuisance to any person of ordinary sensitivities.
- B. The maximum permissible sound level of any continuous, regular, or frequent source of sound produced by an activity shall be as shown in Table 6-H.
- C. Sound shall be measured as follows:
 - 1. For noise generated by a use in the I-L/I-Lb, I-M/I-Mb, and I-H zones, sound shall be measured at or within the boundaries of the nearest residential zone.
 - 2. For noise generated by a use in the B-1, B-2/B-2b, B-3, B-4, B-5, B-6, I-B, O, and A-B zones, sound shall be measured at lot boundaries.
- D. Sound levels shall be measured with a sound level meter with a frequency weighting network manufactured according to standards prescribed by the American National Standards Institute (ANSI) or its successor body.
- E. **Wind energy systems.** Where the underlying zone is residential and does not specify sound requirements, or where the system will be within 100 feet of a residential zone, sound generated by the wind energy system shall not exceed 45 decibels on the A scale between the hours of 9:00 p.m. and 7:00 a.m., and 50 decibels on the A scale between 7:00 a.m. and 9:00 p.m., as measured at the nearest property



line in accordance with this provision and technical standards set out in the City of Portland *Technical Manual*. Audible sound levels of wind energy systems shall include sounds generated in all conditions including low and high winds (furling, yawing, and flutter) and power outages (freewheeling).

F. Exemptions

1. Noises created by construction and maintenance activities between 7:00 a.m. and 9:00 p.m. are exempt from the maximum permissible sound levels set forth in Table 6-H.
2. The following uses and activities shall also be exempt from the requirements of Table 6-H:
 - a. The noises of safety signals, warning devices, emergency pressure relief valves, and any other emergency devices.
 - b. Traffic noise on public roads or noise created by aircraft and railroads.
 - c. Noise created by refuse and solid waste collection.
 - d. Emergency construction or repair work by public utilities, at any hour.
 - e. Noise created by any recreational activities which are permitted by law and for which a license or permit has been granted by the City, including but not limited to concerts, parades, sporting events, and fireworks displays.

6.8.7 Odor

It shall be a violation of this article to create an odor nuisance. An odor nuisance shall be considered to exist when 10 confirmed complaints relating to

odors of such intensity and character as to be detrimental to the public health and welfare occur in an area within two separate 24-hour periods. The 10 confirmed complaints must originate from 10 different households in a residential zone, or from 10 different individuals in a commercial or industrial zone.

6.8.8 Exterior stairways

Exterior stairs may be permitted, so long as such stairways shall have minimal visual impact upon the building and are located in the rear or side yard.

6.8.9 Outdoor storage

Outdoor storage shall comply with the requirements of Table 6-I.

6.8.10 Smoke and dust

Visible emissions from a direct or fugitive emission source may not exceed an opacity of 20% for more than 2.5 minutes in any half-hour period. All visible emissions must comply with the standards of the Maine Department of Environmental Protection.

6.8.11 Storage and repair of vehicles

- A. In all residential zones, all island zones, and the B-3 zone, only one unregistered motor vehicle may be stored outside, for a period not exceeding 30 days.
In all other mixed-use zones, storage of unregistered motor vehicles for more than 10 days, and outdoor storage of used automobile tires shall be prohibited.
- B. No partially dismantled, wrecked, or junked vehicles shall be stored outdoors. This provision does not apply to vehicles undergoing repair.

- C. All vehicle repair facilities shall be screened along interior side and rear lot lines by a landscaped buffer or solid fence a minimum of five feet in height.

6.8.12 Waste disposal

- A. All solid waste disposal, including materials which might cause fumes or dust, or constitute a fire hazard if stored outdoors, shall be only in fully enclosed, covered containers or receptacles. In all nonresidential zones except for the industrial zones, such containers or receptacles shall be within designated, screened areas. In industrial zones and the B-4 zone, outdoor storage of refuse, debris, or previously used materials awaiting reuse shall either be in an appropriate container or located within a designated, screened area.
- B. Containers or receptacles shall not leak or otherwise permit liquids or solids to escape from the container or be transferred beyond lot boundaries by natural causes or forces. Areas attracting large numbers of insects or vermin are prohibited.



USE STANDARDS

TABLE 6-1: OUTDOOR STORAGE STANDARDS

	B-1	B-2/ B-2b	B-3	B-4	B-5	B-6	I-B	O	A-B	I-L/ I-Lb	I-M/ I-Mb	I-H
There shall be no outdoor storage except for fully enclosed receptacles for solid waste disposal.	●		●		●	●		●				
All outdoor storage must be located a minimum of 20 feet from any lot line. However, when abutting a residential zone, all outdoor storage must be located a minimum of 100 feet from a lot line abutting such zone.		●		●			●		●	●	●	●
Outdoor storage areas must be designed and maintained so as to prevent the accumulation of debris and standing water that can attract insects and vermin. All outdoor storage areas shall employ measures to prevent displacement of materials and windblown dust or particulates, including the use of windbreaks, tarps, or other coverings to protect stored materials from the elements.		●		●			●		●	●	●	●
No outdoor storage shall be permitted in the front setback, except for storage for plant and tree nurseries or lumber yards if listed as a permitted use. All such storage located in the front setback shall consist of live plant materials or lumber products. No aggregate materials, machinery, or other materials or products shall be stored in the front setback.		●		●			●		●			
All outdoor storage shall be suitably screened from the public way and abutting properties by a landscaped buffer or solid fence at least five feet in height. This does not apply to storage of materials allowed in the front setback for plant and tree nurseries or lumber yards.		●		●			●		●			
Exterior lighting of outdoor storage areas shall not exceed that which is required for security purposes and shall meet the standards of Subsection 6.8.4.	●	●	●	●	●	●	●	●	●	●	●	●

- C. Where food processing is permitted, all food processing waste shall be stored within a completely enclosed structure. If not refrigerated, such waste shall be removed from the site in an enclosed container within 48 hours of its generation. All enclosed and exterior food processing waste storage areas shall be cleaned and sanitized on a regular basis.

6.8.13 Vibration

- A. In any mixed-use zone and the O zone, vibration inherently and recurrently generated shall be imperceptible without instruments at lot boundaries. This shall not apply to vibration resulting from activities aboard a vessel or from railroad vehicle activities, or from activities on a pile-supported pier.
- B. In all industrial zones, any use creating earthshaking vibrations, with the exception of airports, shall be controlled in such a manner as to prevent transmission beyond lot lines of vibrations causing a displacement of .003 or greater on one inch, as measured by a vibrograph or similar instrument at the property boundaries.

6.8.14 Entertainment businesses in the B-3 and WCZ zones

- C. In the B-3 and WCZ zones, a business with an entertainment license as required or authorized by Chapter 4, Section 4-51(a) of the City of Portland Code of Ordinance shall be considered an entertainment business for the purposes of this section., and may not be located within 100 feet of another entertainment business, as measured along or across public ways from the main entrance or

entrances of each. The main entrance is defined as one or more public entrances intended to provide primary access for patrons to areas designed for public use, such as lobbies, vestibules, concourses, seating areas, or similar spaces. This definition does not include secondary entrances used primarily for staff, production, limited public or ADA access, or performers. This dispersal requirement shall not apply to entertainment businesses that do not allow amplified entertainment.

- D. Any entertainment business located in the B-3 or WCZ zones on or before 3, 2006 shall not be required to comply with this dispersal requirement. If located within 100 feet of another entertainment business, such business shall be considered a lawfully nonconforming use subject to the standards of Article 4 of this Code. Any such business shall continue to be considered an entertainment business for the purpose of administering this dispersal requirement for a new or relocating entertainment business in the B-3 and WCZ zones.
- E. Where two or more entertainment businesses operate on one site, and where each business entity requires or has a separate business license, or displays in a manner visible from public property separate business trademarks, logos, service marks, or other mutually identifying names or symbols, each business entity shall be counted as a separate entertainment business for the purposes of this section.
- F. Following a hearing held pursuant to Chapter 15, Section 15-10 of the City of Portland Code of Ordinances, the Building Authority may impose conditions on the food service license of any

entertainment business in the B-3 and WCZ zones that operates between 1:00 a.m. and 4:00 a.m. to maintain or improve public safety. Such conditions may be imposed following a written recommendation from the Portland Police Department that such conditions are necessary. The Building Authority's decision may be appealed to the City Manager pursuant to Chapter 15, Section 15-9 of the City of Portland Code of Ordinances. Nothing in this section shall be construed to limit the Building Authority's authority in Chapter 15 to deny, suspend, or revoke any license pursuant to the standards and process in that chapter.

I. OVERVIEW

To inform discussion of potential amendments related to performance venue regulation, staff reviewed a range of peer jurisdictions to understand how other communities permit and regulate theaters, live performance venues, and similar assembly uses.

This review is based on outreach to peer planners and a review of relevant zoning and regulatory frameworks, providing both ordinance-level context and insight into how performance venues are regulated in practice.

II. SELECTION OF PEER COMMUNITIES

Peer communities were selected to reflect a mix of regional comparators and cities with active cultural and entertainment environments, including nearby New England municipalities, mid-sized cities with vibrant downtowns, and larger cities with established entertainment economies or strong live music identities. This range was intended to provide a balanced perspective across different governance scales and mobility contexts, including cities with robust public transportation systems as well as more auto-oriented communities, with some peers offering direct comparability to Portland and others illustrating how performance venues are regulated in larger or more specialized cultural settings.

III. CASE STUDIES

The jurisdiction names below are hyperlinked to each community's publicly available zoning or land development ordinance for reference.

A. Regional and Comparable New England Cities

1. [Worcester, MA](#)

Worcester regulates theaters and performance venues primarily through broad zoning permissions, with limited use-specific standards embedded in the zoning code. Theaters and concert halls are generally allowed in non-residential districts, including downtown, and the City does not impose spacing requirements or venue-specific overlays.

Many of Worcester's larger venues are located in historic or publicly supported facilities, and zoning has historically played a limited role in shaping their location. Downtown districts containing venues do not require off-street parking, and logistical considerations such as loading, crowd management, and traffic circulation are typically addressed through site design, transportation planning, and event coordination rather than zoning regulations.

As residential development has increased downtown, the city has begun to face more concerns about noise, parking demand, and crowd activity, but these issues are not currently addressed through targeted zoning tools.

2. [Burlington, VT](#)

Burlington regulates performance venues through a combination of zoning permissions and discretionary review, with performing arts centers subject to conditional use review in certain districts, which allows the city to evaluate potential impacts, such as traffic, noise, and neighborhood compatibility, on a case-by-case basis.

Peer outreach also highlighted recent regulatory changes in specific districts. For example, a prior size limitation on performing arts centers in a mixed industrial district was recently removed in connection with the potential relocation of a major regional venue. Planner input also noted that venue operations in some locations may be influenced by Vermont's Act 250 permitting process, which can impose event-related conditions at the state level.

3. [Portsmouth, NH](#)

Portsmouth regulates performance venues through zoning standards that differentiate between indoor and outdoor facilities. Performance facilities are generally permitted by right in mixed-use and downtown districts, with indoor venues required to maintain a minimum distance of 200 feet from any residential or mixed-residential district, and outdoor venues required to maintain a minimum distance of 500 feet. Additionally, indoor facilities are limited to operating hours of 8:00 AM to 11:00 PM, while outdoor facilities may operate between 4:00 PM and 11:00 PM.

It was noted that downtown venues typically do not require off-street parking and that relatively few ongoing operational conflicts have been reported related to venue activity.

4. [Providence, RI](#)

Providence regulates theaters and performance venues through a combination of zoning permissions and cultural policy initiatives centered in its downtown. Based on a review of their local ordinances, performance venues are located primarily within the downtown district, which has long functioned as the city's primary arts and entertainment hub.

Zoning allows performance venues within downtown mixed-use districts, with discretionary review applied in some cases, depending on scale and context. The city has historically supported clustering of venues through broader policy initiatives, including public investment in historic theaters and incentives intended to reinforce downtown as a cultural destination.

Providence's regulatory framework extends beyond zoning. In addition to land use controls, the city has explored operational and policy tools related to venue activity, including discussions of ticket surcharges for larger venues and continued public investment in arts and entertainment infrastructure.

B. Mid-Sized Cities with Active Downtown Cultural Scenes

1. [Cleveland, OH](#)

Cleveland regulates theaters and performance venues through zoning permissions in downtown and commercial districts. Based on a review of the City's ordinances, performance venues are permitted in a range of commercial and downtown districts, including areas that contain established cultural destinations such as Playhouse Square.

The City also applies an Entertainment Overlay District in select areas. The overlay supplements the underlying zoning districts by allowing a defined set of entertainment and nightlife uses, including theaters, nightclubs, and similar venues, within designated areas intended to accommodate concentrated entertainment activity. The overlay also includes provisions governing the concentration of adult entertainment uses within these districts.

2. [Madison, WI](#)

Madison has a diverse range of performing arts venues. These include newer large performing arts halls (three theaters of varying sizes, with the largest at approximately 2,200 seats) located directly across from a historic 1,800-seat theater, as well as a separate 2,500-seat venue. The city also includes a historic 1,000-seat theater near a former church converted into a 700-person standing-room music hall in a neighborhood commercial district.

In addition to performing arts venues, Madison is home to major sporting facilities, including the approximately 17,000-seat Kohl Center, which hosts University of Wisconsin hockey and basketball games as well as major concerts and events, and Camp Randall Stadium, an approximately 76,000-seat outdoor stadium that hosts University of Wisconsin football games and large-scale concerts.

Theaters, assembly halls, and concert halls are permitted uses in multiple downtown zoning districts. The City does not impose density or spacing requirements for these venues. Site access, circulation, and loading are addressed through the site plan review process.

3. [Buffalo, NY](#)

Buffalo regulates entertainment uses through a combination of base zoning permissions and a targeted downtown overlay. Based on a review of the City's ordinance, the underlying zoning districts establish where entertainment uses such as theaters, performance venues, and similar assembly uses are permitted.

The City also applies the Downtown Entertainment Review Overlay (N-DER) in portions of downtown with concentrated nightlife activity. Within the overlay area, the underlying zoning permissions remain in effect; however, certain late-night entertainment activities may be subject to additional review and permitting requirements. These provisions are intended to address potential operational and public safety considerations associated with higher-intensity nightlife activity, including events where alcohol is served, and large crowds may be present. As structured, the overlay functions as a targeted layer applied on top of the underlying zoning districts within designated downtown areas.

4. [Asheville, NC](#)

Asheville regulates performance venues through a combination of zoning permissions and operational regulations. Peer input indicates that performance venues are permitted in higher-intensity commercial districts, including the central business district, and the zoning ordinance does not include spacing requirements between venues.

Much of the regulatory framework identified through peer outreach is operational rather than zoning-based. Asheville's noise ordinance plays a significant role in managing venue impacts, with larger or louder venues requiring a sound exceedance permit that establishes limits on decibel levels, hours of operation, and the number of permitted events.

5. [Provo, UT](#)

Provo regulates theaters and performance venues through its base zoning framework rather than through a dedicated entertainment overlay or venue-spacing standard.

Under Provo’s zoning code (Title 14), land uses are organized by defined categories and permitted within specific zoning districts through district use tables. Theaters and similar assembly-oriented uses are regulated through those use tables, which establish where the use is permitted outright and where additional land use review may be required.

In addition to determining where such uses may locate, zoning establishes applicable development standards, including building height, setbacks, lot coverage, and off-street parking requirements tied to use category. Where discretionary review is required, the City may evaluate compatibility considerations such as traffic circulation and impacts on surrounding properties. The code does not establish venue-to-venue spacing requirements between entertainment uses. Operational matters, including occupancy limits and alcohol service, are governed outside zoning through building and licensing regulations.

6. [Greenville, SC](#)

Based on peer input, Greenville recently adopted an Entertainment District Overlay focused on a four-block area of downtown where a high concentration of bars and nightclubs had developed. The Planning Commission recommended approval of the overlay in November 2025, and City Council approved it at the end of the year. The overlay applies within a defined geographic area and supplements the underlying zoning regulations in that portion of downtown in response to the concentration of late-night uses.

In addition to zoning, Greenville utilizes a cross-departmental review body currently referred to as the Technical Advisory Committee, which is being renamed the Staff Technical Advisory Team (STAT). This team includes representatives from police, fire, building codes, planning, parks and recreation, and business licensing. The team reviews late-night, indoor, and outdoor entertainment uses and evaluates business plans and operational logistics such as hours of operation, loading and unloading, staffing plans, security plans, and the relationship between food and alcohol service. This process functions as an operational review mechanism separate from base zoning permissions.

With respect to large-scale venues, including the Bon Secours Wellness Arena and a proposed outdoor amphitheater in the downtown area, the City has considered engaging third-party acoustic engineering review to evaluate noise levels and identify mitigation strategies.

C. Larger Cities with Established Entertainment Economies

1. [New York City, NY](#)

New York City regulates performance venues primarily through zoning permissions that vary by district and use category. Based on peer outreach, the Zoning Resolution generally does not include spacing requirements between venues, meaning that if a use is permitted in a zoning district, it may locate near similar uses.

Theaters are broadly permitted as-of-right in many commercial and manufacturing districts. The zoning framework distinguishes between traditional theaters and larger assembly uses, with larger venues

more likely to require additional review or special permits depending on scale. New York City also employs specialized zoning tools in the Theater Subdistrict, such as restricting the demolition of theaters and provides floor area bonuses for new theater space. Parking requirements vary by district density, with no parking required in higher-density areas and capacity-based ratios applied in lower-density districts.

2. [Austin, TX](#)

Austin regulates theaters and performance venues through zoning permissions and targeted incentive programs. Based upon a review of the City's ordinances, the zoning code distinguishes between theaters and performance venues and allows these uses in central districts, including downtown.

Austin also incorporates live music into its development bonus framework. Through density bonus programs, projects may receive additional development capacity in exchange for incorporating and maintaining live music venues. These programs include requirements related to long-term operation, soundproofing, and continued use of the space as a live music venue.

3. [Boston, MA](#)

Boston regulates theaters and performance venues through district-based zoning permissions supplemented by project-level review and licensing requirements. Based upon a review of the City's ordinances, entertainment and cultural uses are permitted or conditionally allowed in certain mixed-use and commercial districts, with larger venues subject to additional development review depending on scale.

Boston does not include spacing requirements between venues in zoning. Instead, venue activity is addressed through a combination of zoning permissions, project-level review, and separate licensing and noise regulations. Major venues are concentrated in areas such as the Theater District, where multiple performance spaces are located within a compact downtown setting.

4. [Portland, OR](#)

Portland regulates theaters and performance venues through its use-category framework in Title 33 of the Planning and Zoning Code. The code does not define "music halls" or "concert venues" as standalone uses, but instead classifies entertainment uses within broader categories.

Under Chapter 33.920, theaters are classified as part of the Retail Sales and Service use category. Larger facilities drawing substantial event attendance are categorized as Major Event Entertainment, which includes uses such as stadiums, arenas, coliseums, auditoriums, exhibition and meeting areas, and fairgrounds. This classification determines how the use is treated for zoning purposes.

Whether a performance venue is permitted depends on the underlying zoning district. Title 33 use tables establish where these uses are allowed outright and where conditional use review is required. Zoning also regulates development standards applicable to such uses, including building height, setbacks, and off-street parking requirements where applicable.

Portland does not impose minimum spacing requirements between entertainment venues. Operational aspects of venue activity, including sound levels, hours of operation, occupancy, and alcohol service, are regulated outside the zoning code through separate noise, building, and licensing frameworks.

5. [Nashville, TN](#)

Nashville regulates theaters and related entertainment uses through its zoning district framework, which assigns specific uses to zoning districts and establishes development standards applicable to those uses. In the Metro Zoning District Land Use Table, “Theater” is listed under “Recreation and Entertainment Uses,” and the table identifies the zoning districts in which that use is permitted. Outside downtown, the underlying zoning designation determines whether a theater is permitted outright or is subject to additional land-use review.

Zoning also regulates physical development standards applicable to theater uses. These standards include requirements related to building height, setbacks, lot coverage, and off-street parking. Parking requirements are tied to use category and are typically calculated based on the nature or scale of the use. In areas governed by the Downtown Code, parking standards may be reduced or structured differently than in conventional zoning districts.

Within the downtown area, theaters and other entertainment uses are regulated under a separately adopted [Downtown Code](#) rather than the standard zoning district land use table. The Downtown Code establishes district-specific standards that govern building form, site design, and development intensity in the central business district.

Where a theater requires discretionary land-use approval in a particular zoning district, the review process allows the City to evaluate site-specific impacts, such as traffic circulation and compatibility with surrounding uses, and to impose conditions where appropriate. However, Nashville’s zoning code does not establish minimum spacing requirements between performance venues. Operational aspects of venue activity, including sound levels, hours of operation, alcohol service, and crowd management, are generally regulated through separate building, licensing, and public safety frameworks rather than through zoning separation requirements.

6. [Seattle, WA](#)

Seattle regulates theaters and performance venues through defined use categories within its Land Use Code and through development standards applicable within specific zoning districts.

The City’s zoning framework distinguishes among several theater- and assembly-related uses under the broader category of “Theaters and spectator sports facilities.” Subcategories include motion picture theaters, performing arts theaters, lecture and meeting halls, and spectator sports facilities. These defined use types are incorporated into the zoning code and are treated as distinct land use categories for regulatory purposes.

Whether a theater or performance venue is permitted depends on the underlying zoning district. In commercial and downtown zones, theater and spectator-related uses are generally permitted, subject to the development standards applicable to the district. In other zones, discretionary review may be required depending on the classification of the use and the zoning designation.

Seattle’s zoning code regulates several physical and site-related aspects of theater development. These include building height, bulk, setbacks, and floor area limitations based on the applicable zone. The code also establishes use-specific off-street parking requirements for certain theater and assembly categories, with parking ratios tied to the type of use. In higher-density urban centers and downtown districts, parking requirements may be reduced or modified.

Where discretionary land use review is required, the City may evaluate site-specific impacts such as traffic circulation, pedestrian access, and compatibility with surrounding uses and may impose conditions as part of the approval process. However, Seattle’s zoning code does not establish minimum spacing requirements between entertainment venues.

Operational aspects of performance venues, including sound levels, hours of operation, and alcohol service, are regulated outside the Land Use Code through separate municipal noise regulations, building and fire codes, and state licensing requirements.

IV. OBSERVATIONS

Across the peer communities reviewed, performance venues are typically permitted within downtown, commercial, or mixed-use zoning districts and are generally treated as compatible with higher-intensity urban environments. In both mid-sized and larger cities, theaters and performance halls are regulated primarily through use classification and district-based permissions that determine where such uses may locate and whether discretionary land use review is required.

None of the jurisdictions reviewed rely on citywide minimum spacing requirements between performance venues as a zoning mechanism. Instead, communities regulate entertainment uses through zoning-based development standards, discretionary review in certain districts, targeted overlay provisions in areas experiencing concentrated nightlife activity, and operational regulations addressing noise, occupancy, alcohol service, and event management.

In larger cities with established entertainment economies, zoning frameworks distinguish among different types of assembly and entertainment uses and regulate them through district standards and, in some cases, downtown-specific zoning codes. In these jurisdictions, venue clustering in central areas is generally managed through development standards and operational regulation rather than through spatial separation between entertainment uses.

One peer community, Portsmouth, NH, applies compatibility standards that include buffers between certain performance facilities and residential zoning districts. This approach differs from venue-to-venue spacing and instead focuses on separation between entertainment uses and nearby residential areas.

Mayor and Council Offices

Wesley Pelletier
City Councilor
January 30, 2026



HEDC Agenda Item #2: Review and recommendation of proposed Amendments to Chapter 14 Land Use Code regarding the Buffer Zone for Large Performance Halls with occupancy of 1,000 or more persons.

HEDC Meeting on February 3, 2026

This amendment to the land use code is intended to address widespread constituent concerns regarding the spacing of large entertainment venues in our downtown area. This amendment increases the buffer zone on the peninsula (zones B-3 and WCZ) for large entertainment venues—defined as those with a capacity of over 1000 people – to 750 feet. In doing so, the hope is to mitigate traffic snarls that are bound to arise from thousands of people arriving to and leaving from multiple venues at the same time.

As Portland’s density increases, the choices we make today will be felt for generations to come, and I believe that we as leaders must proactively ensure that we are using the power given to us by our constituents to ensure that we are building a city that makes sense.

Sincerely,

Wes Pelletier
City Council
City of Portland, Maine

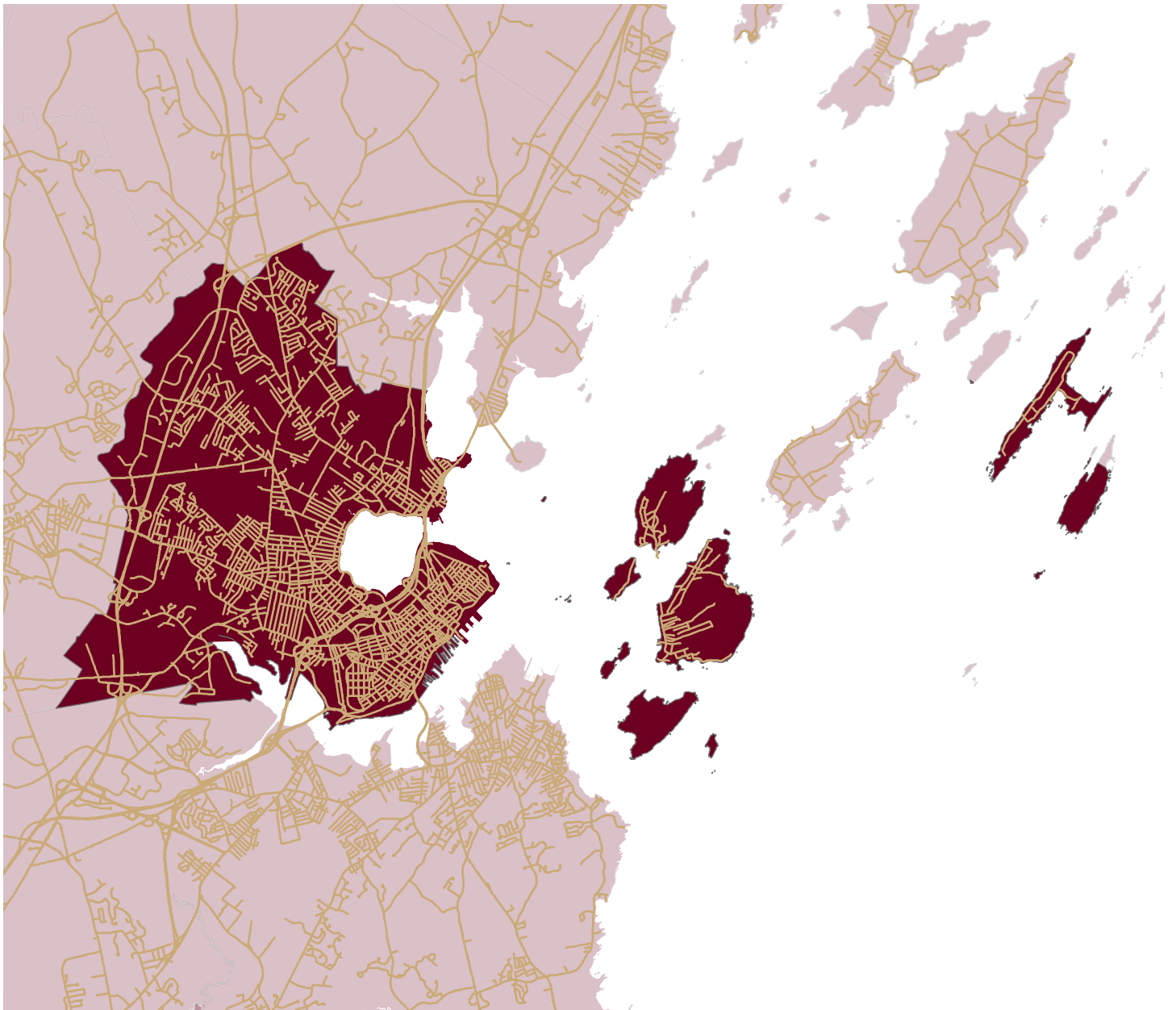


City of Portland Parking Study for Downtown, The Old Port, and The Eastern Waterfront

Final Report

September 2017

FORT HILL
infrastructure



TY·LIN INTERNATIONAL

Contents

- A. Executive Summary 1
- B. Existing Supply and Demand Analysis 15
 - B.1 Introduction 15
 - B.2 The Study Area 15
 - B.3 Employment 17
 - B.4 Population 20
 - B.5 Work Commute Travel Mode 21
 - B.6 Auto Ownership 23
- C. Existing Parking Information Technology 24
- D. Existing Parking Supply 25
 - D.1 Structured Parking Supply Inventory 25
 - D.2 Structured Parking Monthly Supply and Pricing 27
 - D.3 Surface Lot Parking 29
 - D.4 Surface Lot Monthly Supply and Pricing 33
 - D.5 On-Street Parking Supply 35
 - D.6 Total Study Area Parking Supply 37
 - D.7 Time of Day Variation in Parking Supply 41
- E. Observed Parking Occupancy 42
 - E.1 Observed Surface Lot Occupancy 43
 - E.2 Observed Structured Parking Occupancy 47
 - E.3 On-Street Parking: Overall Occupancy 52
 - E.4 On-Street Parking: Occupancy by Street 54
 - E.4.1 Commercial St from Maple St to India St 54
 - E.4.2 Exchange St from Congress St to Fore St 55
 - E.4.3 Middle St from Union St to Franklin St 56
 - E.4.4 Spring St from High St to Union St 57
 - E.4.5 Casco St between Cumberland Ave and Congress St 58
 - E.5 On-Street Parking: Occupancy by Block-Face 59
 - E.5.1 Thursday 2-Hour Metered Zone Occupancy by Block-Face 59
 - E.5.2 Saturday 2-hour Metered Zone Occupancy by Block-Face 66
 - E.6 On-Street Parking Duration and Turnover in 2-Hour Metered Zones 72
- F. Summary of Observed Parking Results 75
- G. Seasonal Analysis 79

- G.1 Recurring Regional Demand 79
- G.2 Seasonal Variation in Island Resident and Island Visitor Parking 84
- G.3 Summer Day Visitor Parking Demand Adjustment 88
- G.4 Summer Overnight Visitor Parking Demand 90
- G.5 Adjusted Seasonal Demand 92
- H. Land Use-Based Analysis of Parking Demand 94
- I. Existing Conditions Conclusion 97
- J. Projected Future Parking Supply and Demand 99
 - J.1 Projected Ferry Passenger Parking Demand..... 100
 - J.2 Tourism Considerations 101
 - J.3 Land-Use Development Scenarios Parking Analysis 102
 - J.3.1 Approved but Unoccupied Land Use Developments 103
 - J.3.2 Assumed Future Land Use Developments Likely to Occur 104
 - J.3.3 Development Scenario Summaries 105
 - J.3.4 Population Analysis of Development Scenarios..... 107
 - J.3.5 Employment Analysis of Development Scenarios..... 108
 - J.3.6 Projection of Future Parking Demand..... 110
 - J.4 Conclusion..... 121
- K. Strategy Recommendations and Development 123
 - K.1 Introduction 123
 - K.2 Recommended Strategies 124
 - K.2.1 Explore the Formation of a Non-Profit Transportation Association 124
 - K.2.2 Partner with Transportation Network Companies to Address Specific Parking Challenges..... 125
 - K.2.3 Expand Specific Island Resident Parking Programs..... 125
 - K.2.4 Pilot Test Higher Cost On-Street Parking in High Demand Areas 125
 - K.2.5 Extend On-Street Meter Hours to 8pm City Wide 126
 - K.2.6 Improve Parking Management and Technology 126
 - K.2.7 Change Parking Requirements and Regulations 127
 - K.2.8 Improve Parking Policies in the Context of Land Uses Permits 127
 - K.2.9 Increase Car Sharing Use..... 127
 - K.2.10 Continue Implementation of TDM Recommendations from the 2008 Peninsula Transit Study..... 128
 - K.2.11 Additional Transit Recommendations..... 128
 - K.2.12 Bicycle Infrastructure 128
 - K.2.13 Convert Unrestricted Parking..... 129
 - K.2.14 Marketing and Advertising..... 129

- K.2.15 Additional Data Collection 129
- K.2.16 Construct Additional Structured Public Use Parking Supply 129
- L. Implementation and Funding..... 130
 - L.1 Local Funding Suggestions 130
 - L.2 State Funding 130
 - L.3 Federal Funding..... 130
 - L.3.1 Formula Grant Programs..... 130
 - L.3.2 Competitive Grant Programs 131
 - L.4 Conclusion..... 132
- M. Appendix A: Structured and Surface Lot Parking Inventory with Numbered Maps 131
- N. Appendix B: On-Street Parking Observed Data Maps and Charts 138

A. Executive Summary

Currently in the City of Portland, challenges associated with parking are among the most pressing and frequent issues brought to the City by constituents. This study quantifies the present state of parking supply and demand in a study area consisting of Downtown, the Old Port, the Central Waterfront, and the Eastern Waterfront. With continued development expected in the next 10 years, the study also projects future parking supply and demand given approved and likely development. The study area is shown in Figure A1 below outlined in green, a one quarter mile buffer around the study area is outlined in red.

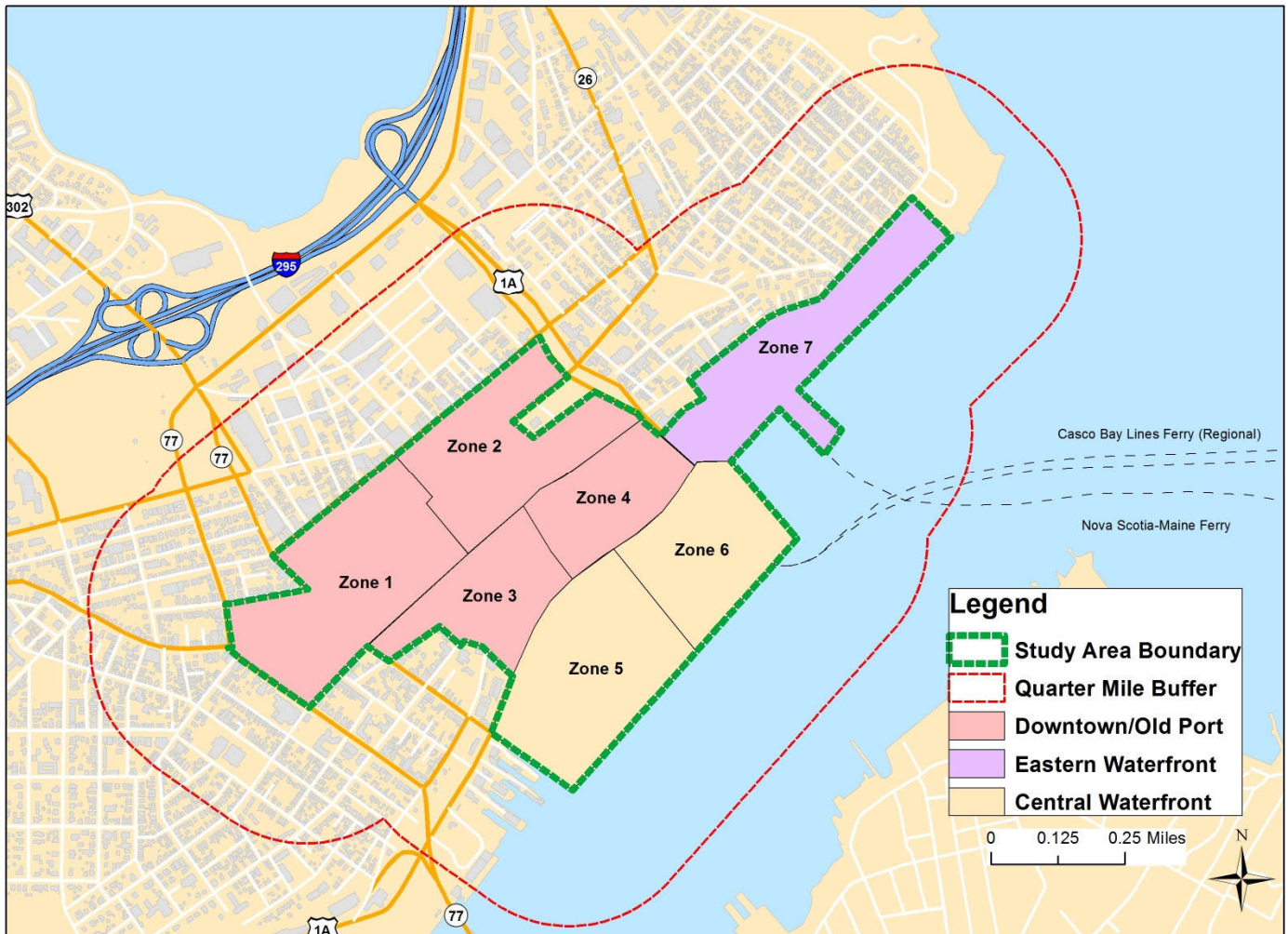


Figure A1: The Project Study Area

The study addresses five tasks: Task 1) Existing Supply and Demand analysis, Task 2) Projected Future Parking Supply and Demand, Task 3) Strategy Recommendations, and Task 4) Implementation and Funding. Each task is described here with a summary of the key results.

Task 1: Existing Supply and Demand Analysis

An inventory of on-street, surface lot, and structured parking supply within the study area was created. The results are shown in Table A1. The total parking capacity in the study area is 15,669 spaces. This represents the maximum available parking capacity mid-day on a weekday. Because some off-street parking operators close during the evenings, overnight, and on weekends; the maximum parking capacity does vary, reaching a low of approximately 12,300 overnight on weekends. A detailed account of the pattern of supply variation by time of day and weekday versus weekend can be found in Chapter D.

Table A1: Study Area Parking Supply Inventory Results

	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area (1-7)	1/4 mi Buffer Area
	1	2	3	4	5	6	7		
Total On-Street	577	553	337	367	131	94	192	2,251	N/A
Total Surface Lot Spaces	1,098	1,079	1,029	438	1,267	482	1,012	6,405	257
Total Garage Spaces	1,597	2,019	480	1,468	150	468	831	7,013	1,050
Total Capacity	3,272	3,651	1,846	2,273	1,548	1,044	2,035	15,669	1,307
Effective Capacity	2,916	3,258	1,645	2,027	1,387	935	1,822	13,990	1,176

In Table A1, the effective parking capacity, 13,990 spaces, is defined as the total of 90 percent of the structured and off-street parking supply and 85 percent of the on-street parking supply. The effective capacity is a concept in parking analysis that refers to the occupancy level at which parking users begin to have difficulty finding open spaces and vehicle circulation to access parking begins to exhibit signs of congestion including queuing. The effective capacity is also thought of as the threshold when a parking supply begins to be perceived by users to be full. If a parking supply reaches total capacity, vehicles must queue or continue circling until occupied space is vacated.

Table A1 also shows that outside of the defined study area boundary within a one quarter mile buffer area, there is up to an additional 1,176 spaces in effective parking capacity found in surface lots and structured parking that offer general use public parking and may be used by travelers destined for the study area. The supply outside of the study area is shared with land use outside of the study area. The parking demand generated by land use outside of the study area was not calculated during this study, therefore the exact amount of unoccupied parking available within the quarter mile buffer area for use by travelers to the study area is not known. It is estimated however, that several hundred spaces are needed in the quarter mile buffer area to meet the demand of employee monthly parking within the study area. More detail on the estimated supply and demand for monthly parking is presented in Chapter D.

Task 1 included an estimation of current parking demand. An observed parking occupancy survey was conducted on one Thursday and one Saturday in December 2016. A sample of structured, surface lot, and on-street parking facilities were observed through manual data collection and voluntary reporting by structured parking operators. Because the observations were made during Winter, the observed parking occupancy results were adjusted for the peak Summer season using supplementary data on seasonal variation in ferry passenger demand and data on seasonal tourism from the Maine Office of Tourism.

Combining the observed occupancy results of the parking survey and adjusting for additional peak season demand using supplementary data, the peak season weekday parking demand by time of day is shown below in Figure A2. The peak occurs at 12pm when parking demand reaches 14,280 vehicles. The estimated peak weekday demand at 12pm is 290 vehicles above the effective parking capacity of the study area at that time.

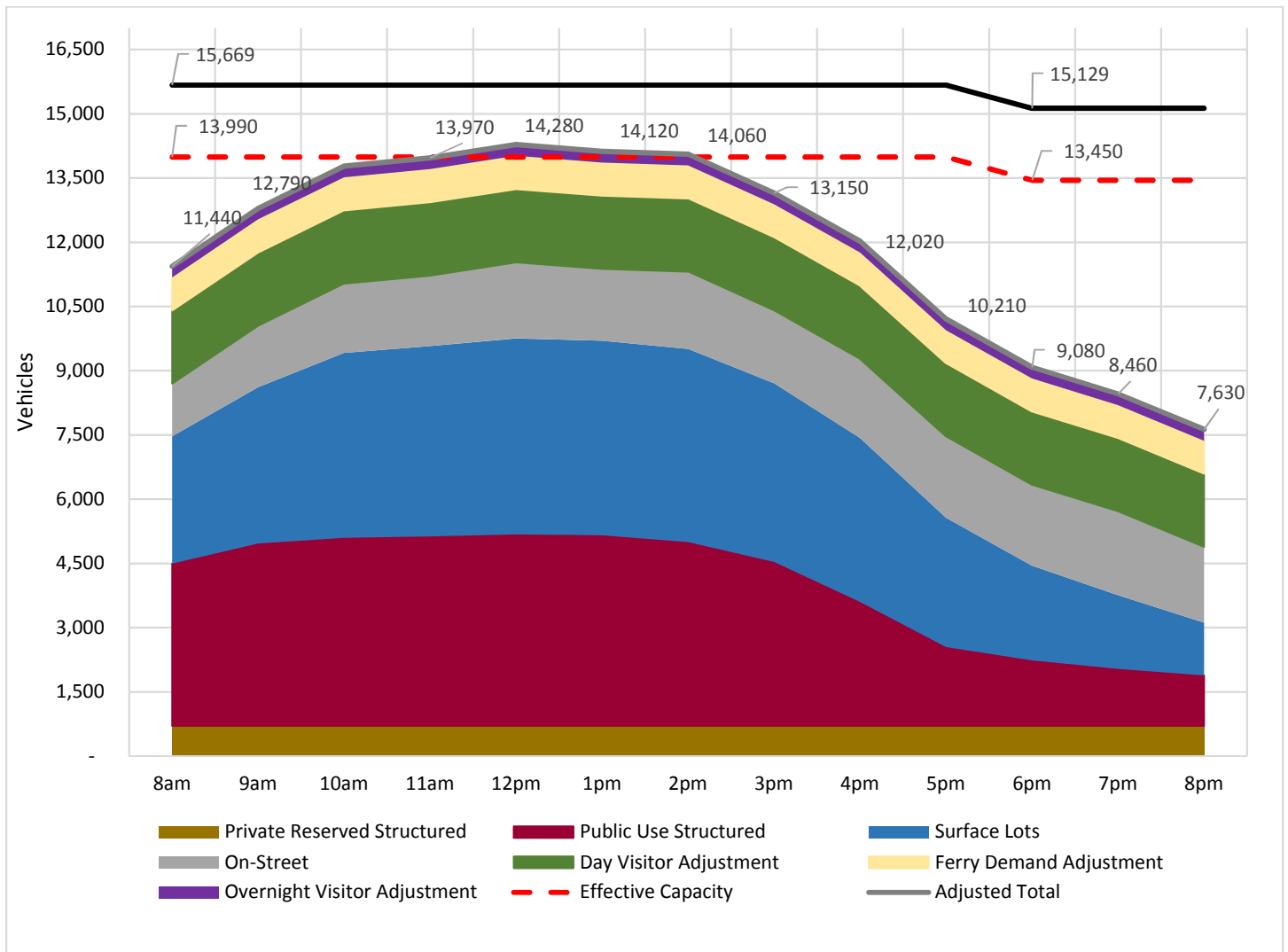


Figure A2: Estimated Peak Season Weekday Parking Demand by Time of Day

The estimated peak season Saturday parking demand result is shown below in Figure A3. The peak hour for parking demand occurs at 2pm when an estimated 9,320 vehicles park in the study area. The estimated peak Saturday demand at 2pm is approximately 3,840 vehicles below the effective parking capacity of the study area of 13,160 at that time.

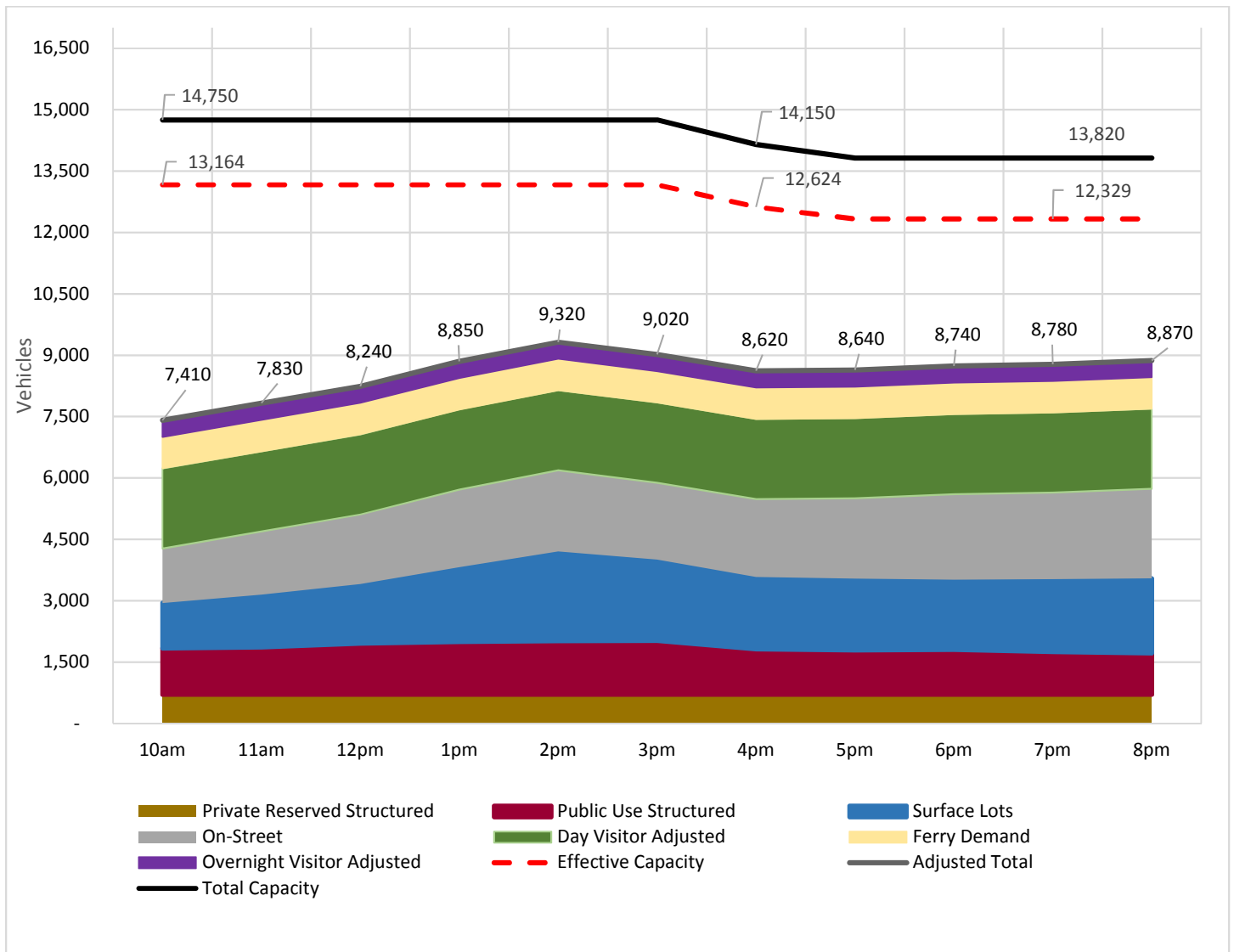


Figure A3: Estimated Peak Season Saturday Parking Demand by Time of Day

The results of the on-street parking occupancy survey individually show that during the weekday evening and on Saturday after 1pm, on-street parking is likely at or over effective capacity in the study area. Effective capacity for on-street parking is defined here as 85 percent of on-street spaces occupied. The implications of this finding are that at times when there is parking availability in surface lots and structured parking, such as weekday evenings and on Saturday, on-street parking is highly occupied and difficult for users to find. Findings on Portland’s on-street and off-street parking pricing relative to peer cities are included in Chapter D.

Figures A4 and A5 show the observed Thursday and Saturday on-street parking occupancies for the overall on-street survey sample. The Thursday results show an overall occupancy above 85 percent at 7pm only, however individual streets varied and some high demand streets such as Commercial St, Middle St, and Exchange St exhibited higher occupancy rates than the overall sample. A detailed account of the on-street parking occupancy survey results by street and block face appears in Chapter E of this report.

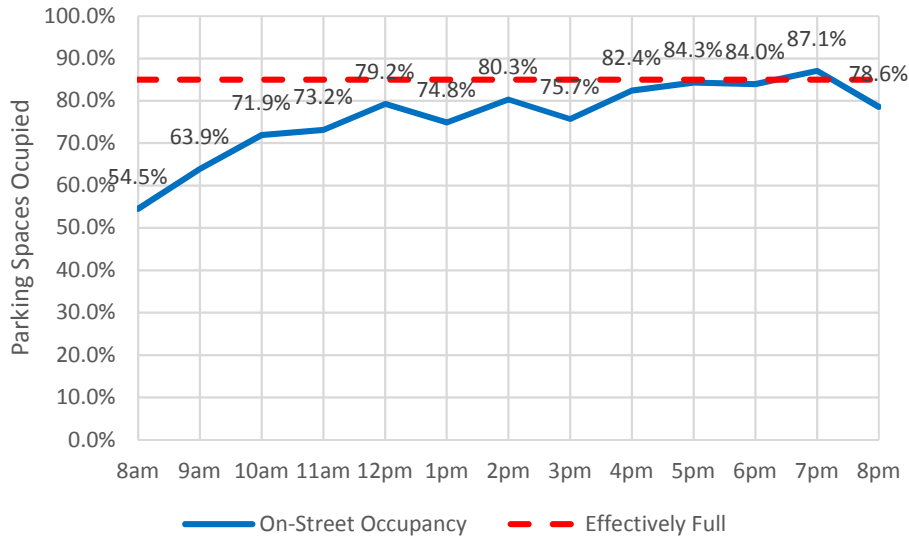


Figure A4: Thursday Overall On-Street Parking Occupancy

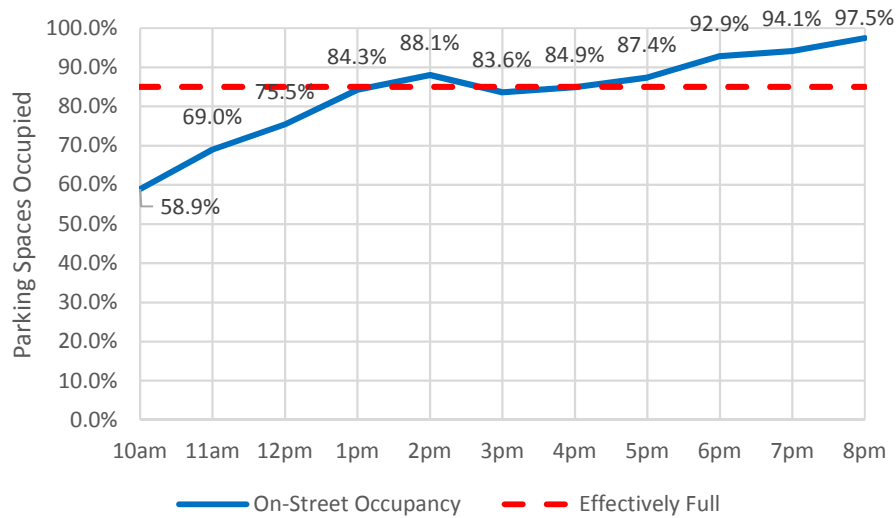


Figure A5: Saturday Overall On-Street Parking Occupancy

A second method was used to estimate overall parking demand in the study area based on Land-Use. Parking generation factors from the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI) were used to create estimates of weekday and weekend parking demand based on land-use data provided by the City’s tax assessor. The results are shown in Figures A6 and A7 below. Weekday results show a peak parking demand at 2pm of 14,470 vehicles, which is 480 vehicles more than the effective capacity at that time. Weekend results show two peaks, a recurring parking demand peak between 12pm and 1pm of 9,390 vehicles, and an evening peak which would occur during a sold out arena event of 10,350 vehicles.

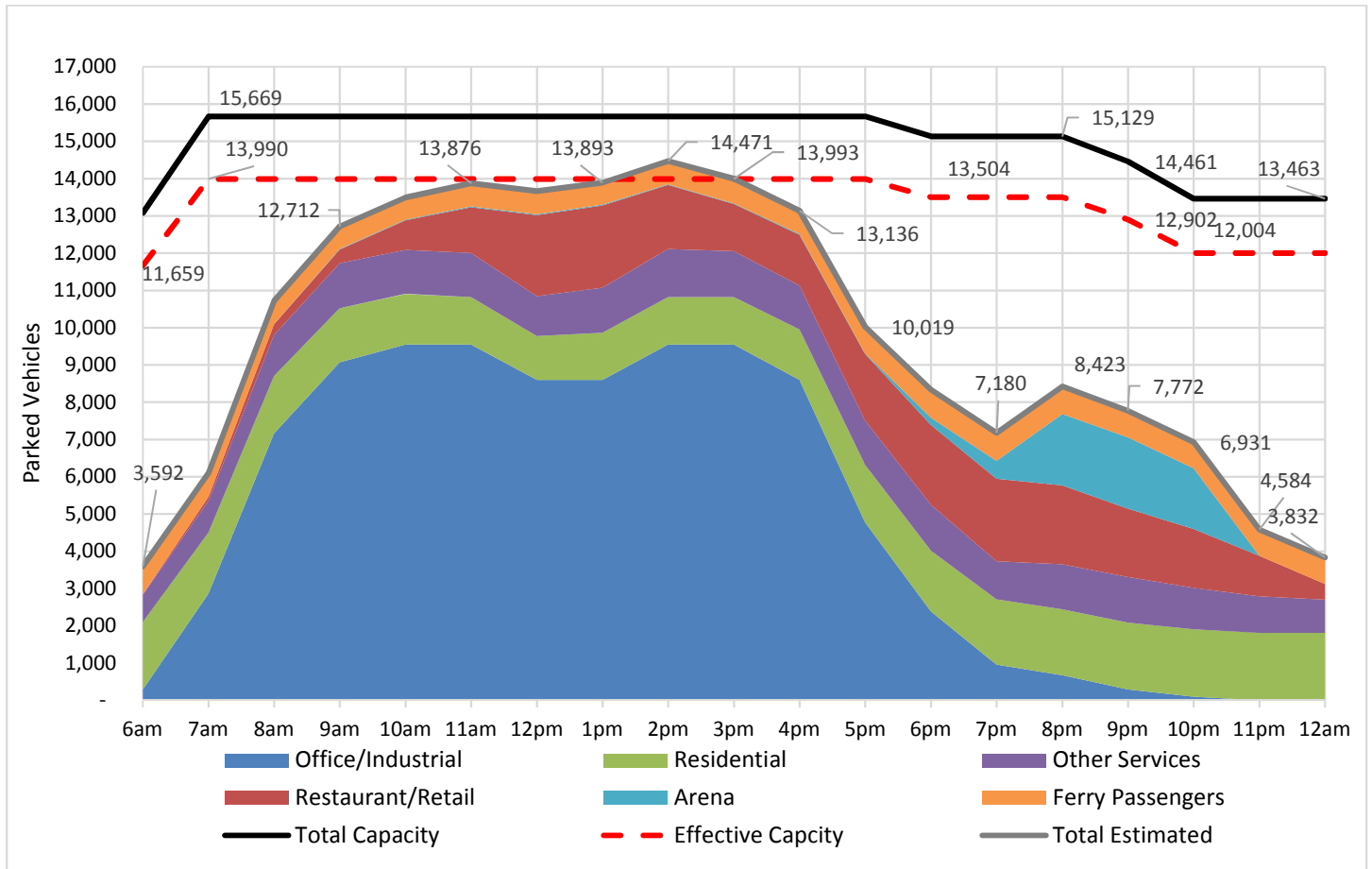


Figure A6: Land-Use Generated Parking Demand Estimate for a Weekday

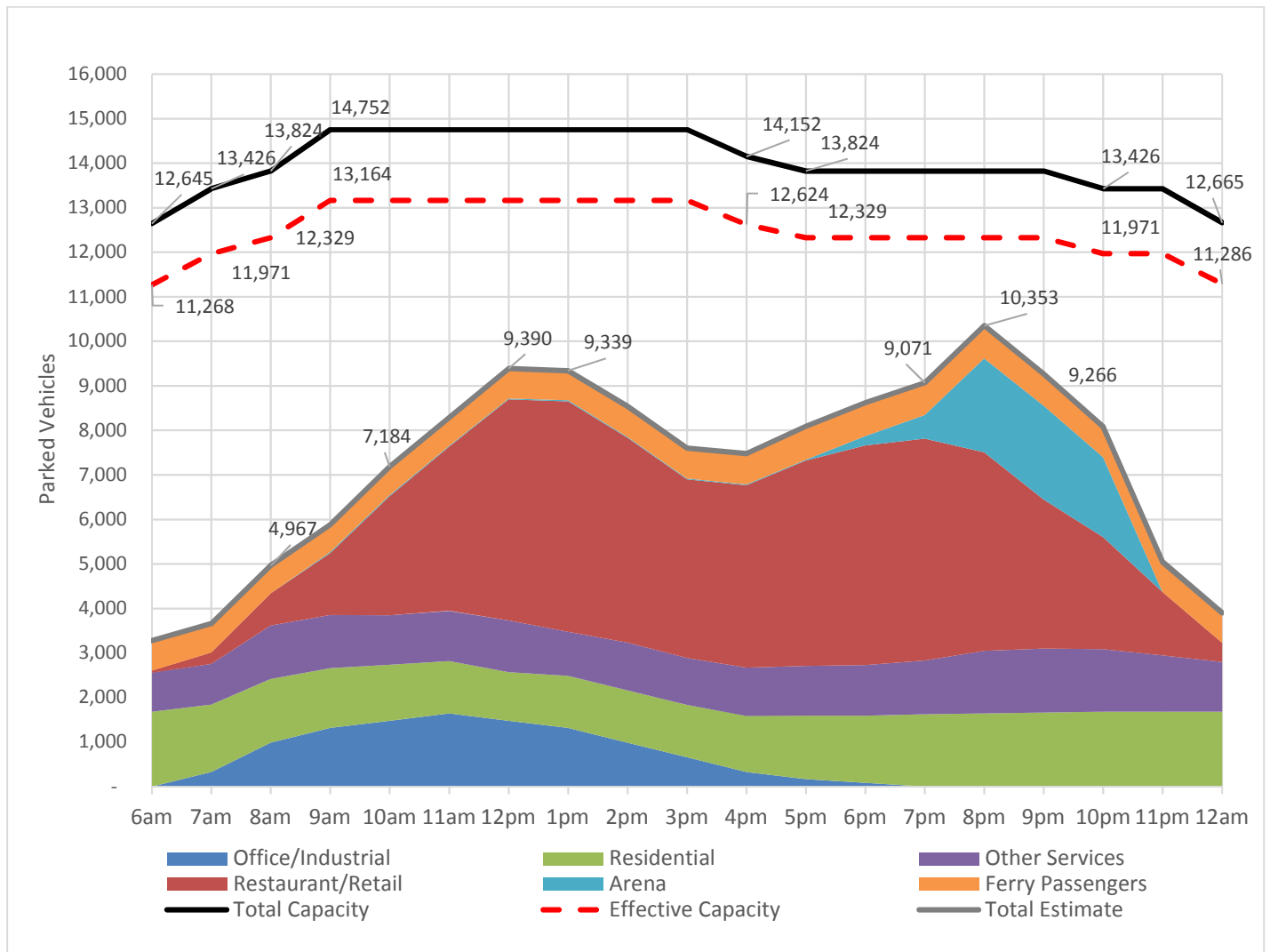


Figure A7: Land-Use Generated Parking Demand Estimate for a Weekend Day

A summary of the overall parking supply and demand findings are presented in Tables A2 and A3. The conclusion is that at present, during the peak summer season on weekdays in the afternoon, parking demand in the study area is likely between 290 and 480 vehicles beyond the effective parking capacity of supply within the study area. On Saturday's during the peak season, parking demand is well below effective capacity overall, yet on-street parking is over capacity after 1pm as was shown in Figure A5.

Table A2: Weekday Existing Parking Demand Results Summary

Weekday Peak								
Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Observed Occupancy Dec. 2016	12pm	15,670	13,990	11,540	2,450	1,680	4,130	-
Observed Occupancy Dec. 2016 + Peak Season Adjustments	12pm	15,670	13,990	14,280	-290	1,390	1,390	290
ITE/ULI Land-Use Calculated Demand (50th percentile factors)	2pm	15,670	13,990	14,470	-480	1,200	1,200	480

Table A3: Saturday Existing Parking Demand Results Summary

Saturday Peak								
Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Observed Occupancy Dec. 2016	2pm	14,750	13,160	6,190	6,970	1,590	8,560	-
Observed Occupancy Dec. 2016 + Peak Season Adjustments	2pm	14,750	13,160	9,320	3,840	1,590	5,430	-
ITE/ULI Land-Use Calculated Demand (50th percentile factors)	12pm	14,750	13,160	9,390	3,770	1,590	5,360	-
ITE/ULI Land-Use Calculated Demand (50th percentile factors) with 8pm Arena Event	8pm	13,820	12,330	10,350	1,980	1,490	3,470	-

Task 2: Projected Future Parking Demand

Future parking supply and demand 10 years from now is projected considering ferry passenger growth, tourism trends to the Casco Bay Region, and three land use development scenarios that include newly build parking supply. Detailed information on the methodology and development projects included in the projections appear in Chapter J. Figure A8 is a map of included development projects in the analysis.

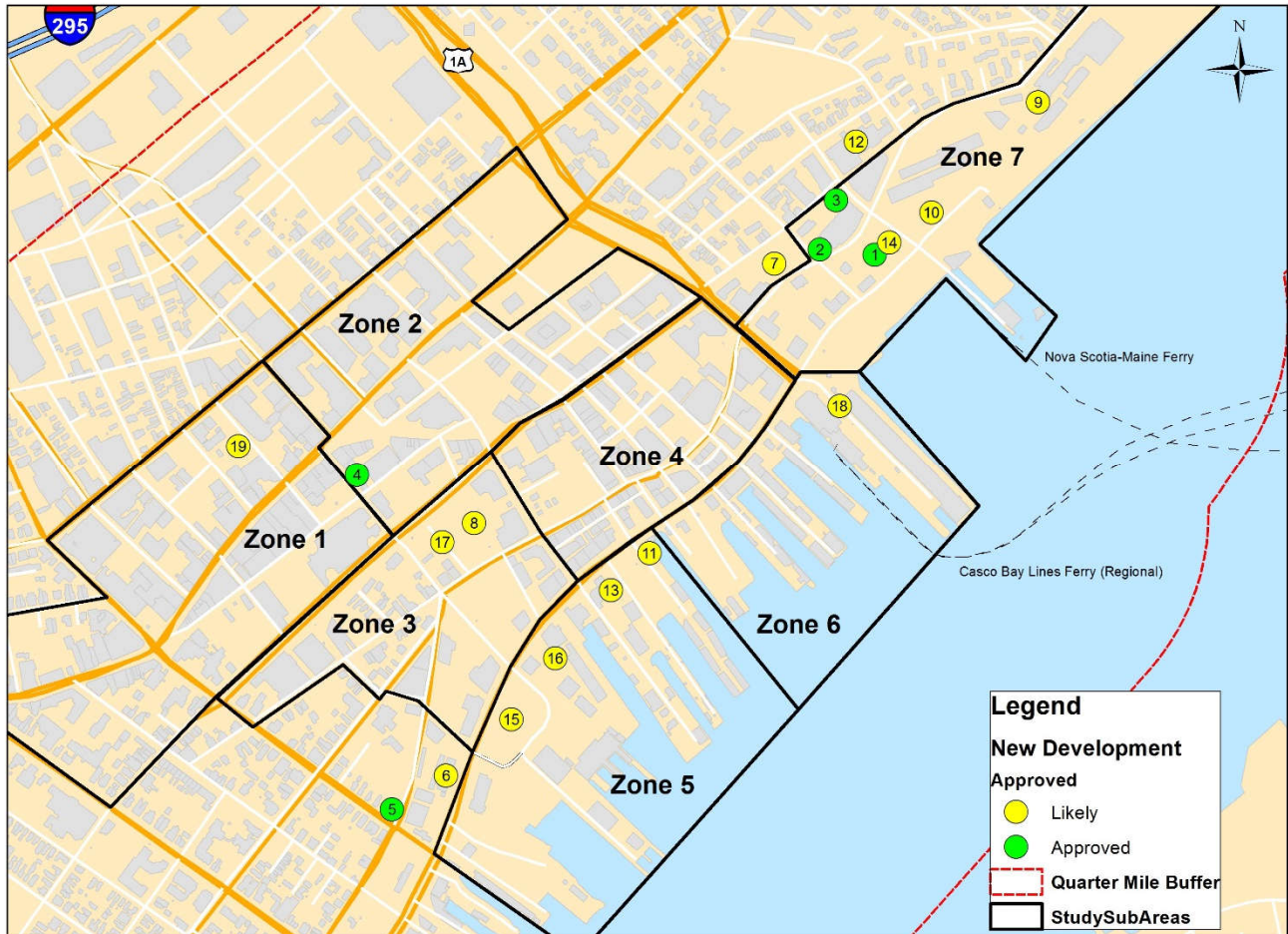


Figure A8: Future Development Projects Included in the 10-year Future Parking Demand Analysis

The parking projections were created by adding the projected land use development to existing land use and applying the same land-use based parking generation methodology as the existing conditions analysis. Three development scenarios were considered, a full build-out, a scenario including all approved projects plus 75 percent of likely projects, and a scenario including all approved projects plus 50 percent of likely projects. For the scaled down scenarios, newly built parking was scaled down along with expected development. The population and employment implications of the three scenarios in comparison to Portland’s comprehensive plan are discussed in Chapter J.

Tables A4 and A5 summarize the projected parking supply and demand of the future scenarios. On weekdays during the peak season, the full build-out scenario is projected to result in parking demand that is 940 vehicles more than the projected effective parking capacity of the study area. The approved plus 75 percent of likely projects scenario is expected to result in parking demand that is 900 vehicles more than projected effective capacity, and the approved plus 50 percent of likely projects scenario is expected to result in a parking demand that is 840 vehicles more than projected

effective parking capacity. On Saturdays during the peak season, all development scenarios are projected to result in parking demand that is still below the effective parking capacity of the study area.

Table A4: Weekday Peak Season and Peak Hour Parking Supply and Demand for the Combined Existing and 10-year Future Scenarios

Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Existing + Full Build-Out	2pm	18,870	16,870	17,810	-940	1,060	1,060	940
Existing + (Approved + 75% Likely)	2pm	18,100	16,170	17,070	-900	1,030	1,030	900
Existing + (Approved + 50% Likely)	2pm	17,330	15,480	16,320	-840	1,010	1,010	840

Table A5: Saturday Peak Season and Peak Hour Parking Supply and Demand for the Combined Existing and 10-year Future Scenarios

Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Existing + Full Build-Out	8pm	17,020	15,320	13,360	1,960	1,700	3,660	-
Existing + (Approved + 75% Likely)	8pm	16,250	14,510	12,830	1,680	1,740	3,420	-
Existing + (Approved + 50% Likely)	8pm	15,480	13,820	12,310	1,510	1,660	3,170	-

Figures A9 and A10 show the future parking demand projections graphically.

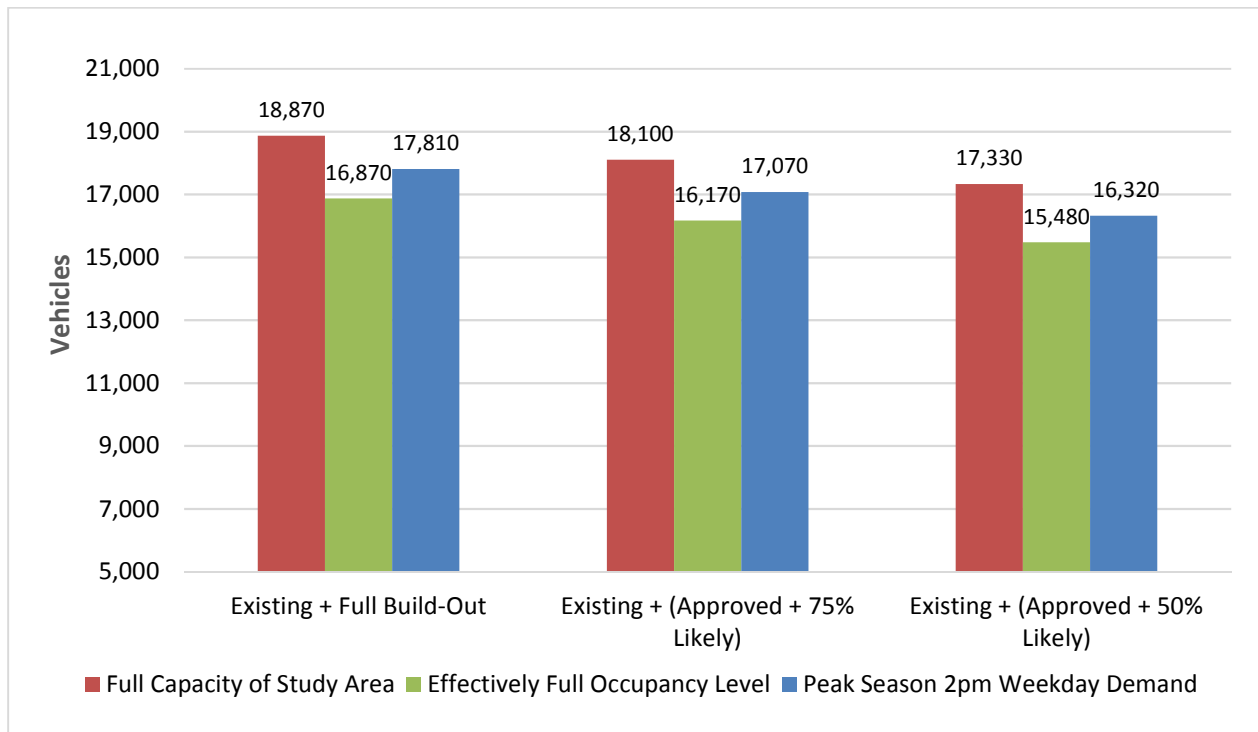


Figure A9: Weekday Peak Season and Peak Hour Parking Supply and Demand for the Combined Existing and 10-year Future Scenarios

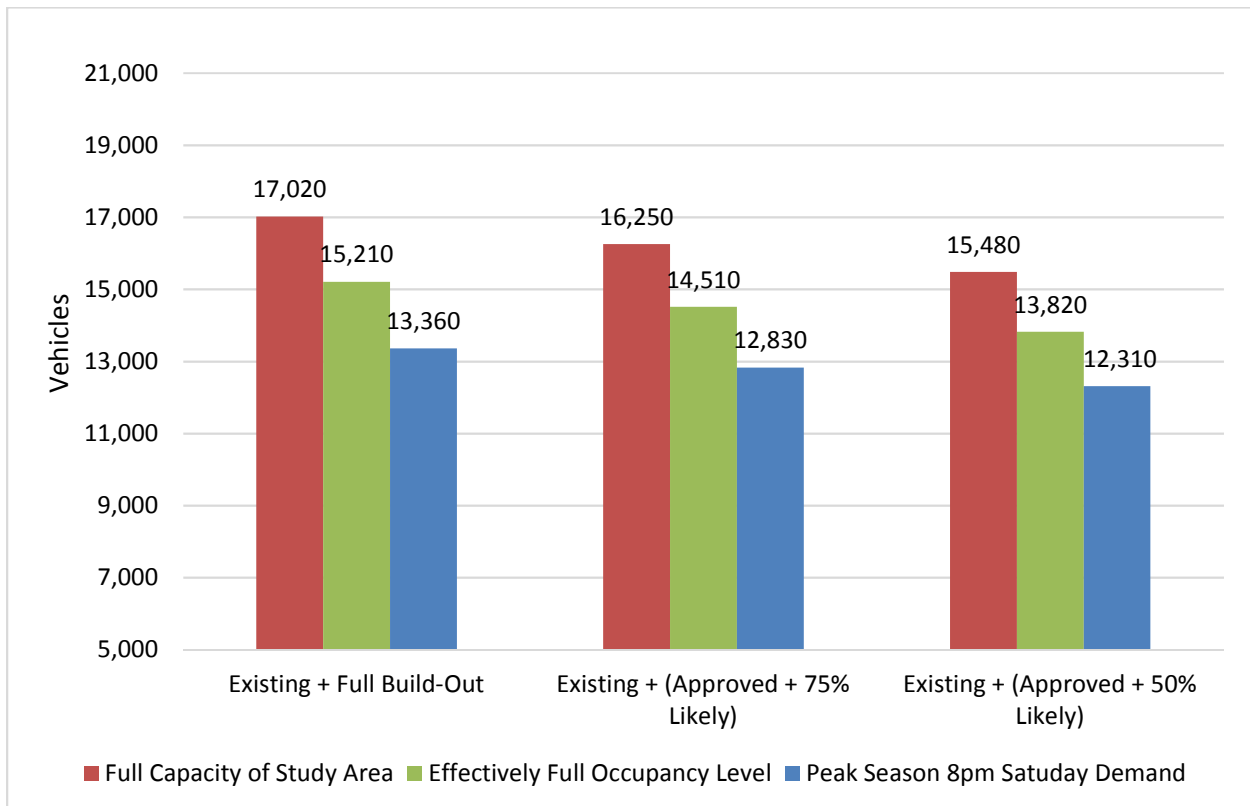


Figure A10: Saturday Peak Season and Peak Hour Parking Supply and Demand for the Combined Existing and 10-year Future Scenarios

Based on the results of the future parking supply and demand projections, we recommend a planning goal of reducing parking demand the study area by a range of 700-750 vehicles within a 10-year period. Parking demand should be managed to be at or just under the weekday peak hour effective capacity of parking supply inside of the study area, which is projected to be in a range between approximately 15,480 to 16,870 parking spaces depending on the future development scenario.

Table A6 summarizes the derivation of the recommended parking demand reduction.

Table A6: Recommended 10-year Parking Demand Reduction

Scenario	Study Area Peak Season Parking Demand Deficit Relative to Effective Capacity (in vehicles during the peak hour)	
	Weekday	Saturday
Existing Condition Observed + Adjusted	290	0
Existing Condition Land-Used Based	480	0
Difference Between Existing Conditions Methods	190	0
#1 Existing Condition Land-Used Based + 10-year Full Build-Out	940	0
#2 Existing Condition Land-Used Based + 10-year Approved & 75% Likely Development	900	0
#3 Existing Condition Land-Used Based + 10-year Approved & 50% Likely Development	840	0
#1- (Difference Between Existing Conditions Methods)	750	0
#2- (Difference Between Existing Conditions Methods)	710	0
#3- (Difference Between Existing Conditions Methods)	650	0
Recommended Planning Range Goal for 10- year Parking Demand Reduction	700-750	0

Task 3: Strategy Recommendations & Task 4 Implementation and Funding

Reducing demand for parking does not mean reducing trips to the study area. A set of recommendations were developed to use technology, emerging mobility on demand services, and enhancement of transit and bicycle infrastructure to reduce reliance on the personal vehicle for transportation to the study area. The recommendations also aim to provide options for better management of the City's existing parking resources, as well as an enhanced user experience. The specific parking challenges of employers, island residents, and low-wage earners are addressed in the recommendations and explained in greater detail in Chapter K.

Local, state, and federal funding assistance for the parking demand reduction and management recommendations are detailed in Chapter J. New sources of local funding include membership dues to a new transportation association, a development impact fee, and a special purpose parking meter rate increase on high demand streets to fund targeted programs. State funding was not found to be a likely source of funding with the exception of a possible contribution toward a local match to leverage federal funding. Federal funding assistance is possible for a number of the recommendations, and a discussion is included in Chapter J on relevant federal formula grants and competitive grants for which the City of Portland or another eligible agency in the study area could create a proposal.

Table A7 lists the parking demand reduction and management recommendations along with a suggested timeframe of implementation and suggested funding sources.

Table A7: Strategy Recommendations and Suggested Funding Sources

Strategy Recommendations	Suggested Implementation Timeframe	Suggested Funding Sources
Explore the Formation of a Non-Profit Transportation Association	1-2 years	Private membership dues, Federal Formula Grant, City Funds
Partner with Transportation Network Companies to Address Specific Parking Challenges for Constituents (employers, island residents, low-wage earners)	1-3 years	User fees, City Funds, Development Impact Fee, Special Purpose Meter Rate Increase, Federal Formula or Competitive Grant
Expand Specific Island Resident Parking Programs	1-2 years	City Funds
Pilot Test Higher Cost On-Street Parking in High Demand Areas	1-2 years	City Funds
Extend On-Street Meter Hours to 8pm City Wide	2 years	City Funds
Improve Parking Management and Technology	1 year -ongoing	City Funds, Federal Formula or Competitive Grant
Change Parking Requirements and Regulations	1 year	City Funds
Improve Parking Policies in the Context of Land Uses Permits	1 year	City Funds
Increase Car Sharing Use	1 year -ongoing	City Funds, Federal Formula or Competitive Grant
Continue Implementation of TDM Recommendations from the 2008 Peninsula Transit Study	1-5 years	City Funds, Development Impact Fee, Federal Formula or Competitive Grant
Additional Transit Recommendations	1-5 years	City Funds, Development Impact Fee, Federal Formula or Competitive Grant
Bicycle Infrastructure	1 year -ongoing	City Funds, Development Impact Fee, Federal Formula or Competitive Grant
Convert Unrestricted Parking	3-5 years	City Funds
Marketing and Advertising	1 year-ongoing	City Funds, Private/nonprofit funds/partnerships
Additional Data Collection	2 years-ongoing	City Funds, Private Donations, Federal Formula Grant
Construct New Structured Parking. Consider Requiring a Repurposeable Design	Depending on development, 3-7 years	Private Financing

B. Existing Supply and Demand Analysis

B.1 Introduction

As Task 1 of The City of Portland Parking Study for the Eastern Waterfront & Old Port, Fort Hill Infrastructure conducted an existing conditions analysis. Task 1 objectives included:

- Inventorying the existing parking supply within the study area,
- Collecting parking occupancy data on one weekday and one weekend day during the winter,
- Adjusting the collected parking data to represent the peak season,
- Conducting interviews with parking stakeholders,
- Identifying key parking issues related to employees of the study area, island residents, visitors, and study area residents,
- Identify subareas within the study area that may be experiencing more parking challenges than others.

B.2 The Study Area

The study area included what is generally considered Downtown Portland south of Cumberland Avenue encompassing some of the Arts District, all of the Old Port, the Waterfront (referred to here as the Central Waterfront), and the Eastern Waterfront. Figure 1 below shows the study area boundary. A one quarter mile buffer area boundary is shown outside of the study area.

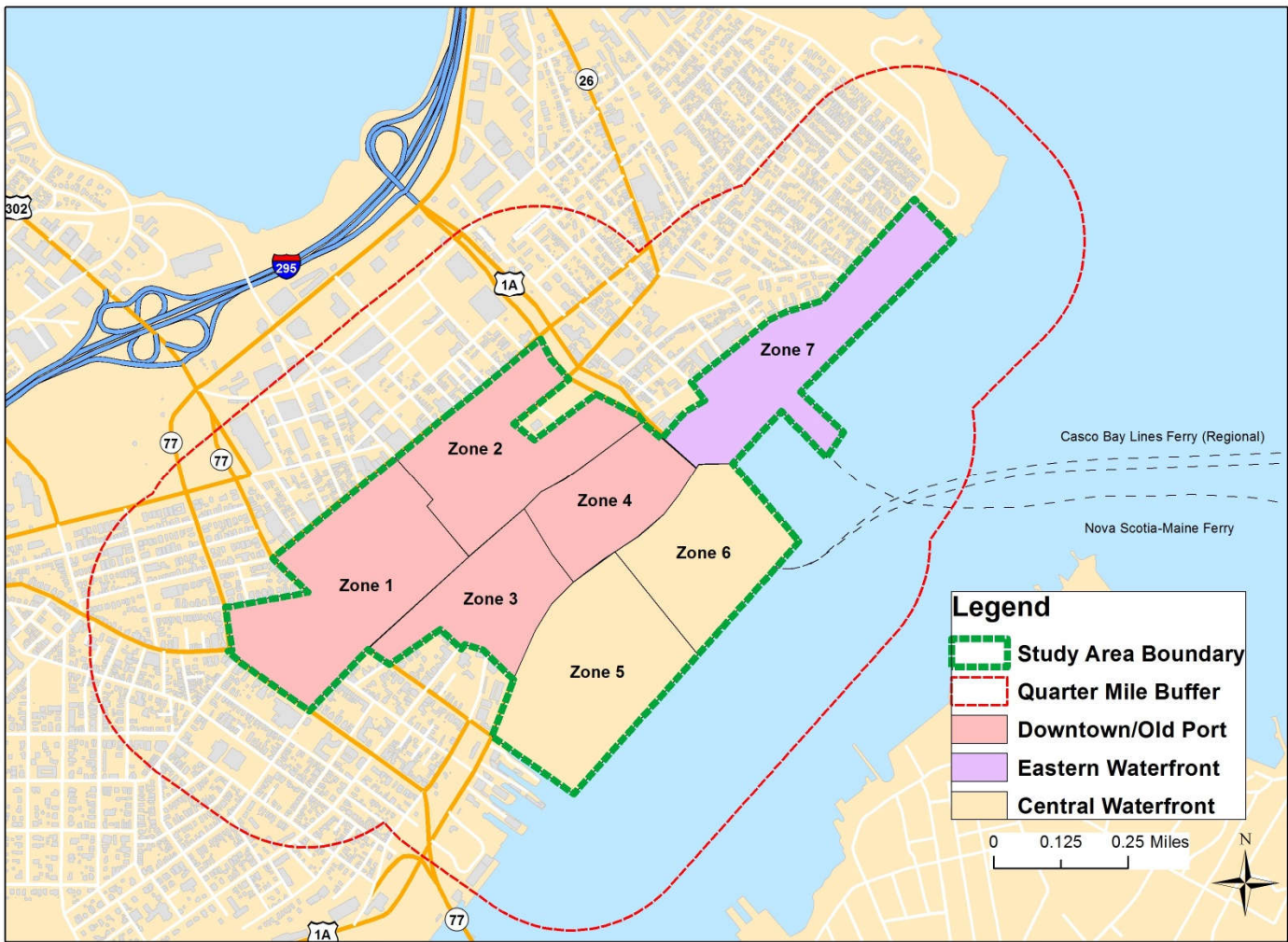


Figure 1: The Study Area Boundary and Subareas

To allow for a more localized analysis in some sections of this report, the study area was divided into 7 subarea zones. Table 1 describes the streets demarcating the subarea zones.

Table 1: Description of Subarea Zones

Zone	Location	Area (acres)	Dividing Streets Within the Study Area
1	Downtown/Old Port	63.7	North of Spring St, West of Preble St, West of Center St.
2	Downtown/Old Port	49.8	North of Spring St/Middle St, East of Center St, East of Preble St.
3	Downtown/Old Port	32.7	South of Spring St, West of Union St, North of Commercial St.
4	Downtown/Old Port	30.3	South of Spring St/Middle St, East of Union St, North of Commercial St., West of Franklin St.
5	Central Waterfront	58.5	South of Commercial St, Hobson's Wharf to Long Wharf.
6	Central Waterfront	40.5	South of Commercial St, Long Wharf to Maine State Pier.
7	Eastern Waterfront	52.6	East of Franklin St, Bounded by Fore St and part of Middle St to the North.
Total		328.1	

B.3 Employment

Employment growth in the Portland region and study area is considered here briefly to give a sense of the economic climate in which this parking study occurred. Between 2002 and 2014, a period that included The Great Recession of 2007 to 2009, employment growth was modest in the study area with a compound annual growth rate (CAGR) of 0.7% annually. During this 12-year period, employment growth in the study area slightly outpaced the City of Portland the Portland Metropolitan Statistical Area (MSA)¹. Between 2010 and 2014, post-recession, employment grew in the study area at a faster CAGR of 2.2%. The rate of employment growth in the study area was, however, lower than the national employment growth rate during the same period as shown in Table 2. The Peninsula refers to the area south east of I-295.

Table 2: Recent Employment Growth in the Study Area and Regionally

	Study Area Jobs	Peninsula Jobs	City of Portland Jobs	Portland-South Portland-Biddeford MSA Jobs	U.S. Jobs
2002	15,721	33,987	63,912	235,145	114,115,409
2010	15,594	34,689	65,645	240,494	123,344,995
2014	17,149	36,607	67,648	247,487	135,035,443
Change '02-'14	9.1%	7.7%	5.8%	5.2%	18.3%
CAGR '02-'14	0.7%	0.6%	0.5%	0.4%	1.4%
CAGR '10-'14	2.2%	1.9%	1.4%	1.3%	4.3%

Source: Longitudinal Employer-Household Dynamics, U.S. Census Bureau.

¹ The Portland, ME MSA includes Cumberland, Sagadahoc, and York Counties

The employment distribution among the subarea zones is shown in Table 3. Subarea Zone 4, in the Old Port, contains the most jobs, over 25% of the total study area employment, and has the highest employment density of the subarea zones at 144 jobs per acre. The subarea zones on the Central and Eastern Waterfronts currently contain fewer jobs, however as a subsequent chapter will show, the Waterfront zones are expected to see significant employment growth in the next 10 years.

Table 3: Subarea Zone Employment

Location	Zone	Area (acres)	Primary Jobs 2014	Non-Primary Jobs 2014	All Jobs 2014	Percentage of All Jobs 2014	Employment Density Jobs/Acre
Downtown/ Old Port	1	63.7	3,722	349	4,071	23.7%	63.9
Downtown/ Old Port	2	49.8	3,764	219	3,983	23.2%	80.0
Downtown/ Old Port	3	32.7	2,045	91	2,136	12.5%	65.3
Downtown/ Old Port	4	30.3	4,088	274	4,362	25.4%	144.0
Central Waterfront	5	58.5	750	38	788	4.6%	13.5
Central Waterfront	6	40.5	948	89	1,037	6.0%	25.6
Eastern Waterfront	7	52.6	740	32	772	4.5%	14.7
Study Area		328.1	16,057	1,092	17,149	100.0%	52.3

Source: Longitudinal Employer-Household Dynamics, U.S. Census Bureau. Non-Primary Jobs are jobs for which there is more than one worker.

A majority of workers employed in the study area, 70%, do not live within the city limits of the City of Portland. Just under 2% of study area workers currently live within the study area boundary. Figure 2 shows the home origins of workers in the study area as of 2014.

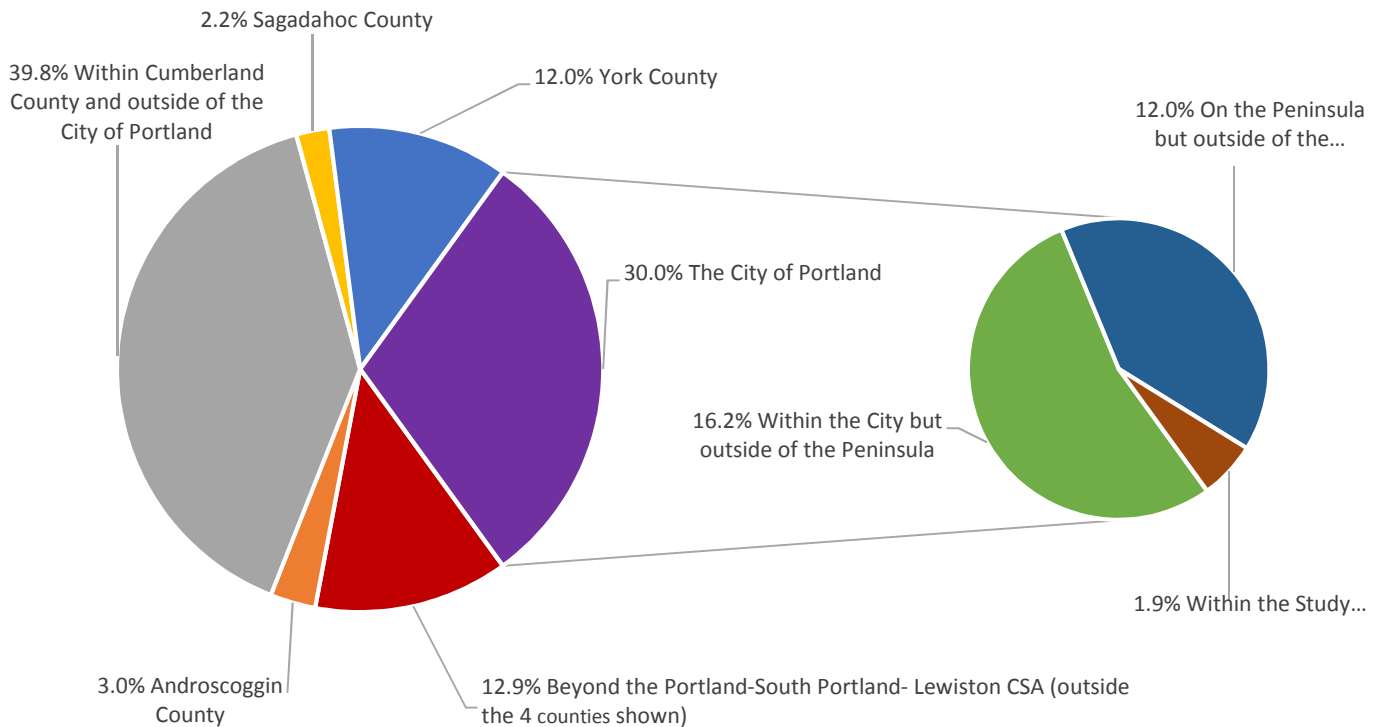


Figure 2: Study Area Worker Home Origins in 2014

Source: Longitudinal Employer-Household Dynamics, U.S. Census Bureau.

In Table 4, the home zip codes of study area workers who live within the City of Portland give a sense that Portland City residents who work within the study area are distributed roughly evenly among the City's zip codes, with the exception of zip codes covering the islands.

Table 4: Study Area Workers from City of Portland Zip Codes

Home Origin of Worker	Study Area Jobs	Percent of All Study Area Jobs
04101 Downtown-East End-Bayside (includes study area)	1,970	12%
04102 West End-Stroudwater	1,400	9%
04103 North Deering-Deering Center	1,709	11%
04108 Peaks Island	61	<0.1%
04109 Great Diamond, Little Diamond Island	5	<0.1%

Source: 2014 Longitudinal Employer–Household Dynamics (LEHD) data. U.S. Census Bureau.

Of the workers who live outside of the City of Portland, Table 5 shows the top ten zip codes from which workers commute. Any mobility solution for commuting workers to the study area should take into consideration where more workers tend to begin their commute.

Table 5: The Top Ten Zip Codes of Study Area Workers Outside of the City of Portland

Home Origin of Worker	Study Area Jobs	Percent of All Study Area Jobs
04106 South Portland	1,347	8%
04092 Westbrook Area	686	4%
04074 Scarborough Area	674	4%
04105 Falmouth Area	547	3%
04107 Cape Elizabeth Area	525	3%
04062 Windham Area	440	3%
04038 Gorham Area	424	2%
04072 Saco Area	411	2%
04096 Yarmouth Area	328	2%
04021 Cumberland Center Area	317	2%

Source: 2014 Longitudinal Employer–Household Dynamics (LEHD) data. U.S. Census Bureau.

Figure 3 maps the zip codes shown in Table 5. The zip code boundaries are populated with dots representing workers to give a visual sense of relative worker density, although the dots are distributed evenly in each zip code boundary and not to actual worker home locations. South Portland, Zip Code 04106, and Westbrook, Zip Code 04092, stand out as particularly important commuter markets for the study area located outside of the City of Portland due to their relatively high density of study area worker homes.

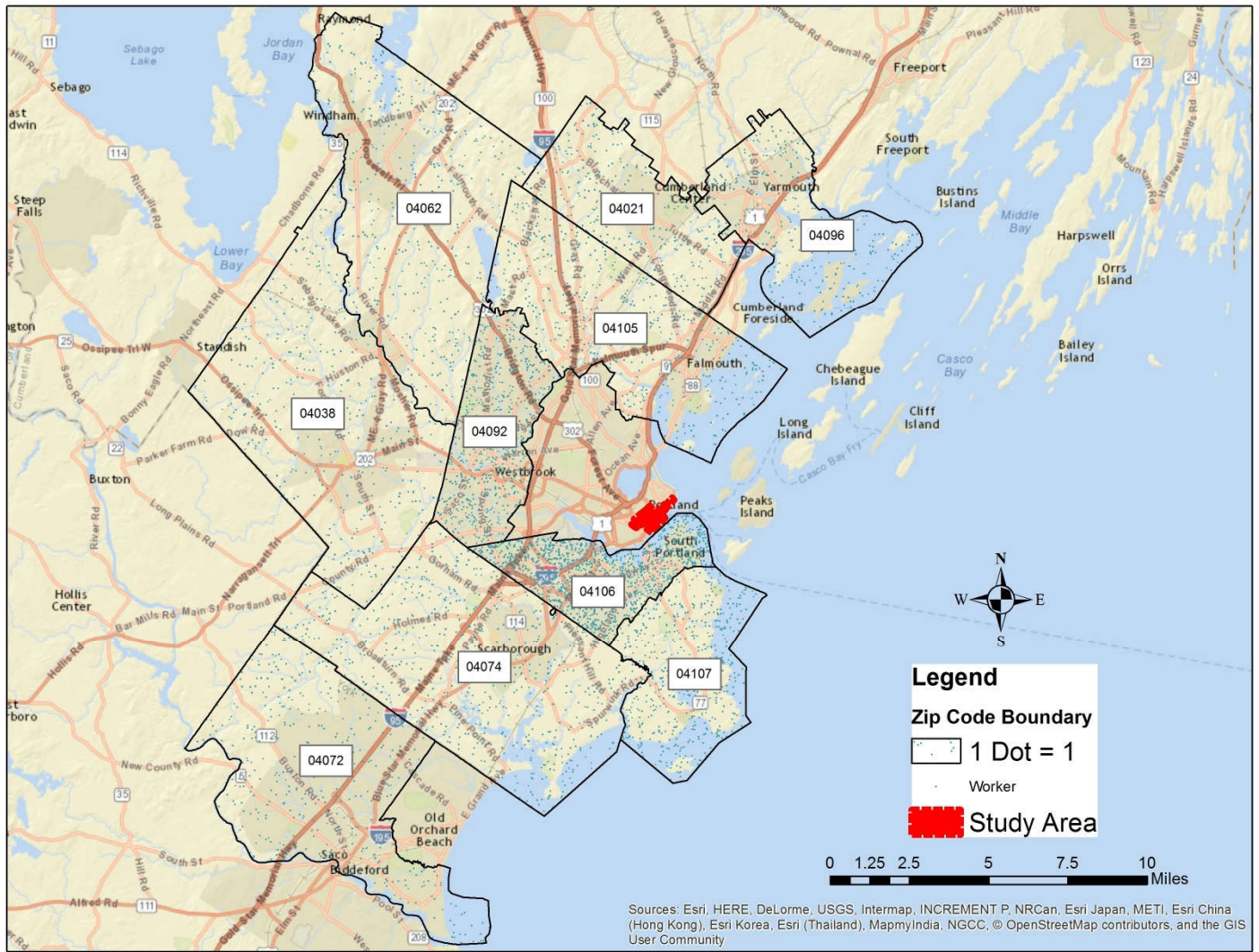


Figure 3: Study Area Workers by Zip Code Outside the City of Portland

B.4 Population

As shown in Table 6, according to the 2015 American Community Survey 5-year sample, Census Tract 3 in Cumberland County, which has a boundary that closely matches the study area, has a total resident population of 2,600. Since 2000, the total population in the study area has decreased, evidently due to a significant drop in the population living in group quarters, which includes group homes, institutions, shelters, etc. However, the number of occupied households in the study area and the population living in occupied households has remained relatively constant in the last 15 years, as shown in Table 7. In contrast, the Portland MSA gained population at a rate of nearly 7 percent during the same period.

Table 6: Total Population in the Study Area and Regionally

Year	Study Area	Peninsula	City of Portland	Portland-South Portland-Biddeford MSA
2000	3,125	23,168	64,249	487,568
2015	2,589	23,248	66,490	520,893
Change '00-'15	-17%	0.3%	3.5%	6.8%

Sources: 2000 Census, 2015 ACS 5-Year Estimate. U.S. Census Bureau.

Table 7: Study Area Population in Occupied Households

Year	Occupied Households	Population in Occupied Households
2000	1,709	2,434
2015	1,729	2,441
Change '00-'15	1.2%	0.3%

Sources: 2000 Census, 2010 Census, 2015 ACS 5-Year Estimate. U.S. Census Bureau.

The resident population within the study area is shown in Table 8. It shows that existing population within the study area is heavily concentrated in Subarea Zone 1 with approximately 63% of the population. Subarea Zones 5, 6, and 7, along the Central and Eastern Waterfronts currently have the fewest residents, however a subsequent chapter will show that these zones are expected to see significant residential development in the near future.

Table 8: Subarea Zone Population

Location	Zone	Area (acres)	Pop%	HH %
Downtown/Old Port	1	63.7	63%	61%
Downtown/Old Port	2	49.8	8%	9%
Downtown/Old Port	3	32.7	10%	9%
Downtown/Old Port	4	30.3	8%	8%
Central Waterfront	5	58.5	4%	5%
Central Waterfront	6	40.5	0%	0%
Eastern Waterfront	7	52.6	7%	8%
Study Area		328.1	100%	100%

Sources: 2010 Census. U.S. Census Bureau. Census Block Level Data.

B.5 Work Commute Travel Mode

To get a sense of commuting trends in the Portland region, journey to work data from the 2000 census and 2015 ACS 5-year estimate were compared. The data describes how workers who live in a defined area commute to work collectively to all jobs. It is not possible to exclusively isolate how those who work in the study area commute, as that information would need to be extracted from a regional travel demand model or collected through a travel survey.

The data shows significantly lower shares of drive alone commuting for workers who live in the study area or on the Peninsula as compared to the City and MSA. The share of workers who walk to work is very high in the study area at 43 percent in 2015, implying that those who live in the study area tend to work within a walkable distance from home.

Table 9 summarizes regional commuting trends between 2000 and 2015, the key insights are:

- The share of commuters who drive alone decreased in the region, and residents of the study area shifted away from driving alone more than the region with nearly a 9 percent decrease;

- Carpooling decreased everywhere except with residents of the study area where the carpool mode to work rose by nearly 7 percent;
- Transit commute mode share appears to have decreased slightly for residents who live in the urban core of the Portland region, yet the region saw a very small 0.1% increase in transit ridership suggesting that commuters living outside of the City of Portland have accounted for the small regional net gain in transit commute share;
- Bicycle commute mode share increased on the Peninsula at just over 1 percent, yet residents of the study area appeared to be commuting by bicycle less in 2015 compared to 2000;
- Walk mode share increased everywhere with impressive gains of nearly 9 percent on the Peninsula and nearly 12 percent for residents of the study area;
- The share of workers who worked from home increased everywhere except for the study area, which saw a nearly 4 percent drop in the share of home workers.

Table 9: Commute Mode Share Trends by Home Origin

	Commuter Home Origin	Drive Alone	Carpool	Transit	Bicycle	Walked	Work from Home & Other
2015	Portland-South Portland-Biddeford MSA	78.3%	9.3%	1.1%	0.6%	3.9%	7.0%
	City of Portland	67.4%	8.6%	3.1%	1.6%	12.2%	7.3%
	On the Peninsula	49.2%	6.9%	4.7%	2.8%	28.6%	7.9%
	Within the Study Area	40.6%	10.2%	3.5%	0%	42.5%	3.2%
	Commuter Home Origin	Drive Alone	Carpool	Transit	Bicycle	Walked	Work from Home & Other
2000	Portland-South Portland-Biddeford MSA	79.8%	10.2%	1.0%	0.3%	3.7%	5.0%
	City of Portland	70.7%	10.8%	3.9%	1.1%	8.9%	4.5%
	On the Peninsula	56.8%	11.8%	5.0%	1.7%	19.7%	4.9%
	Within the Study Area	49.4%	3.9%	8.5%	0.5%	30.8%	6.9%
	Commuter Home Origin	Drive Alone	Carpool	Transit	Bicycle	Walked	Work from Home & Other
Change '00-'15	Portland-South Portland-Biddeford MSA	-1.5%	-0.9%	0.1%	0.2%	0.2%	1.9%
	City of Portland	-3.3%	-2.2%	-0.8%	0.5%	3.3%	2.8%
	On the Peninsula	-7.6%	-4.8%	-0.4%	1.1%	8.9%	2.9%
	Within the Study Area	-8.8%	6.3%	-5.0%	-0.5%	11.7%	-3.7%

Sources: 2000 Census, 2015 ACS 5-Year Estimate. U.S. Census Bureau.

B.6 Auto Ownership

Auto ownership trends between 2000 and 2015 in the Portland MSA looked more or less like the nation as a whole, with growth in the number of vehicles available per occupied household of 3.3 percent in the Portland MSA versus 3.9 percent nationally. The City of Portland had higher growth in auto ownership than national and region rates with an increase of 4.4 percent.

The urban core of Portland had slower rate of growth in vehicles per household during the 15-year period. Household vehicle ownership rates on The Peninsula grew by a rate of 2.6 percent during the period while the study area grew at a rather marginal rate of 1.1 percent. In 2015, Peninsula residents owned vehicles at a rate of 0.97 per household. Within the study area, the rate was 0.7 vehicles per household, well below the national average of 1.76 vehicles per household and the regional Portland average of 1.79 vehicles per household. It is interesting to note that while auto ownership levels rose, commuting to work by single occupancy vehicle appears to have decreased in the Portland region over the same timeframe. Table 10 shows the regional auto ownership trends normalized by occupied households.

Table 10: Auto Ownership 2000-2015

	Home Location	Vehicles	Occupied Households	Veh/HH
2015	Total U.S.	205,767,452	116,926,305	1.76
	Portland-South Portland-Biddeford MSA	383,798	214,667	1.79
	City of Portland	40,495	30,119	1.34
	On the Peninsula	11,611	11,917	0.97
	Within the Study Area	1,206	1,729	0.70
	Home Location	Vehicles	Occupied Households	Veh/HH
2000	Total U.S.	178,344,236	105,480,101	1.69
	Portland-South Portland-Biddeford MSA	340,344	196,669	1.73
	City of Portland	38,283	29,715	1.29
	On the Peninsula	11,468	12,073	0.95
	Within the Study Area	1,179	1,709	0.69
	Home Location	Vehicles	Occupied Households	Veh/HH
Change '00-'15	Total U.S.	13.3%	9.8%	3.9%
	Portland-South Portland-Biddeford MSA	12.8%	9.2%	3.3%
	City of Portland	5.8%	1.4%	4.4%
	On the Peninsula	1.2%	-1.3%	2.6%
	Within the Study Area	2.3%	1.2%	1.1%

Sources: 2000 Census, 2015 ACS 5-Year Estimate. U.S. Census Bureau.

C. Existing Parking Information Technology

Many cities are making detailed parking data available to users in real time. It is encouraging that the following smartphone apps are either already available in Portland, or will soon be:

- Expected in the Fall of 2017, the new City of Portland Parking app that will allow for payment of on-street parking using a smartphone for the first time. Users will get updates on the app including alerts for expiring time and will have the opportunity to add more time up to the allowable limit. The app will be functional using both multi-space kiosk and traditional coin operated metered spaces. If over time the app can be enhanced to provide on-street occupancy and wayfinding to open on-street spaces, it could be helpful for Portland to dispel negative perceptions about parking availability. The new app along with the City's new electronic enforcement technology should help the city better manage on-street parking supply.
- The Passport Parking app is used by the largest surface lot operator in the study area, Unified Parking Partners. The Passport app already informs users where to find surface lot space on a map of Portland, allows for price comparison, hourly or multi-hour parking purchasing, and the app interfaces seamlessly with Google Maps for wayfinding. The interface could be improved by displaying price information earlier in the transaction process to quicken price comparing and including information on real-time lot occupancy.
- Spare Spott is a parking app operating in Portland that allows commercial parking operators or commercial property owners to sell transient parking at underperforming locations that may have low visibility or are grouped in small numbers in "spare" locations. The app markets itself as a way for operators who do not have their own app to connect with customers and sell underperforming spaces. The app splits profit with the owner. Hourly prices are displayed on a map of Portland prominently, making price shopping easy upon fist opening the app. The company may raise or lower hourly rates based on demand every six months.
- ParkMe and Parkopedia are global parking apps and websites that began as mostly informational but are evolving into full service parking apps as more operators share real-time information and partner with them to allow reservations. Substantial information on parking facility operating hours, prices, and facility size, and wayfinding is currently available for Downtown Portland using both apps. A limited number of parking operators currently allow the purchasing of parking using the apps. ParkMe also provides real-time occupancy at structured parking facilities, and in some markets, such as Washington, DC, the coverage of occupancy data at downtown garages is impressive. Currently, just one floor of the One City Center Garage in Portland appears to provide real-time occupancy information to the ParkMe app. With more parking operator partnerships, these apps could become excellent tools for prospective parking users.

D. Existing Parking Supply

D.1 Structured Parking Supply Inventory

Structured parking garages were inventoried in the study area using existing City parking survey data, supplemental aerial imagery, and information from City staff. The parking structures shown below in Figure 4 are categorized as either:

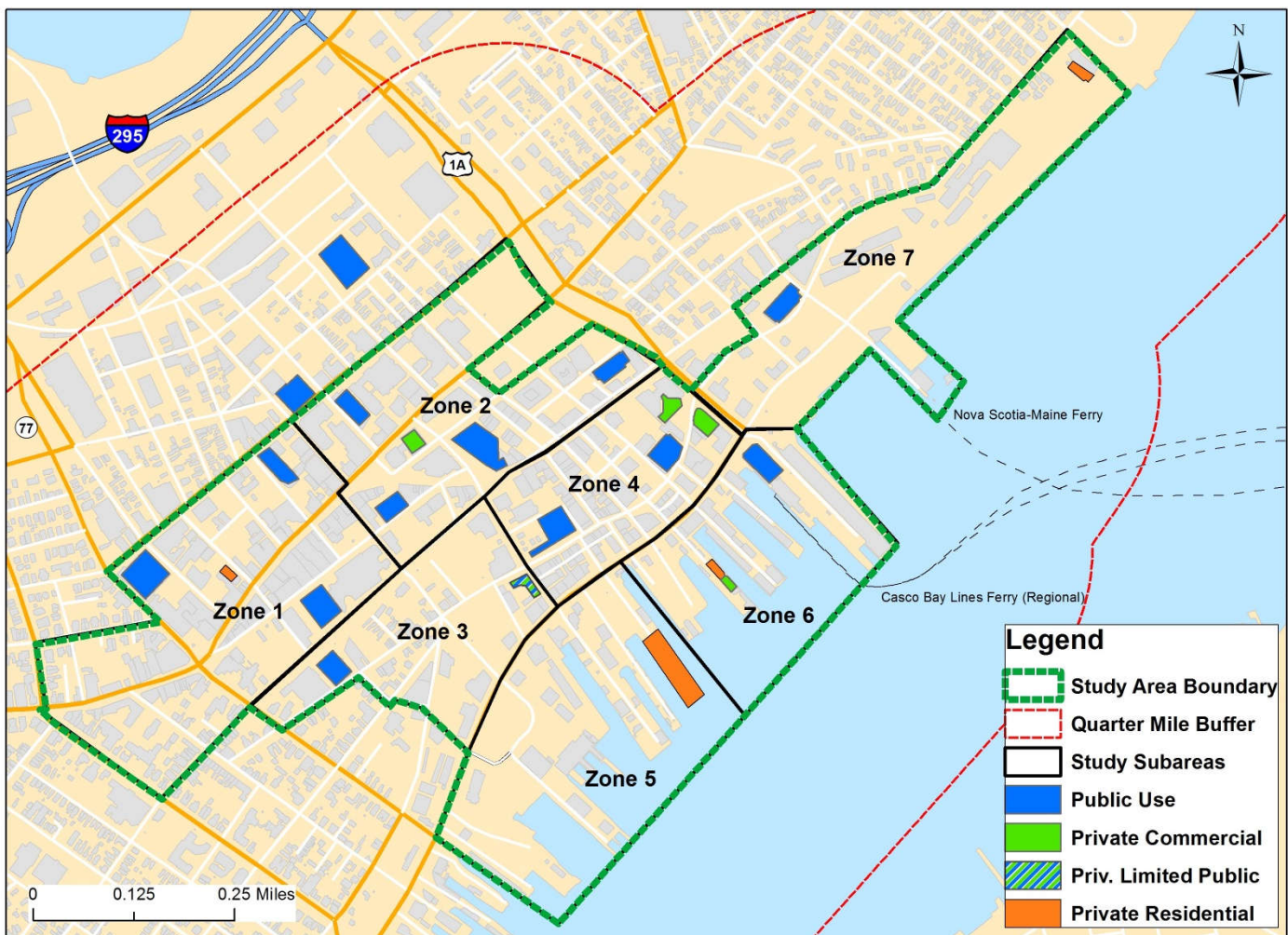
Public Use- Daily general purpose public parking use including monthly and transient users. Blocks of passes may be held by employers and or hotels/business for customers. Allocation of space to monthly pass holders and transient users is typically managed in real time with the help of software.

Private Commercial- Parking reserved for the employees and customers of commercial tenants in attached or nearby buildings.

Private Residential- Parking reserved exclusively for residents of attached or nearby buildings.

Private with Limited Public Use- Parking reserved for private tenants of attached or nearby buildings with some allowance for general use public parking either through monthly parking passes or limited transient hours typically during off-peak periods.

Figure 4: Structured Parking



An inventory of the number of parking structures by subarea zone and primary use is shown in Table 11. The land area consumed by structured parking is included. Where a parking structure fit within the structural footprint of a commercial or residential structure, the land area was not counted. This exception does not include parking structures with ground floor retail. Two public use garages within the quarter mile buffer area surrounding the study area are also included.

Table 11: Structured Parking Inventory: Quantity and Area

Subarea Zone	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area Total	1/4 mi Buffer Area ⁺
	1	2	3	4	5	6	7		
Public Use	3	4	1	2	0	1	1	12	2
Private with Limited Public Use	0	0	1	0	0	0	0	1	N/A
Private Use	1	1	0	2	1	2	1	8	N/A
Total Parking Structures	4	5	2	4	1	3	2	21	2
Structured Parking Area (acres)*	2.6	2.8	0.9	1.6	0.0	0.7	0.9	9.5	2.0
Subarea Zone Land Area (acres)	63.7	49.8	32.7	30.3	58.5	40.5	52.6	328.1	N/A
Structured Parking pct Land Area	4.1%	5.6%	2.6%	5.3%	0.0%	1.8%	1.7%	2.9%	N/A

*The areas of parking structures built beneath a commercial or residential building are not included.

+ Structured parking in the ¼ mile buffer area included the Chestnut St garage and the Public Market garage.

Structured parking capacities are summarized in Table 11. The Downtown/Old Port contains the most structured parking in the study area, with Subarea Zones 1 and 2 containing just over half of the structured parking. Total structured parking capacity totals 7,013 spaces with 87% percent of total spaces (6,113) located in garages operated for public use. There are an additional 1,050 structured parking spaces outside of the study area north of Cumberland Avenue within the quarter mile buffer area. Effective capacity is defined as 90 percent of total capacity, which is the maximum occupancy level attained before users have high difficulty locating spaces and queuing begins to occur in and around the facility.

Table 12: Structured Parking Inventory: Spaces

Subarea Zone	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area	1/4 mi Buffer Area ⁺
	1	2	3	4	5	6	7		
Public Use	1560	1946	285	1184	0	418	720	6,113	1050
Private with Limited Public Use	0	0	195	0	0	0	0	195	N/A
Private Commercial	0	73	0	284	0	20	0	377	N/A
Private Residential	37	0	0	0	150	30	111	328	N/A
Total Capacity	1,597	2,019	480	1,468	150	468	831	7,013	1,050
Effective Capacity (90%)	1,437	1,817	432	1,321	135	421	748	6,312	945

+ Structured parking in the ¼ mile buffer area included the Chestnut St garage and the Public Market garage.

D.2 Structured Parking Monthly Supply and Pricing

The exact number of monthly spaces sold at privately operated garages is considered confidential information and was not shared by operators for this study. The amount of monthly parking offered is sometimes set by lending terms. Parking operators set their rate structures and parking mix (monthly vs. transient) to maximize revenue. Transient parking users pay a higher daily rate but can be a less reliable source of revenue. Many structured parking operators use software to optimize the parking mix offered. The amount of monthly parking available to employees in the study area is among the most important parking issues Portland is facing, as employers have voiced frustration over the scarcity of monthly parking for new employees.

Table 13 shows what the quantity of monthly structured parking would likely be under a range of reasonable assumptions for different types of structured parking.

For the public use structures, a low range of 65 percent and a high range of 85 percent of total capacity for daytime monthly parking was assumed, including an oversell rate of 10 percent. Oversell rates are possible because of the daily probability of monthly parker absenteeism, vacation, and time differences in worker shifts. Reserved parking is not typical in Portland except for in private commercial and residential garages. Monthly supply in private commercial garages was estimated as the total capacity since these structures are primarily built to accommodate the employees of attached structures.

Garages primarily for hotel patron use were estimated at 15 percent to 20 percent monthly. Although residential parking structures do not typically contract out monthly parking for nearby employees, an estimated 12 percent of structured residential spaces are counted towards monthly parking capacity because it is unlikely that residents who both live and work within the study area would pay to re-park their vehicles at their place of employment. The 12 percent estimate is derived from dividing the number of primary job holders who both live and work in the study area, 300² by the adult population of the study area, 2,431³.

² Source: 2014 Longitudinal Employer-Household Dynamics Data from the U.S. Census Bureau, the latest year available.

³ Source: 2015 American Community Survey 5-year estimates from the U.S. Census Bureau. 18 years and over population of Census Tract 3 in Cumberland County Maine.

Table 13: Structured Parking Pricing and Estimate of Monthly Structured Parking

Subarea Zone	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area (1-7)	1/4 mi Buffer Area ⁺
	1	2	3	4	5	6	7		
Total Capacity	1,597	2,019	480	1,468	150	468	831	7,013	1,050
Effective Capacity (Spaces)	1,437	1,817	432	1,321	135	421	748	6,312	945
Estimate of Monthly Spaces	1,020-1,460	1,460-1,890	70-100	1,130-1,390	18-20	320-410	530-690	4,650-5,960	680-880
Monthly Percentage of Total Spaces (Estimate)	70%-91%	72-94%	15-20%	77-95%	12%	68-88%	64-83%	66-85%	71-93%
Average Monthly Price	\$120	\$126	\$120	\$160	N/A	\$155	\$155	\$134	\$120
Average Daily	\$25	\$30	\$16	\$45	N/A	\$40	\$50	\$32	\$35
Average Hourly Price	\$2.60	\$3.10	\$1.75	\$5.50	N/A	\$5.00	\$5.00	\$3.60	\$3.00

+ Structured parking in the ¼ mile buffer area included the Chestnut St garage and the Public Market garage.

Also in Table 13 are average monthly, daily, and hourly parking prices for structured parking. The average prices in each zone were weighted by garage size. The highest average parking rates are found in Subarea Zone 4 in the Old Port, Subarea Zone 6 near the Casco Bay Lines Ferry Terminal, and Subarea Zone 7 the Eastern Waterfront.

To put the average structured parking prices into context, Table 14 was made to show how average prices from the study area compared to other cities in New England. As a quick way to aggregate price data from other cities, the online parking information from site Parkopedia.com was used to retrieve parking prices from the 5 closest parking structures to City Hall in each of the respective cities. The averages shown are weighted by structure size where possible and reflect weekday prices.

Table 14: Comparing Structured Parking Cost in New England Cities

	City	Monthly		City	Daily		City	Hourly
1	Boston, MA	\$502	1	Boston, MA	\$39	1	Boston, MA	\$25.58
2	Providence, RI	\$211	2	Portland, ME	\$32	2	Providence, RI	\$8.00
3	Hartford, CT	\$202	3	Portsmouth, NH	\$25	3	Hartford, CT	\$4.00
4	New Haven, CT	\$159	4	Hartford, CT	\$22	4	New Haven, CT	\$3.89
5	Portsmouth, NH	\$135	5	Providence, RI	\$19	5	Portland, ME	\$3.60
6	Portland, ME	\$134	6	New Haven, CT	\$17	6	Bridgeport, CT	\$3.25
7	Worcester, MA	\$121	7	Stamford, CT	\$14	7	Worcester, MA	\$3.18
8	Burlington, VT	\$96	8	Bridgeport, CT	\$14	8	Stamford, CT	\$3.00
9	Manchester, NH	\$93	9	Springfield, MA	\$13	9	Manchester, NH	\$2.26
10	Springfield, MA	\$93	10	Manchester, NH	\$11	10	Portsmouth, NH	\$1.25
11	Bridgeport, CT	\$89	11	Worcester, MA	\$11	11	Springfield, MA	\$1.23
12	Stamford, CT	\$89	12	Burlington, VT	\$10	12	Burlington, VT	\$1.11

Source: City of Portland, ME Parking Survey 2017, Parkopedia.com accessed in June 2017.

Portland appears to be middle of the pack compared to other New England cities by monthly and hourly prices for structured parking. Daily structured parking prices, however, show that Portland is second only to Boston in average price.

In some markets, garages offer evenings-only monthly parking at reduced rates, however the practice does not appear to be widespread in the Portland. One garage in Subarea Zone 4 advertises monthly evenings-only parking at a cost of \$85.

D.3 Surface Lot Parking

Surface parking lots were inventoried in the study area using existing City parking survey data, supplemental aerial imagery, and information from City staff. The surface lots in Figure 5 are categorized by their primary use as either:

Public Use- General purpose public parking use. Payment structure may either be by monthly permit, daily, hourly or some combination thereof. Public use lots may be publicly or privately owned.

Private with Limited Public Use- Private lots primarily for employee or customer parking that offer limited general-purpose public use either through the sale of a limited number of permits for weekdays or off-peak transient access.

Private Commercial- Parking intended for use by the customers of nearby commercial land use, possibly with limited employee parking mixed in.

Private Residential- Parking reserved exclusively for residents of nearby buildings.

Private Employer- Parking reserved for employee or industrial parking use.

Private Shared/Other- Parking that serves a mix of nearby land uses including residential, commercial, and or civic/ecclesiastical/institutional use. General public parking is not allowed.

Figure 5: Surface Lot Parking

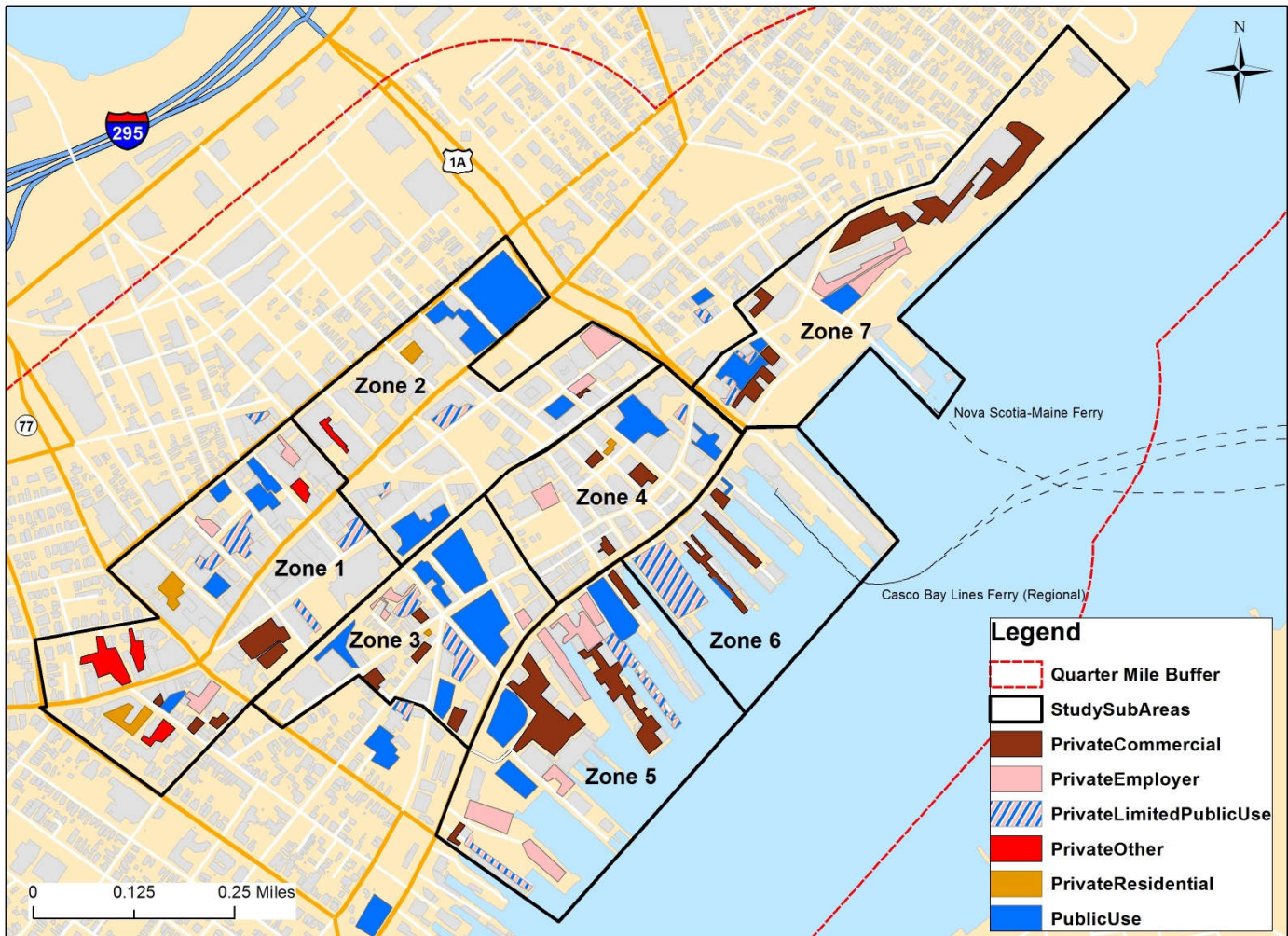


Figure 5 also includes a small number of surface parking lots located outside of the study area that are known to offer general purpose public parking. There are many more private surface lots within the quarter mile buffer area, but most serve businesses and residences outside of the study area.

Table 15 summarizes the quantity of surface lots in each category by subarea and includes the percentage of land occupied by surface parking.

Table 15: Surface Lot Parking Inventory: Quantity and Area

Subarea Zone	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area	1/4 mi Buffer Area ⁺
	1	2	3	4	5	6	7		
Public Use Lots	5	4	5	2	3	2	3	24	3
Private Lots with Lim. Public Use	4	2	2	1	2	1	2	14	2
Private Lots	14	5	8	5	10	3	7	52	N/A
Total Surface Lots	23	11	15	8	15	6	12	90	N/A
Public Use Lot Area (acres)	1.8	6.3	6.7	1.8	3.5	0.2	1.6	21.9	1.78
Private with Lim. Public Use Lot Area (acres)	2.0	0.6	0.4	0.2	1.6	2.7	0.4	7.7	0.3
Private Lot Area (acres)	5.9	1.6	1.3	1.2	9.0	1.3	6.3	26.5	N/A
Total Surface Lot Area (acres)	11.7	8.5	8.9	3.3	14.0	6.8	8.7	61.9	N/A
Subarea Zone Area (acres)	63.7	49.8	32.7	30.3	58.5	40.5	52.6	328.1	N/A
Surface Lot Parking Pct Land Area	18.4%	17.0%	27.2%	11.0%	23.9%	16.7%	16.6%	18.9%	N/A

+ Surface lot parking in the ¼ mile buffer area included Maria's Ristorante, Angelo's Acre, 52 Danforth St, 62 India St, and 59 Middle St.

Surface parking land area totaled 18.9 percent in the study area. When combined with the land area of structured parking, which was 2.9 percent (as shown in Table 11), the total land area allocated to parking in the study area becomes 21.8 percent. To put the percent of land area devoted to parking in the study area into perspective, Table 16 shows central business district land area allocated to off-street parking from past studies of other cities. The study area, which is a close proxy for Portland's CBD, is among other CBDs known to have a high percent of land area allocated to surface parking.

Table 16: Comparing CBD Land Area Allocated to Parking

City	Year	Percent of CBD Land Area Devoted to Parking
Los Angeles, CA	1960 ⁴	24%
Portland, ME	2017	22%
Silver Springs, MD	2010 ⁵	22%
Hartford, CT	2000 ⁶	18%
Dallas, TX	1961 ³	18%
New Haven, CT	2000 ⁵	16%
Berkeley, CA	2000 ⁵	6%
Cambridge, MA	2000 ⁵	3%

The capacity of surface lots is summarized in Table 17. Surface lot parking supply within the study area totals 6,405 spaces with 43 percent of total spaces (2,785) designated for public use. There are an additional 316 spaces outside of the study area identified as offering public parking. Effective capacity is shown as 90 percent of total capacity, which is the maximum occupancy level attained (5,765 spaces) before users have high difficulty locating spaces and queuing begins to occur in and around the facility.

Table 17: Surface Lot Parking Inventory: Spaces

Subarea Zone	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area	1/4 mi Buffer Area ⁺
	1	2	3	4	5	6	7		
Public Use Lots	208	889	672	254	520	32	210	2,785	271
Private with Lim. Public Use Lots	175	67	163	32	125	317	56	935	45
Private Employer Lots	136	65	74	35	361	-	282	953	N/A
Private Commercial Lots	261	6	114	90	261	133	464	1,329	N/A
Private Other/Mixed Lots	188	15	-	-	-	-	-	203	N/A
Private Residential Lots	130	37	6	27	-	-	-	200	N/A
Total Capacity	1,098	1,079	1,029	438	1,267	482	1,012	6,405	316
Effective Capacity	988	971	926	394	1,140	434	911	5,765	284

+ Surface lot parking in the ¼ mile buffer area included Maria's Ristorante, Angelo's Acre, 52 Danforth St, 62 India St, and 59 Middle St.

⁴ Manville, Michael; Shoup, Donald. "Parking, People, and Cities". Journal of Urban Planning and Development. American Society of Civil Engineers. December 2005.

⁵ Johnson, Matt, "Parking Takes Up Space", Greater Greater Washington. July 23, 2010. <<https://ggwash.org/view/5939/parking-takes-up-space>>

⁶ McCahil, Chris et. Al. "Visualizing Urban Parking Supply Ratios". Congress for New Urbanism 22nd Annual Meeting, Buffalo, NY June 4-7, 2014.

D.4 Surface Lot Monthly Supply and Pricing

An estimate of monthly surface lot parking supply (available during the daytime) was made using the following assumptions. Public use lots that advertise as monthly parking only during weekday working hours are known. Public use lots that offer a mix of monthly, daily, and hourly parking where the number of monthly parking spaces sold was unknown were assumed to offer a range between 65 percent and 85 monthly with an oversell rate of 10%.

Private employer lots were considered to be 100% monthly. Private commercial lots are primarily for customers, however 25% was counted as monthly to account for limited parking for business owners and employees who may have close parking privileges. Similarly, a 25% assumption was also made for shared/other parking lots. Private residential parking lots were counted as 12% monthly parking, based on the percent of adult study area residents who also work in the study area and would be unlikely to repark their vehicle at work.

Table 18 shows the estimated range of monthly parking by subarea zone. Also in Table 18 are surface lot weighted price averages. Price averages were weighted by lot size. A separate average was calculated for weekend prices because some private lots offer public daily and hourly parking on weekends only. The average daily weekend rate was slightly lower, \$21 compared to \$23, on weekdays. The average weekend hourly rate was slightly higher at \$3.75, compared to \$3.25 on weekdays. Additionally, a limited number of lots offer a flat evening rate after 6pm at an average of \$5.

Table 18: Surface Lot Parking Pricing and Estimate of Monthly Parking

Subarea Zone	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area (subareas 1-7)	1/4 mi Buffer Area ⁺
	1	2	3	4	5	6	7		
Total Capacity (Spaces)	1,098	1,079	1,029	438	1,267	482	1,012	6,405	257
Effective Capacity (Spaces)	988	971	926	394	1,140	434	911	5,765	231
Estimate of Monthly (Spaces)	540-580	750-940	750-890	270-330	920-1030	370-380	600-650	4200-4800	110-160
Estimate of Monthly (Pct)	49-53%	70-87%	73-86%	62-75%	73-81%	77-79%	59-64%	66-75%	43-62%
Avg Monthly Price	\$95	\$108	\$120	\$135	\$119	\$140	\$116	\$118	\$81
Avg Weekday Daily (if offered)	N/A	\$17	\$36	N/A	\$10	\$40	\$10	\$23	\$6
Avg Weekday Hourly	\$3.75	\$2.75	\$3.75	\$6.25	\$3.00	\$6.00	\$5.00	\$3.25	\$4
Avg. Evening Flat Rate after 6pm (if offered)	N/A	N/A	\$5.00	\$6.00	\$5.00	N/A	N/A	\$5.00	N/A
Avg Weekend Daily (if offered)	N/A	\$19	\$36	N/A	\$8	\$40	\$10	\$21	\$6
Avg Weekend Hourly	\$4.00	\$2.50	\$4.25	\$4.25	\$4.00	\$6.00	\$5.00	\$3.75	\$4

+ Surface lot parking in the ¼ mile buffer area included Maria’s Ristorante, Angelo’s Acre, 52 Danforth St, 62 India St, and 59 Middle St.

Comparing the study area surface lot prices to other cities in New England shows that the monthly and hourly surface lot prices fall near the middle of the pack in New England, but the daily surface lot price of \$21 ranks third behind Boston and Portsmouth, NH. Table 19 contains a surface lot price comparison. The data from other cities was collected by averaging prices at up to 5 of the nearest surface lots to each respective city hall using the parking information site Parkopedia.com and supplemental information from individual city websites.

Table 19: Comparing Surface Lot Parking Cost in New England Cities

	City	Monthly		City	Daily		City	Hourly
1	Boston, MA	\$332	1	Boston, MA	\$34	1	Boston, MA	\$15.00
2	Providence, RI	\$188	2	Portsmouth, NH	\$25	2	Providence, RI	\$8.00
3	New Haven, CT	\$135	3	Portland, ME	\$21	3	Hartford, CT	\$4.70
4	Portland, ME	\$118	4	New Haven, CT	\$19	4	New Haven, CT	\$4.51
5	Hartford, CT	\$117	5	Burlington, VT	\$16	5	Portland, ME	\$3.25
6	Stamford, CT	\$75	6	Providence, RI	\$16	6	Burlington, VT	\$1.80
7	Manchester, NH	\$60	7	Hartford, CT	\$12	7	Springfield, MA	\$1.38
8	Springfield, MA	\$60	8	Stamford, CT	\$10	8	Portsmouth, NH*	\$1.00
9	Burlington, VT	\$55	9	Bridgeport, CT	\$10	9	Worcester, MA	\$0.90
10	Portsmouth, NH	N/A	10	Worcester, MA	\$8	10	Manchester, NH	\$0.61
	Worcester, MA	N/A	11	Springfield, MA	\$6		Stamford, CT	N/A
	Bridgeport, CT	N/A	12	Manchester, NH	\$6		Bridgeport, CT	N/A

*Surface lots in Portsmouth, NH priced at \$1 per hour have a 2 to 4-hour time limit.

D.5 On-Street Parking Supply

Using recent City survey data for on-street parking supply in the study area and supplemental counts using available street level images, the total on-street supply for the study area is summarized in Table 20.

Table 20: On-Street Parking Supply Summary

Regulation Type	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area (subareas 1-7)	Percent of Total On-Street Supply
	1	2	3	4	5	6	7	Total	Percent
2 Hour Meter	366	381	179	293	115	88	63 or (48)*	1,470	66%
2 Hour Zone	10	7	13	2	0	0	76	108	5%
1 Hour Zone	106	22	27	8	0	0	2	165	7%
30min Zone	3	34	2	4	0	1	0	44	2%
15min Zone	9	12	21	12	2	3	12	71	3%
5min Zone	12	11	1	1	0	0	0	25	1%
VLZ	24	27	29	33	3	1	0	117	5%
Motor Cycle	10	13	3	9	9	0	0	44	2%
Disabled	22	17	2	4	2	1	1	49	2%
Special Permit	8	14	0	0	0	0	0	22	1%
Unrestricted	6	7	60	0	0	0	53	126	6%
Taxi	1	0	0	1	0	0	0	2	0.1%
School Restricted	0	8	0	0	0	0	0	8	0.4%
Total	577	553	337	367	131	94	192	2,251	100%

Bus Zone	5	0	0	1	3	1	0	10	
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*(15 meters on the Eastern Waterfront are taken out of service during cruise ship visits and fall events, 48 spaces are included in the total).

Portland charges \$1.25 per hour for on-street parking, a rate comparable to other medium to large New England cities. As Table 21 shows, where other cities have raised rates higher than a \$1.25 per hour, they have also typically introduced some type of price variability by location with higher rates in higher demand areas.

Table 21: On- Street Parking Pricing in New England Cities

City	Hourly	Price Exceptions	Metered Time Limits	Payment Methods	Meter Hours
Boston, MA	\$1.25	A pilot test in the Back-Bay Neighborhood is testing rates of \$3.75 for all meters; A pilot test in the Seaport District is testing demand based pricing where hourly meter rates are adjusted bi-monthly from \$1 to \$2.50. The adjustments are made in \$0.50 increments up or down using an 80% occupancy by block-face threshold.	2hr	Coin, Credit, ParkBoson app	Mon-Sat 8am-8pm
Portsmouth, NH	Varies	Hourly prices range from \$1.50 to \$2.00	15 min, 3hr, and 4hr	Coin, Credit, Passport app, EasyPark device	Mon-Sat 9am to 8pm, Sun 12pm to 8pm
New Haven, CT	Varies	Hourly prices range from \$0.75 to \$1.50	15min, 30min, 1hr, 2hr, 5hr, and no time limit meters	Coin, Credit Parkmobile app	Mon-Sat 8am-9pm
Providence, RI	\$1.25		2hr, 3hr,4hr, and 10 hr	Coin, Credit, Passport app	Mon-Sat 8am-9pm
Portland, ME	\$1.25		2hr	Coin, Credit, new parking app	Mon-Sat 9am-6pm
Hartford, CT	\$1.00		2hrs	Coin, Credit, Prepaid Downtown Gift Card	Mon-Fri 8am-6pm
Worcester, MA	\$1.00		1hr, 2hr	Coin, Credit	Mon-Sat 8am-8pm
Bridgeport, CT*	\$1		2hr	Coin, Credit, MobileNow app	Mon-Sat 8am-6pm
Stamford, CT	\$1		Not available	Coin, Parkmobile app	Mon-Sat 8am-7pm
Burlington, VT	Varies	Hourly rates \$1 for most spaces and \$0.40 for the 10hr spaces	15min, 30 min, 1hr, 3hr, 10hr	Coin, Credit, Parkmobile app	Mon-Sat 8am-10pm
Manchester, NH	\$0.75	Downtown on-street permit \$55 per month, commercial use \$20 per day on-street permits	2hr, 10hr	Coin, Credit, EasyPark device	Mon-Fri 8am-8pm, Sat 10am-8pm
Springfield, MA	\$0.50		2hr	Coin, Credit, Prepaid card, Passport app	Mon-Sat 8am-6pm

*Bridgeport, CT has recently installed new 'smart' parking meters that include sensors and cameras for automated ticketing by mail. Results have been mixed.

D.6 Total Study Area Parking Supply

Combining the structured, surface lot, and on-street parking supply in the study area gives the total parking capacity shown in Table 22. The study area capacity comes out to 15,669 spaces with an effective capacity of 13,990 spaces which is the state at which all structures and surface lots are both 90% full and on-street parking is 85% occupied. The total estimate of monthly parking comes out to a likely range of between 8,730 and 10,750 monthly spaces, which is 65 percent to 80 percent of the total off-street supply in the study area.

Table 22: Total Study Area Parking Supply

	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area (1-7)	1/4 mi Buffer Area
	1	2	3	4	5	6	7		
Total On-Street	577	553	337	367	131	94	192	2,251	N/A
Total Surface Lot Spaces	1,098	1,079	1,029	438	1,267	482	1,012	6,405	257
Total Garage Spaces	1,597	2,019	480	1,468	150	468	831	7,013	1,050
Total Capacity	3,272	3,651	1,846	2,273	1,548	1,044	2,035	15,669	1,307
Effective Capacity	2,916	3,258	1,645	2,027	1,387	935	1,822	13,990	1,176
Estimated Monthly Structured	1,020-1,460	1,460-1,890	70-100	1,130-1,390	20	320-410	530-690	4,650-5,960	750-980
Estimated Monthly Surface Lot	540-580	750-940	750-890	270-330	920-1030	370-380	600-650	4,200-4800	110-160
Total Off-Street Estimated Monthly	1560-2040	2210-2830	820-990	1400-1720	920-1030	690-800	1130-1340	8,730-10,750	860-1140
Total Estimated Monthly Percent of Off-Street Parking	58-76%	71-91%	54-66%	73-90%	65-73%	73-84%	61-73%	65-80%	66-87%

In the sections that follow, observed parking occupancy and a land-use based parking analysis estimates overall parking demand in the study area. However, neither of these methods could isolate monthly parking demand from transient demand. A quick approximation of monthly demand from employees in the study area is made using a combination of the employment from Table 3, the commuter mode share data from Table 9, and the estimated supply of monthly parking in Table 22.

The results in Table 23 place the demand for monthly employee parking in the study area about 320 spaces above the high range estimate for monthly parking supply in the study area. After including the estimated monthly parking supply in the quarter mile buffer area as available to study area workers, the total monthly supply within walking distance to the study area is about 800 greater than the demand. The monthly parking demand from employees who work outside

of the study area but within the quarter mile buffer area was not calculated, however these employees surely take up some of the monthly supply in the buffer area, although it is more common for employers outside of the study area to provide on-site parking. This approximation is not precise enough to produce a definitive number of additional monthly supply needed. There are also island residents who also purchase monthly parking at and near the ferry terminal. Overall monthly parking demand per day is probably within a couple of hundred of the total monthly supply within a walkable distance of the study area. Unrestricted on-street parking in the study area and in adjacent neighborhoods is also likely being used by full-time workers given the tight market for monthly parking.

Table 23: An Approximation of Monthly Parking Demand per Day from Study Area Employees

	Downtown/Old Port				Central Waterfront		Eastern Waterfront	Study Area (1-7)	1/4 mi Buffer Area	Study Area + Buffer Area
	1	2	3	4	5	6	7			
Primary Employees ⁷	3,722	3,764	2,045	4,088	750	948	740	16,057		
Subtract Study Area Resident Employees (1.9%) ⁶	(70)	(70)	(38)	(76)	(14)	(18)	(14)	(300)		
Subtract Avg Employee Absenteeism Rate (2.9%) ⁸	(108)	(109)	(59)	(119)	(22)	(27)	(21)	(466)		
Subtract Avg Employee Vacation Rate (6.2%) ⁹	(231)	(233)	(127)	(253)	(47)	(59)	(46)	(996)		
Estimated Commuting Employees	3,314	3,351	1,821	3,640	668	844	659	14,296		
City of Portland Drive Alone Mode Share ¹⁰	73.1%	73.1%	73.1%	73.1%	73.1%	73.1%	73.1%	73.1%		
City of Portland Carpool Mode Share ⁹	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%		
Estimated Drive Alone Vehicles ¹¹	2,422	2,450	1,331	2,661	488	617	482	10,450		
Estimated Carpool Vehicles ¹⁰	143	145	79	157	29	36	28	617		
Estimated Total Monthly Vehicle Parking Demand	2,570	2,590	1,410	2,820	520	650	510	11,070		
Total Estimated Monthly Parking Spaces	1,560-2,040	2,210-2,830	820-990	1,400-1,720	920-1,030	690-800	1,130-1,340	8,730-10,750	860-1,140	9,590-11,890

⁷ Primary Employees are defined as working at jobs which are filled by only one worker. Source: 2014 Longitudinal Household Employer Dynamics data from the U.S. Census Bureau.

⁸ Absence rate from work for all occupations. Not including vacation. Source: 2016 Current Population Survey from the Bureau of Labor Statistics.

⁹ Data from Project Time Off research on the vacation habits of American workers. American workers were found to have taken 16.2 vacation days on average. <https://www.projecttimeoff.com/research/state-american-vacation-2016>. With 261 work days in 2016, the percentage of vacation days taken represent 6.2% of work days.

¹⁰ The drive-alone and carpool mode shares from the City of Portland are used as an approximation in the absence of specific mode share data for all commuters to the study area. Rates are adjusted here after excluding the share of workers who reported working from home. Source: 2015 ACS 5-Year Estimate. U.S. Census Bureau.

¹¹ Carpool vehicles were estimated using the reported rates of 2-person, 3-person, and 4-person or more carpool users. It is assumed that the carpool vehicle parks within the study area or buffer area. 2015 ACS 5-Year Estimate. U.S. Census Bureau.

Based on Table 23,

Figure 6 shows which subarea zones likely generate more monthly parking demand than the high estimate of monthly parking supply in each zone. Subarea Zones 1, 3, and 4 have more employee demand for monthly parking than available supply in those zones respectively. Employees of these zones are likely parking in adjacent zones with available monthly parking where available.

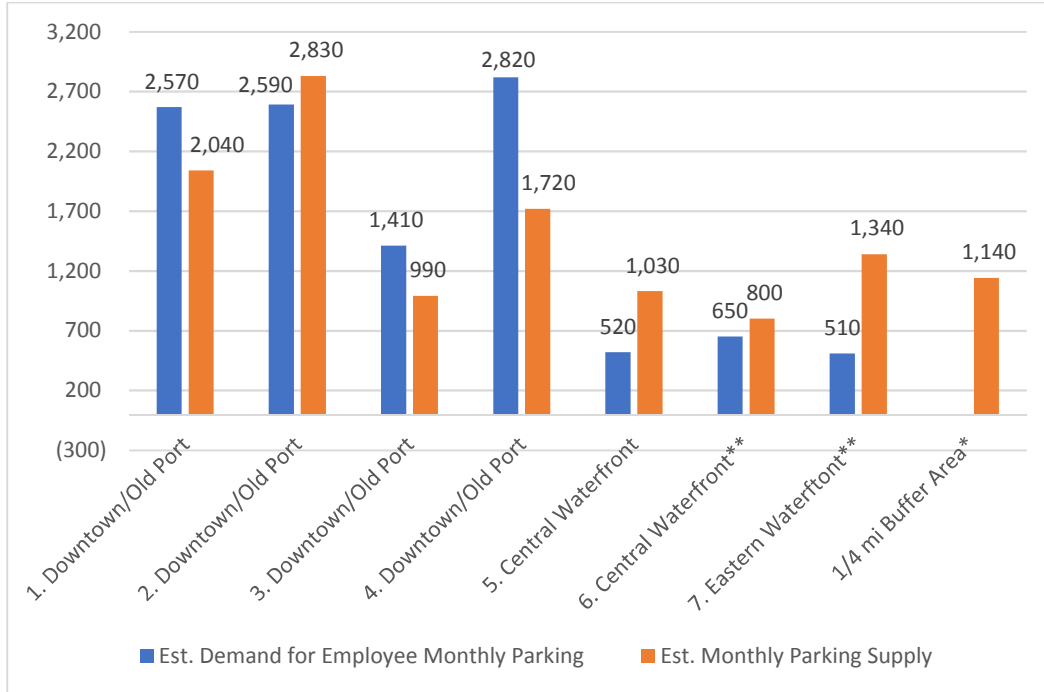


Figure 6: Monthly Parking Supply and Demand by Subarea Zone

*Monthly parking demand from land use in the ¼ mile buffer area was not calculated but consumes some of the monthly parking supply shown here.

**Island resident monthly parking also consumes monthly supply particularly in Zones 6 and 7.

D.7 Time of Day Variation in Parking Supply

Due to variation in off-street parking operating days and hours, total parking supply in the study is not constant. Figure 7 shows how total parking supply varies on a weekday, and Figure 8 shows how total parking supply varies on Saturday.

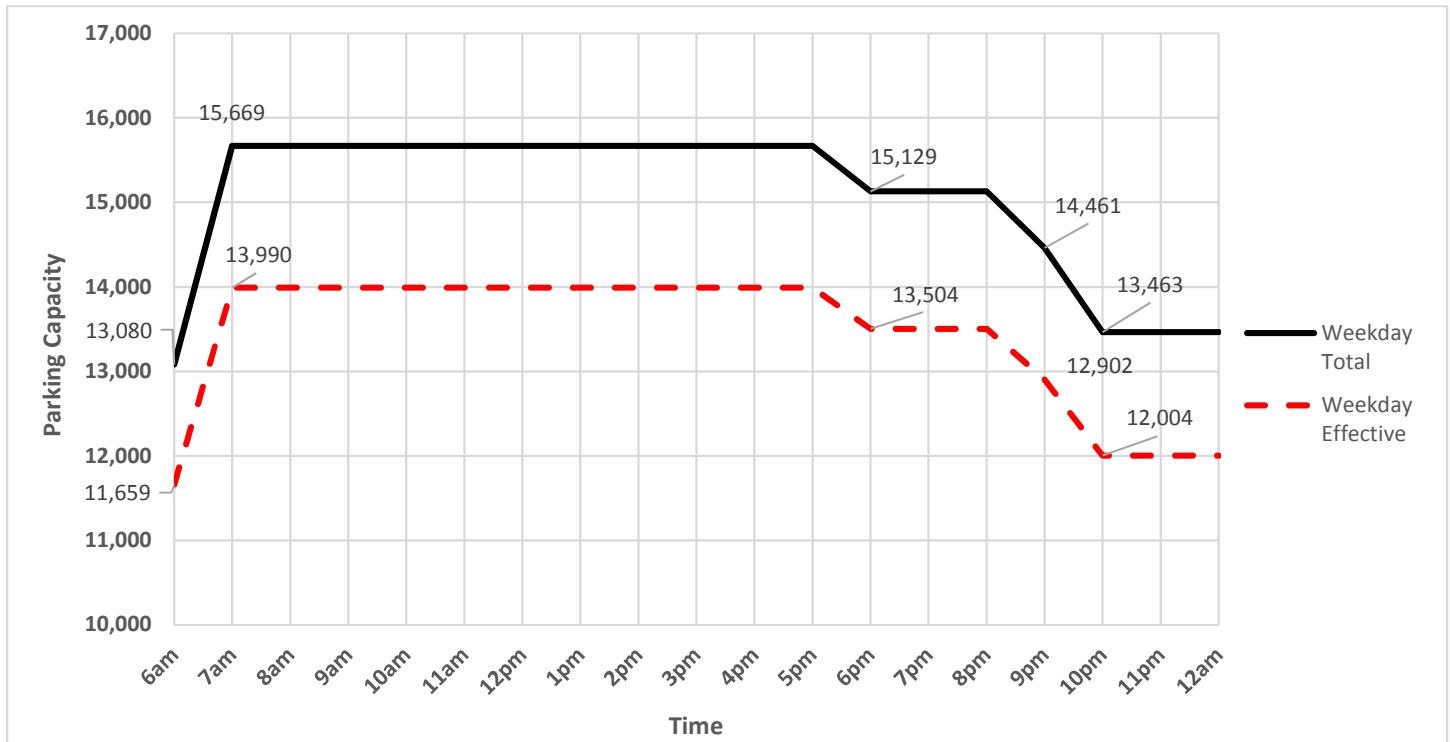


Figure 7: Weekday Parking Capacity by Time of Day

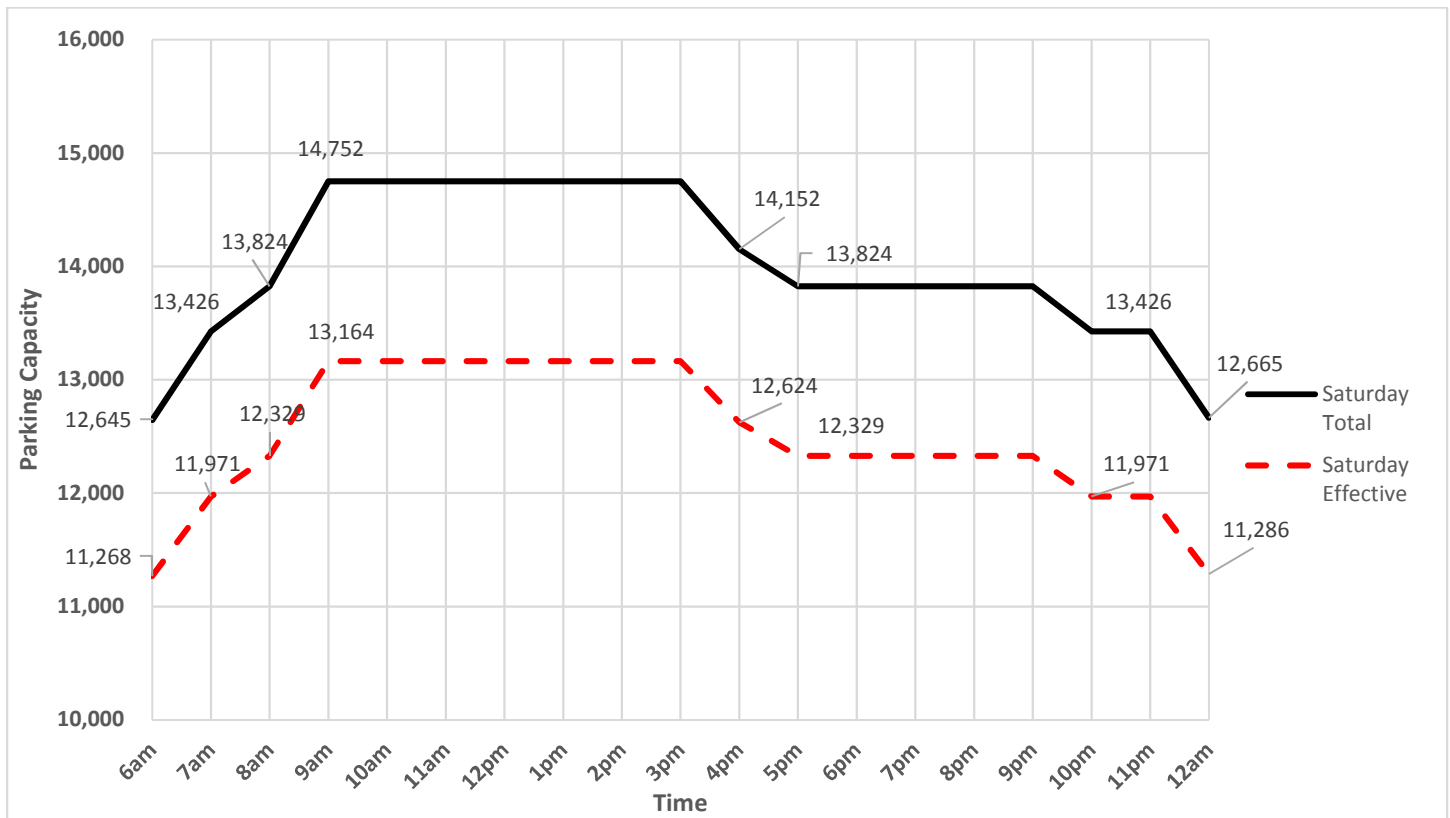


Figure 8: Saturday Parking Capacity by Time of Day¹²

E. Observed Parking Occupancy

Parking occupancy data was collected at a sample of garages, surface lots, and on-street sites simultaneously on Thursday, December 1st, 2016 and Saturday, December 3rd, 2016.

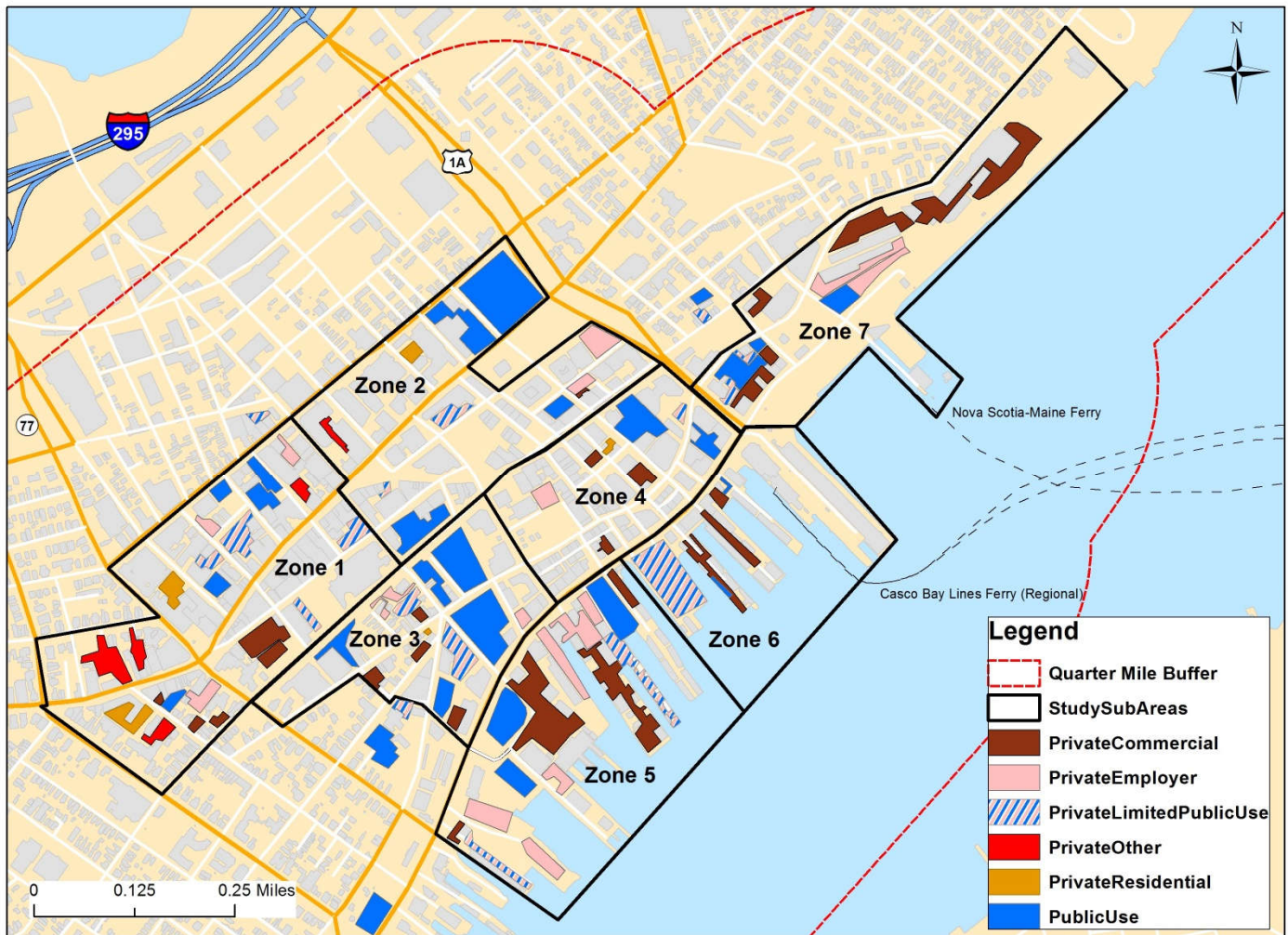
The weather on the Thursday sample date was 36 degrees and had a light drizzle of rain until 9am before overcast skies stabilized. The Saturday sample had a temperature of 40 degrees with intermittent clouds and sun. The choice of early December for collecting the data was more of a project timeline necessity than a first choice, but as shown in the seasonal factors section, the sample days appear to have had higher than average, but not annual peak demand. December is near the annual low in visitors to Portland from outside of the region. This issue is addressed in the seasonal factors section where the observed parking occupancy is adjusted for the peak season.

The occupancy data presented in this section shows the amount of vacant space observed without adjustment for how the vacant space is managed. Almost all of the structured parking operators in the study area manage their facilities with software to maximize the amount of vacant space that may be sold to transient demand at a certain time of day. Surface lots in Portland tend to be operated more manually. For surface lots that are managed in a way that does not allow for optimal resale of vacant space to transient users, there may be fewer available spaces for resale than observed

¹² The large decrease in parking between 3pm and 5pm on Saturday resulted from The One City Center Garage closing at 4pm and the Cumberland County Courthouse garage closing at 5pm when this parking capacity analysis was completed. However, the operating hours of Th One City Center garage (600 spaces) has since changed to 24 hours a day and 7 days per week.

occupancy would suggest. As shown in Table 23, the daily average rate of absenteeism and vacation use for American workers is about 10%. Additionally, some monthly parking users may leave during the day for appointments etc. As a result, operators might oversell their target share of monthly parking based on their experience with the daily use rates of monthly parking. We have not factored up the observed occupancy rates to address monthly parking user vacancy, because making efficient use of that vacancy can be maximized with optimal parking management, and it is important to know the observed amount of vacant space so that the efficiency of parking supply management might be known in cases where parking is said to be unavailable but vacant spaces exist.

E.1 Observed Surface Lot Occupancy



(Figure 5 from Section D.3 repeated here for reference)

As described in the section on garage and surface lot supply, there are 90 surface lots containing 6,405 spaces in the study area. On two data collection days, the surface lot occupancy data was manually collected by a team of observers every two hours. The Thursday count intervals began at 8am and concluded with a final count interval at 8pm. On Saturday, the counting began at 10am and concluded at 8pm. Between 60 and 77 lots were captured in the sample depending on the hour, and the coverage was well distributed across the study area.

Off-street parking is considered effectively full when it reaches 90 percent occupancy because that is the occupancy level beyond which the facility is perceived as full by users. The short-term rise and fall of occupancy level due to turnover needs a 10 percent reserve capacity to prevent intermittent queuing in and around the facility.

For the study area on Thursday, a single peak was observed during the middle of the day. The peak average surface lot occupancy of 72 percent was observed at 12pm, and the observation at 2pm of 70 percent was nearly as high. Occupancy dropped steadily after 2pm to a low of 19 percent by 8pm.

Figure 9 shows a chart of average surface lot occupancy for the study area for the Thursday sample. As a measure of dispersion in the sample of surface lots, the bars represent one standard deviation from the mean, which tended to be about +/-22 percent.

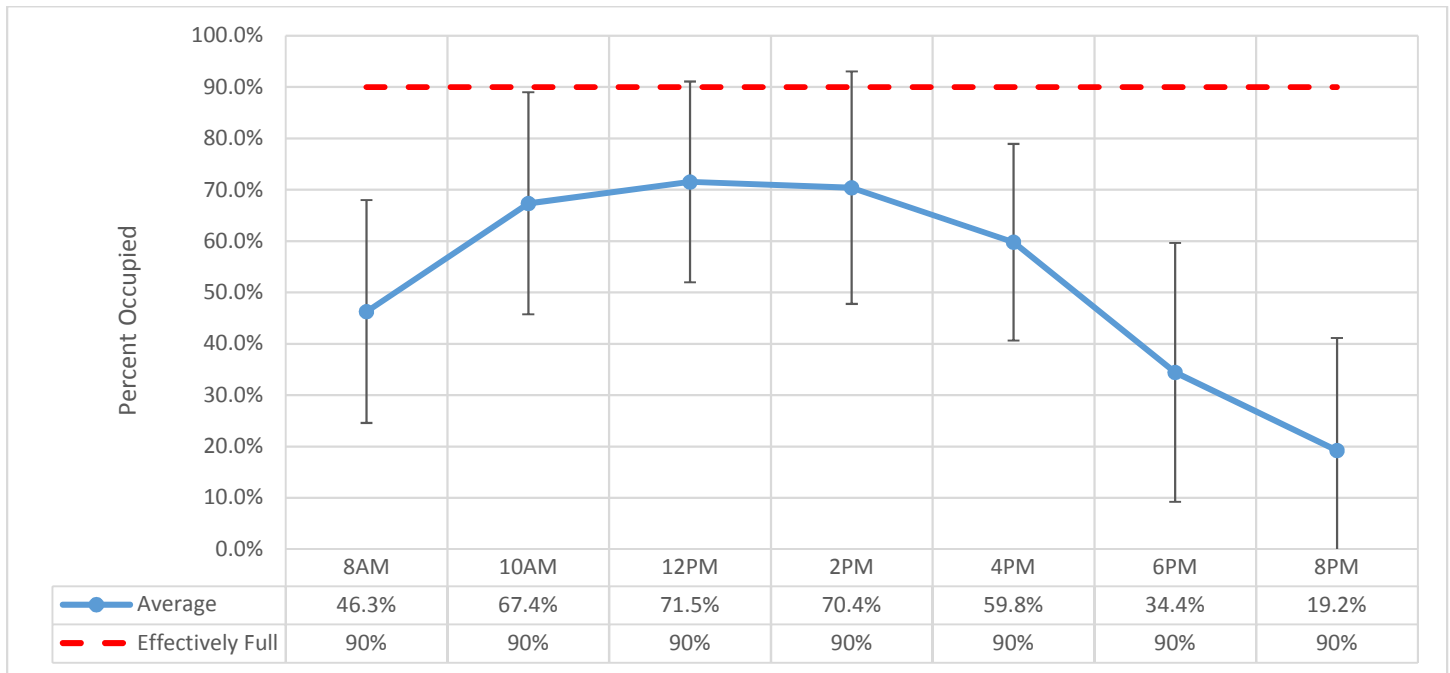


Figure 9: Surface Lot Occupancy by Location Thursday Sample

Figure 10 shows a chart of overall average surface lot occupancy for the study area on Saturday, the peak surface lot occupancy of 37.5 percent was observed at 2pm. A second smaller peak of 31.4 percent occurred at 8pm. The absence of many weekday employees appears to open up ample surface lot space on Saturday. One standard deviation from the mean tended to be about +/-25%.

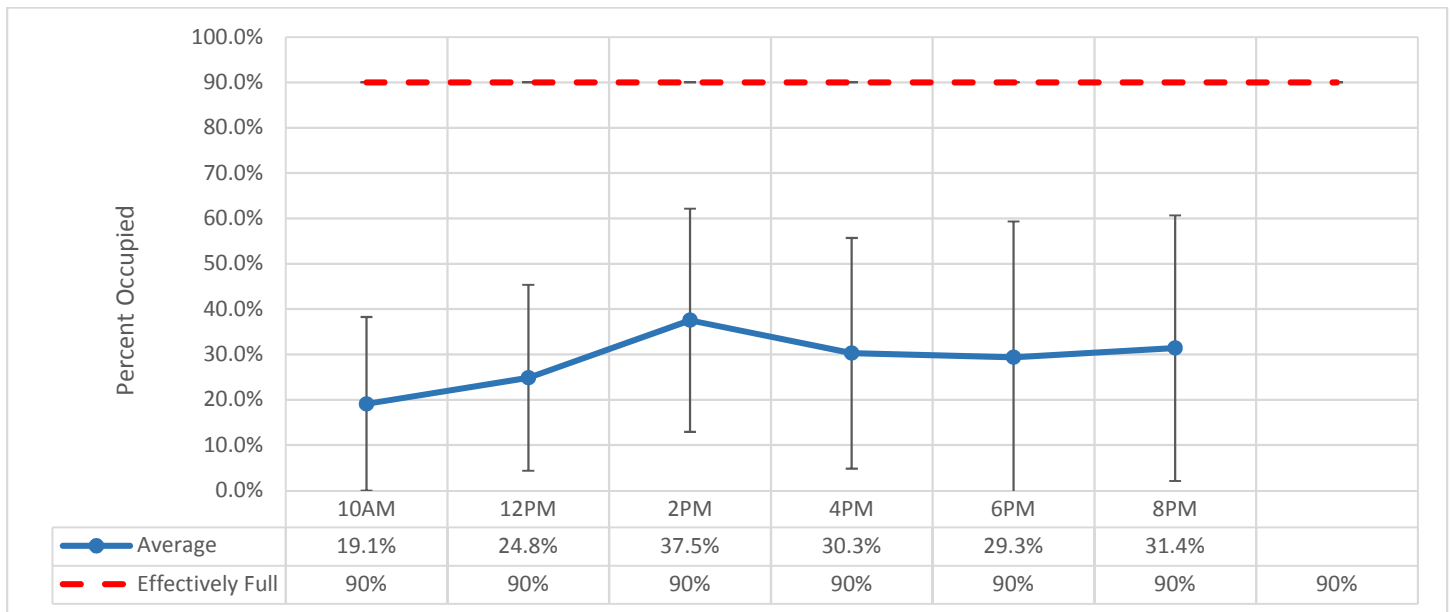


Figure 10: Surface Lot Occupancy by Location Saturday Sample

Within the study area, variation in surface lot occupancy by subarea zone is shown for the Thursday sample in Figure 11.

Location (Zone)	Spaces	8AM	10AM	12PM	2PM	4PM	6PM	8PM
Downtown/Old Port (1)	1,098	51%	62%	67%	60%	52%	49%	32%
Downtown/Old Port (2)	1,079	42%	73%	74%	75%	65%	35%	14%
Downtown/Old Port (3)	1,029	47%	77%	81%	84%	70%	38%	20%
Downtown/Old Port (4)	438	58%	70%	69%	72%	64%	31%	26%
Central Waterfront (5)	1,267	44%	73%	76%	74%	64%	18%	11%
Central Waterfront (6)	482	32%	54%	66%	69%	55%	54%	42%
Eastern Waterfront (7)	1,012	58%	59%	61%	58%	45%	15%	12%
Overall Time Period Avg		46%	67%	72%	70%	60%	34%	19%

*Higher Than Average Occupancy for The Time Period

Figure 11: Thursday Observed Surface Lot Occupancy Variation by Subarea Zone

Subarea zones that had a higher occupancy level than average by time period are highlighted in red. Subarea Zone 3 in the Downtown/Old Port area stands out as having surface lots that are more occupied than average throughout the day, reaching a peak of 84% occupancy at 2pm. Subarea Zone 2 had higher than average surface lot occupancy between 10am and 6pm with a high of 75% occupied at 2pm.

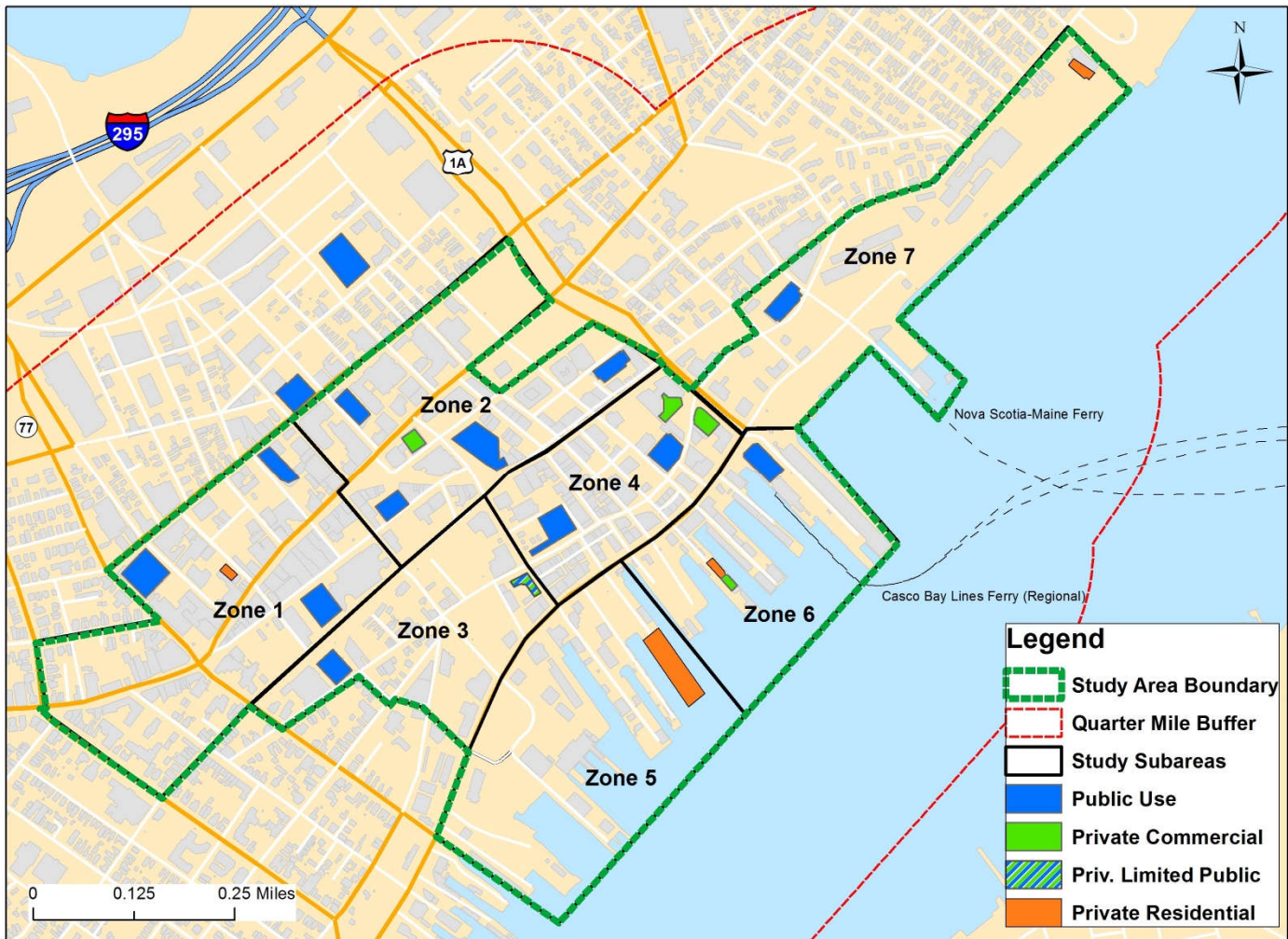
Figure 12 shows the Saturday occupancy results by subarea zone. Subarea Zone 6, on the central Waterfront stands out as having higher than average surface lot occupancy throughout the day reaching a peak of 73% occupancy at 2pm. Otherwise, occupancy is low in all subarea zones.

Location (Zone)	Spaces	10AM	12PM	2PM	4PM	6PM	8PM
Downtown/Old Port (1)	1,098	27%	39%	40%	29%	32%	35%
Downtown/Old Port (2)	1,079	11%	17%	54%	48%	23%	36%
Downtown/Old Port (3)	1,029	19%	20%	23%	20%	23%	24%
Downtown/Old Port (4)	438	27%	27%	35%	42%	55%	51%
Central Waterfront (5)	1,267	12%	16%	28%	13%	16%	16%
Central Waterfront (6)	482	33%	54%	73%	54%	64%	64%
Eastern Waterfront (7)	1,012	16%	17%	19%	18%	22%	16%
Overall Time Period Avg		19%	25%	38%	30%	29%	31%

*Higher Than Average Occupancy for The Time Period

Figure 12: Saturday Observed Surface Lot Occupancy Variation by Subarea Zone

E.2 Observed Structured Parking Occupancy



(Figure 6 repeated here for reference)

As described in the section on structured parking inventory, there are 21 parking structures containing 7,013 spaces in the study area. Eight parking structures are for private use only, four serve office employees in attached structures, while four are used by attached residential developments. The observed occupancy results here focused on the 13 parking structures that offered at least some public parking with a total of 6,308 spaces.

Automated entrance/exit data was requested from structured parking operators on Thursday, Dec. 1st and Saturday, Dec. 3rd. Data was received for 9 parking structures with at least one structure in each subarea zone. Data from a 10th structure was collected manually on-site during the data collection days.

Structured parking is considered effectively full at 90 percent occupancy. The Thursday and Saturday weighted average occupancy data are displayed in Figure 13 and Figure 14 respectively. Average occupancy was weighted by garage size. The standard deviation bars give a sense of the range of occupancy levels found among the different parking structures by time period.

The Thursday results showed a single peak mid-day with a high of 72 percent between 12pm and 2pm. One standard deviation from the mean during the peak period was about 12 percent.

Individual garages are not shown for commercial privacy considerations, but one garage had to be displayed separately because it is an important outlier. The Casco Bay Garage is an ‘upside down’ garage meaning it peaks in occupancy opposite of the usual mid-day peak. The Casco Bay Garage showed a peak occupancy of 72% between 12am and 6am. The garage is known to have customers who live on islands in Casco Bay and commute daily to and from the island using a parked vehicle at the garage.

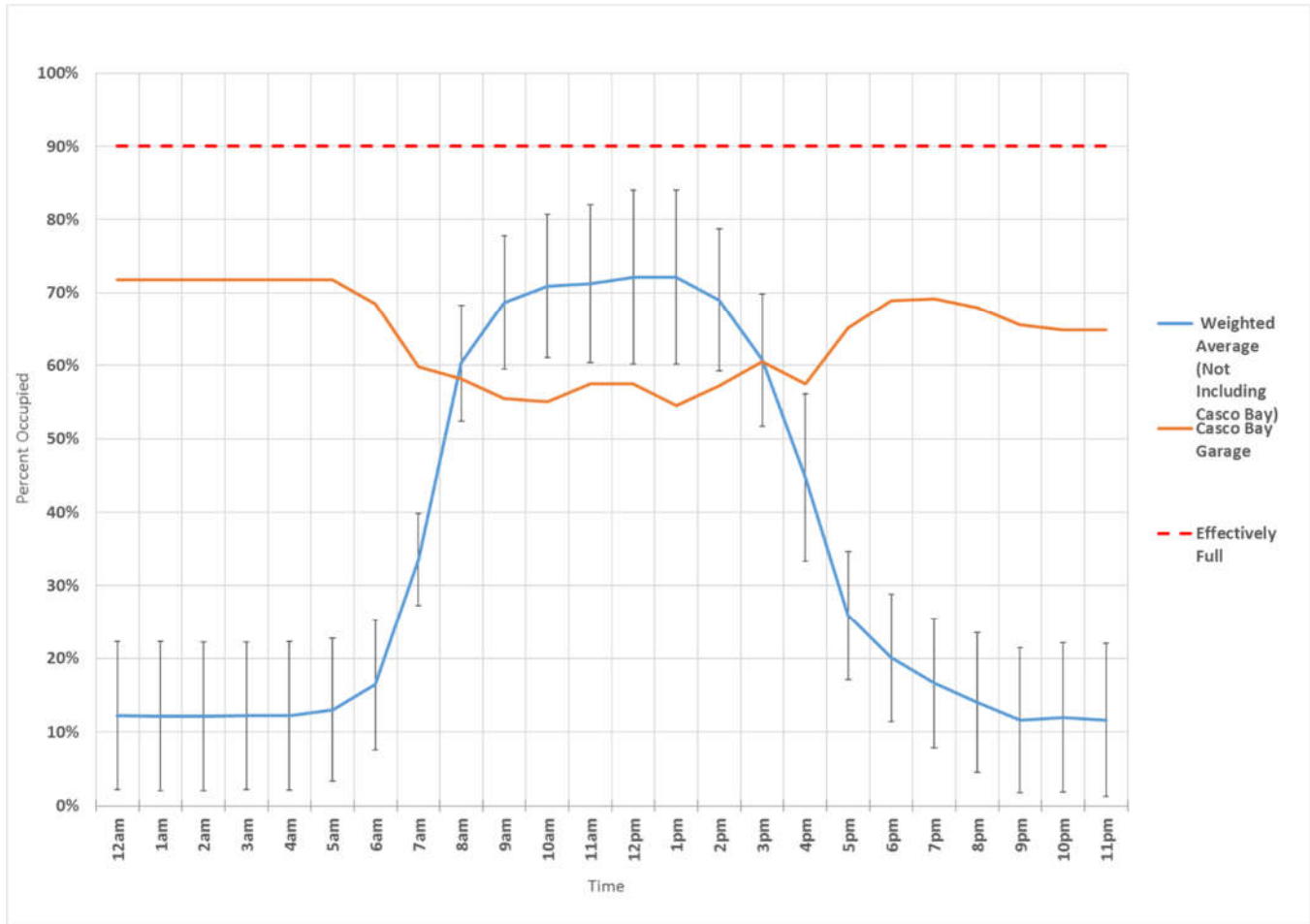


Figure 13: Thursday Observed Occupancy at Structured Parking for Public Use

A quick look at the variation within the study area of structured parking occupancy for the Thursday sample shows that for the period between 10am and 2pm, Subarea Zone 4 and Subarea Zone 2 both in the Downtown/Old Port had higher average occupancy than the study area, when not including the Casco Bay Garage. Table 24 shows average subarea zone occupancies during the mid-day period ordered from highest to lowest on the observed Thursday.

Table 24: Thursday Peak Period Structured Parking Occupancy by Subarea Zone

Subarea Zone	Average Occupancy 10am-2pm
Downtown/Old Port (4)	78%
Downtown/Old Port (2)	74%
Downtown/Old Port (1)	69%
Eastern Waterfront (7)	63%
Downtown/Old Port (3)	60%
Central Waterfront (6)	56%
Central Waterfront (5)	N/A
Overall Average (Not Including Casco Bay Garage)	72%

Results from the Saturday sample showed low structured parking occupancies across the study area except for the Casco Bay Garage as shown in Figure 14. The Casco Bay Garage had occupancies ranging between a low of 66 percent at 9am to a high of 80 percent at 5pm. The weighted average occupancy for all other sampled parking structures peaked between 1pm and 3pm at about 17 percent, one standard deviation from the average during the peak period was about 9 percent.

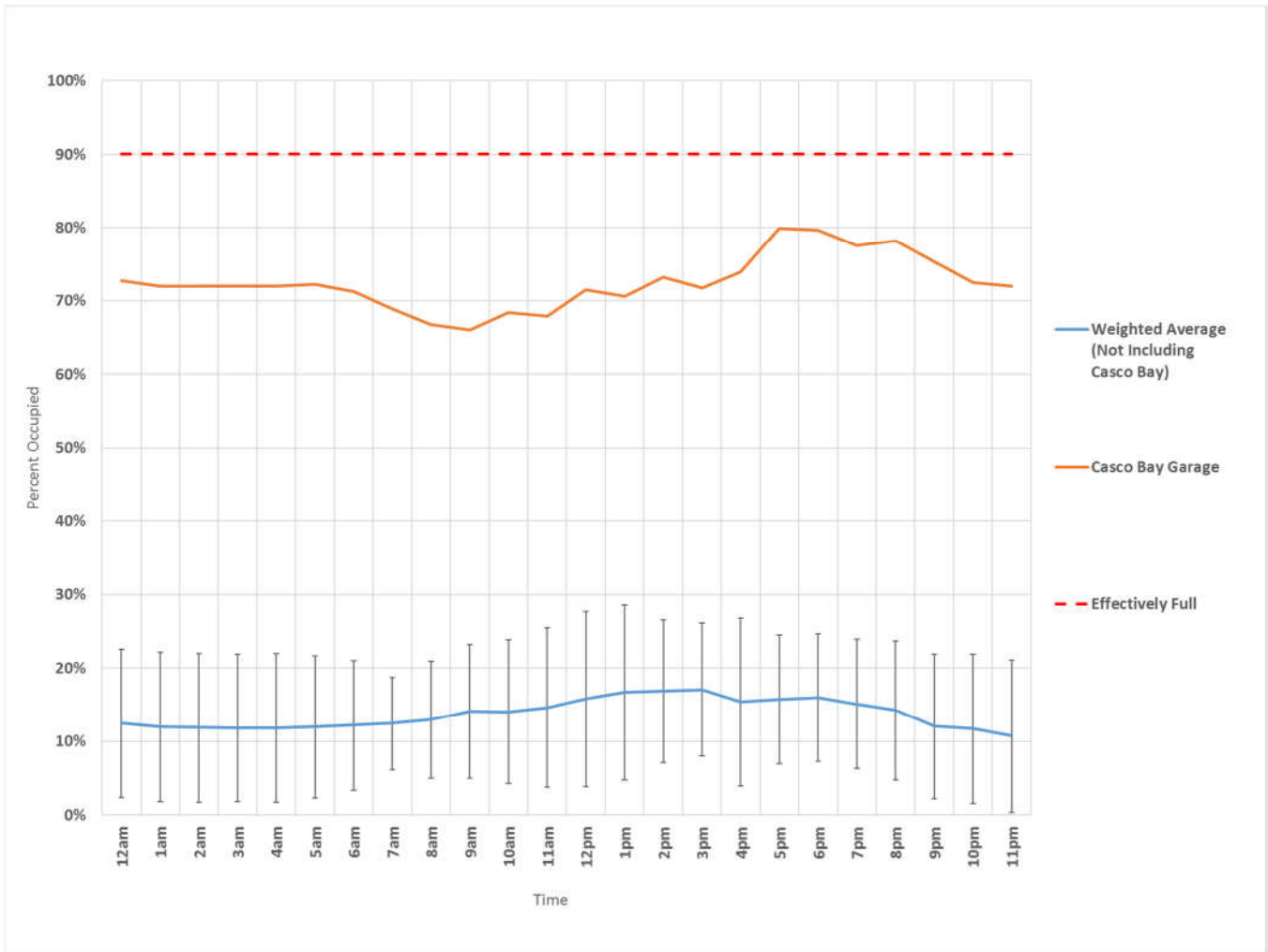


Figure 14: Saturday Observed Structured Parking Occupancy

A quick look at the variation within the study area of structured parking occupancy for the Saturday sample shows that for the period between 1pm and 3pm, the afternoon peak period, Subarea Zone 3 in the Downtown/Old Port and Subarea Zone 7, the Eastern Waterfront, had slightly higher than average structured parking occupancy than the study area, in addition to the Casco Bay Garage in Subarea Zone 6. Table 25 shows subarea zone occupancies during the afternoon peak period ordered from highest to lowest on the observed Saturday.

Table 25: Saturday Peak Period Structured Parking Occupancy by Subarea Zone

Subarea Zone	Average Occupancy 1am-3pm
Central Waterfront (6)	72%
Downtown/Old Port (3)	30%
Eastern Waterfront (7)	23%
Downtown/Old Port (2)	16%
Downtown/Old Port (1)	15%
Downtown/Old Port (4)	11%
Central Waterfront (5)	N/A
Overall Average (Not Including Casco Bay Garage)	17%

E.3 On-Street Parking: Overall Occupancy

On-street parking data was collected on the sample dates (Thursday Dec. 1st and Saturday Dec. 3rd) from selected streets in the study area including: Commercial St, Spring St, Middle St, Exchange St and Casco St. Observations were made at one-hour intervals beginning at 8am and ending after 8pm. An observer walked along each side of the street and recorded the last 3 digits of parked vehicle license plates allowing for analysis of both occupancy, duration, and turnover. Metering in the 2-hour zones was in effect between 9am and 6pm on Thursday and Saturday. The total number of 2-hour metered spaces sampled was 477 representing about one third of the 1,485 two-hour metered spaces in the study area. Figure 15 shows the on-street sample coverage area.

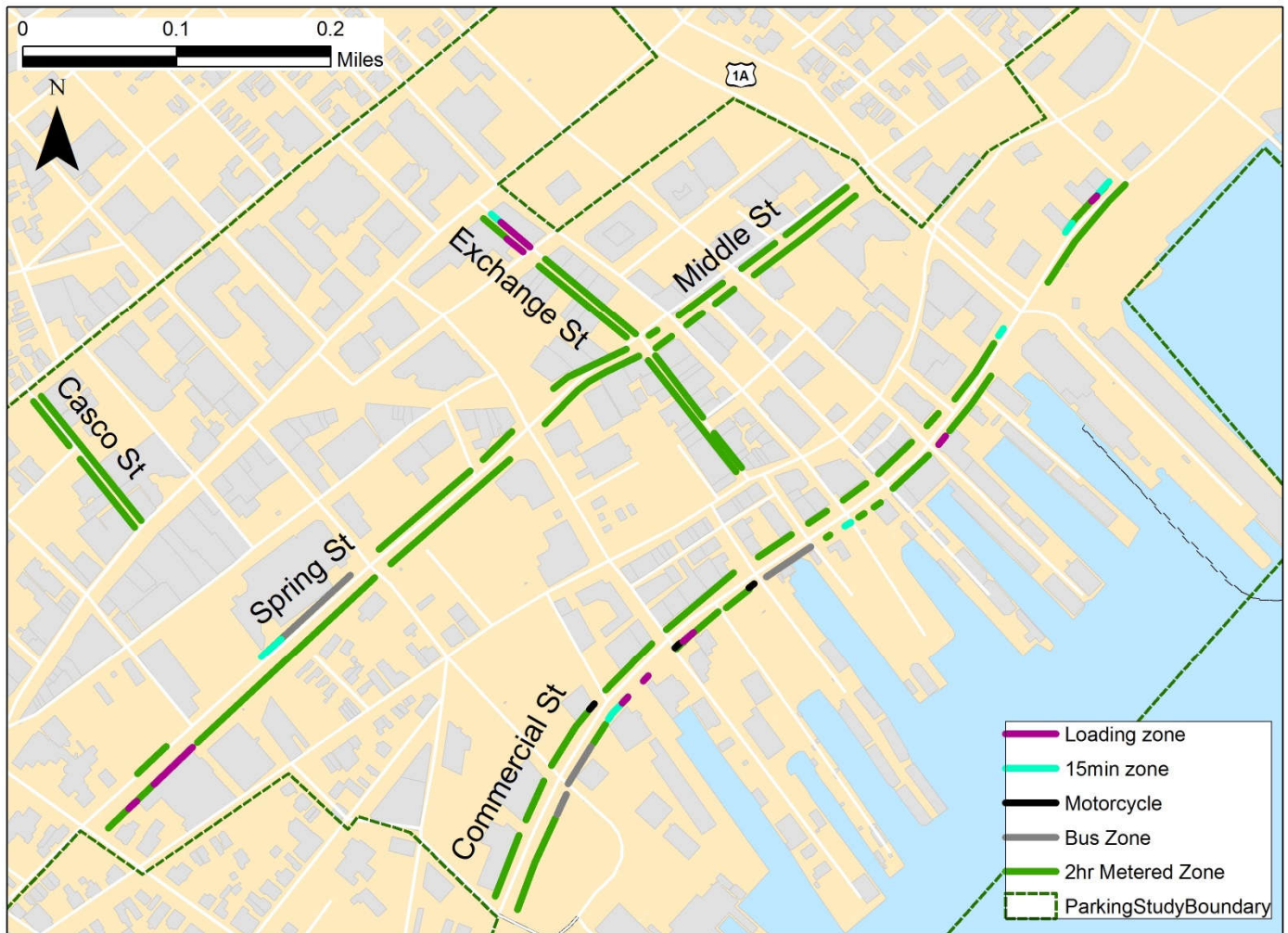


Figure 15: The On-Street Parking Sample

The focus in this section is on occupancy in the 2-hour metered zones. On-Street parking is considered effectively full at 85% capacity. Beyond this level, users have difficulty finding parking on the street and either give up or circle the block repeatedly leading to user frustration, increased traffic, and the perception that there is no parking.

Study area wide, the Thursday results show a pattern of rising occupancy in the morning to about 80 percent by noon. Between noon and 3pm, occupancy moved between 75-80 percent. After 3pm, occupancy began to climb and reached a peak of 87 percent at 7pm before trending down to 77 percent by 8pm. The 7pm observation interval was the only one

on Thursday to show that the aggregate on-street sample was effectively full, though as subsequent sections show, variation existed block to block. Figure 16 shows the percent of 2-hour metered spaces occupied between 8am and 8pm for the study area sample on Thursday.

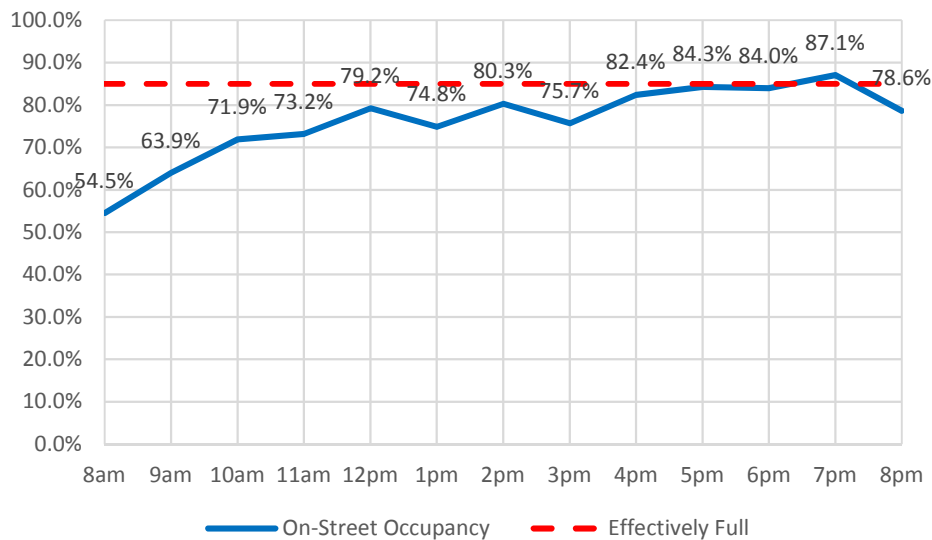


Figure 16: Overall Thursday 2-Hour Metered Occupancy

The Saturday results show higher on-street occupancy than Thursday. Overall 2-hour metered occupancy rose steadily to an effectively full level of 88 percent by 2pm before decreasing slightly below 85 percent through 3pm. After 3pm, overall occupancy surpassed the effectively full level again and steadily climbed to a peak of 97.5 percent by 8pm. Figure 17 shows occupancy between 10am and 8pm for Saturday. It should be noted that the increasing occupancy trend leading to the second peak of the day begins close to 4pm. That is the time when a vehicle may park, pay for two hours until the metered period ends at 6pm, and then remain for the rest of the evening.

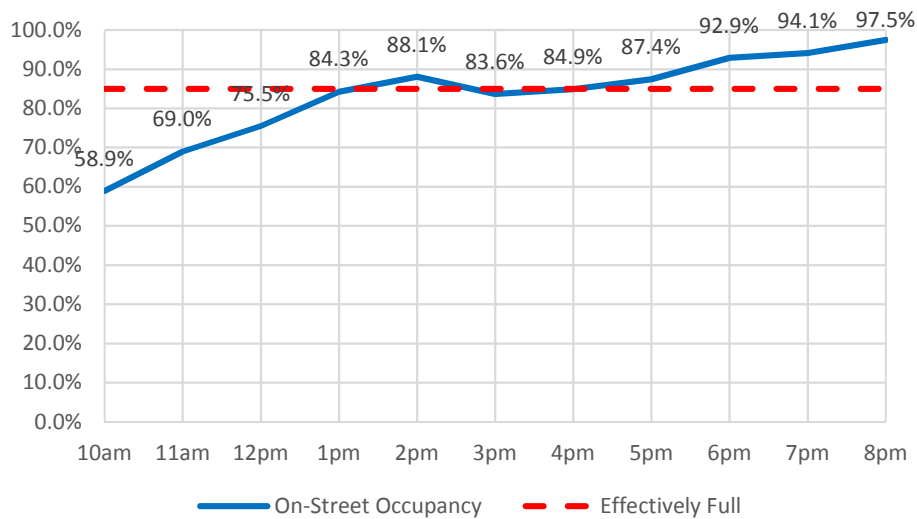


Figure 17: Overall Saturday 2-Hour Metered Occupancy

E.4 On-Street Parking: Occupancy by Street

This section shows aggregate 2-hour metered occupancy by street. Both sides of each street are combined into a single average occupancy by observation period. It should be noted that even when a street is effectively full on average, there may be variation among block-faces as shown in the next section.

E.4.1 Commercial St from Maple St to India St

Commercial St from Maple St to India St was beyond effectively full after 5pm on Thursday. On Saturday, this section of Commercial St was over effectively full at 2pm and after.

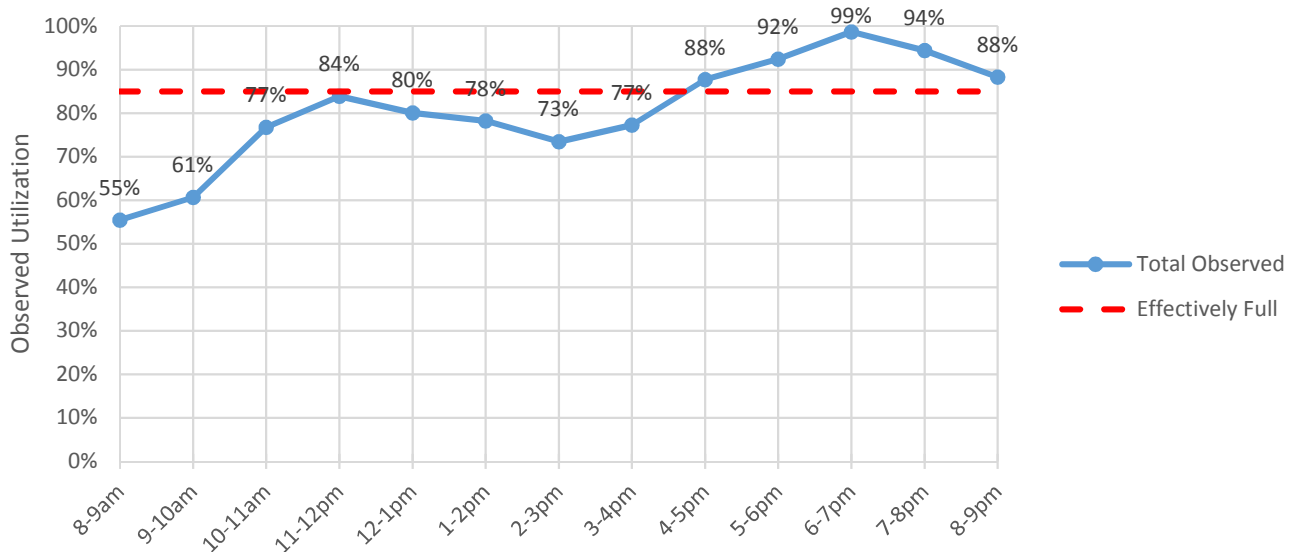


Figure 18: Commercial St Thursday 2-Hour Metered Occupancy

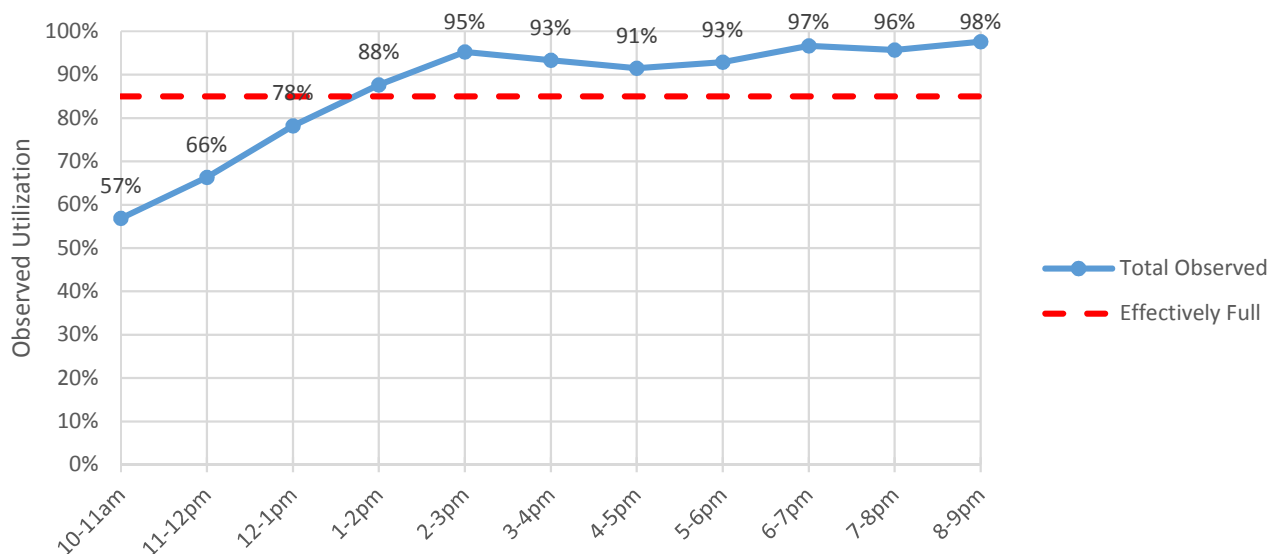


Figure 19: Commercial St Saturday 2-Hour Metered Occupancy

E.4.2 Exchange St from Congress St to Fore St

Exchange St from Congress St to Fore St was effectively full between 12pm and 6pm on Thursday. On Saturday, this section of Exchange St was effectively full all day except for 3-4pm.

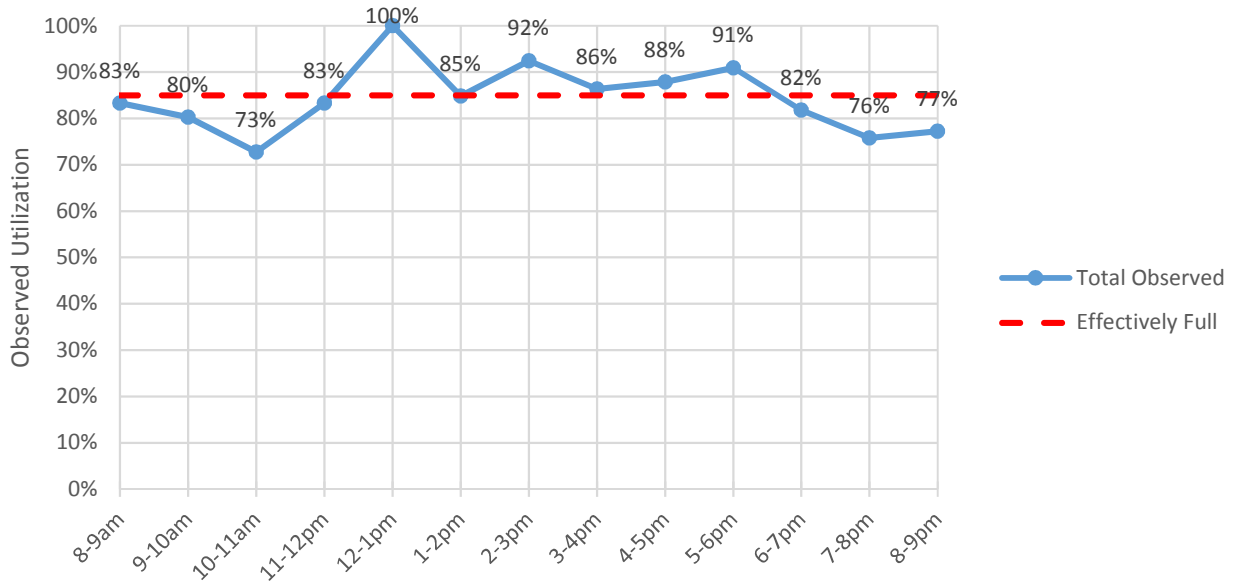


Figure 20: Exchange St Thursday 2-Hour Metered Occupancy

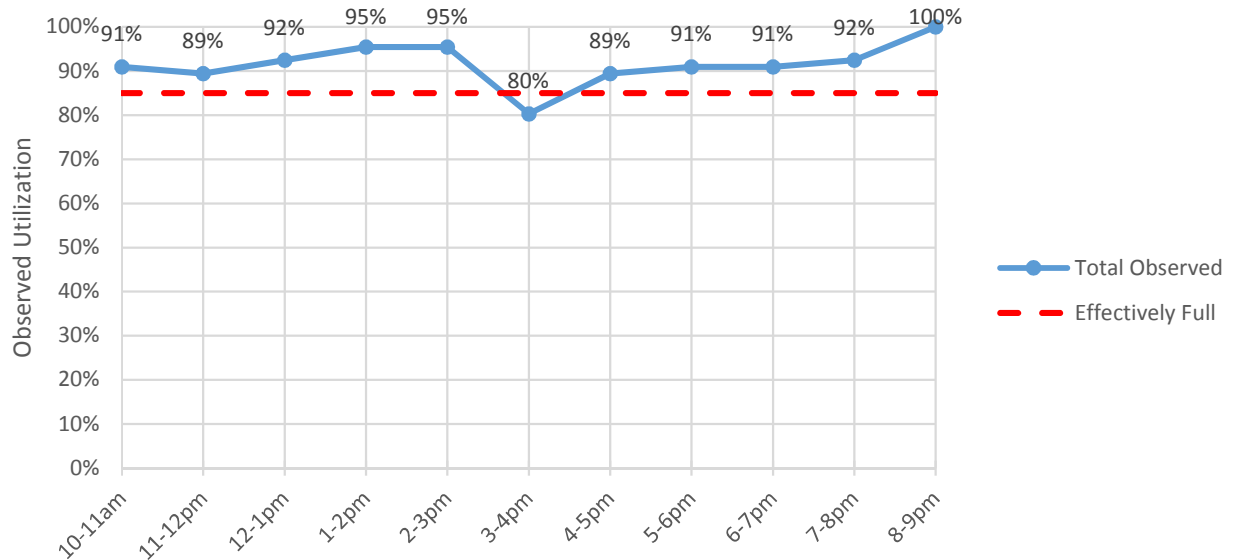


Figure 21: Exchange St Saturday 2-Hour Metered Occupancy

E.4.3 Middle St from Union St to Franklin St

On Thursday, Middle St from Union St to Franklin St was effectively full at 10am, 12pm, 2pm, 3pm and 7pm. On Saturday, this section of Middle St was effectively full between 12pm and 3pm then again from 4pm on.

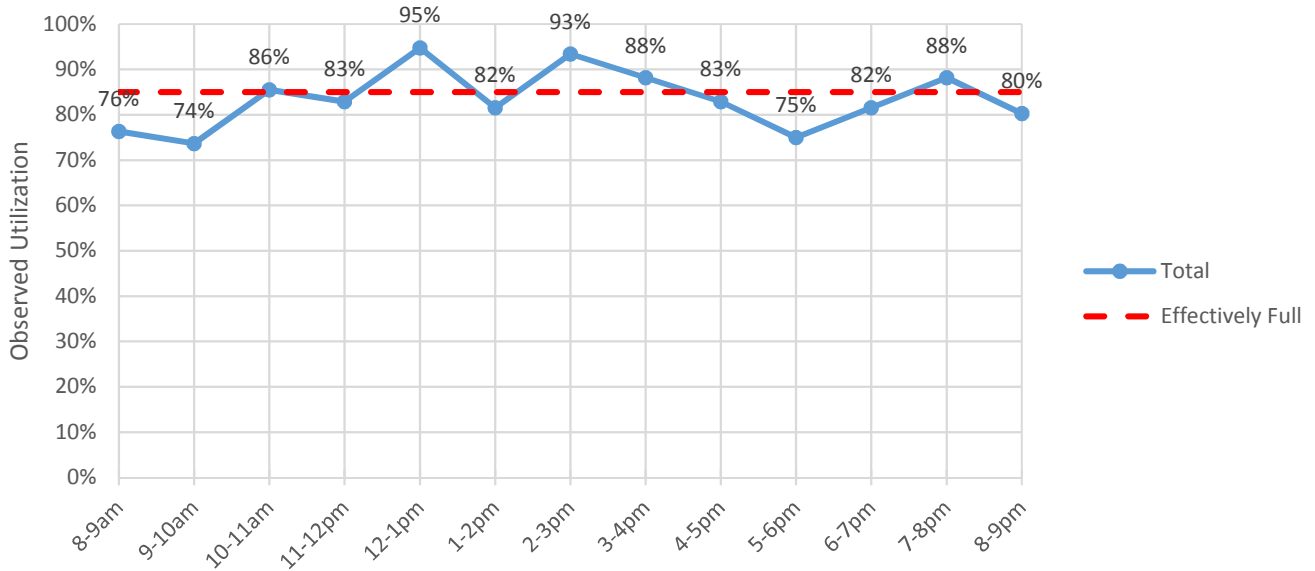


Figure 22: Middle St Thursday 2-Hour Metered Occupancy

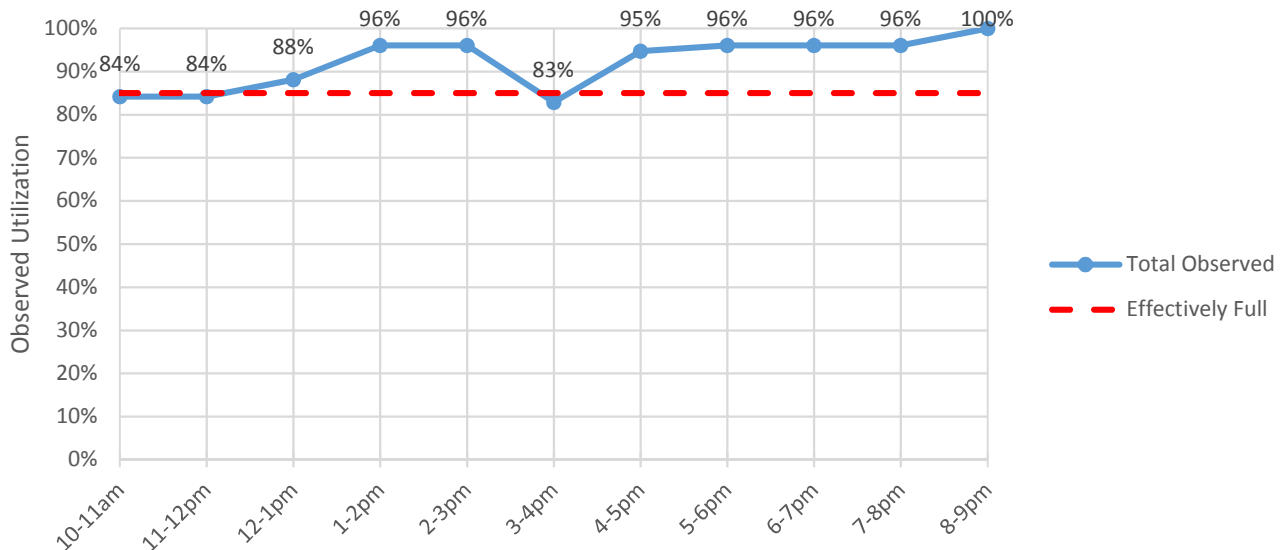


Figure 23: Middle St Saturday 2-Hour Metered Occupancy

E.4.4 Spring St from High St to Union St

On Thursday, Spring St between High St and Union St was the only street sampled that was not effectively full on average during the sample day. On Saturday, this section of Spring St did not become effectively full on average until 7pm.

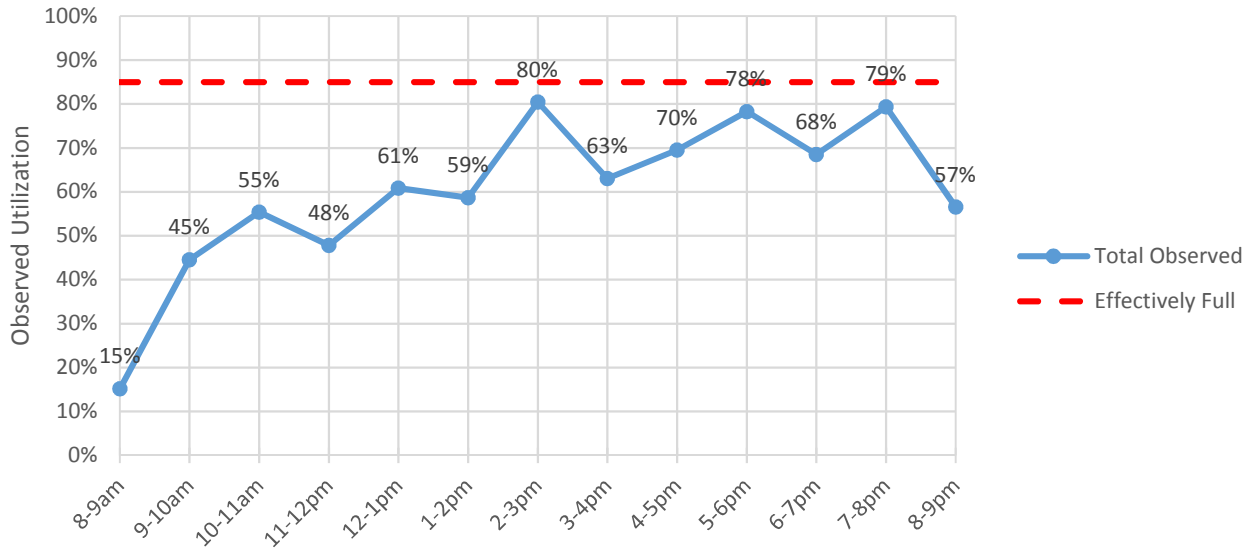


Figure 24: Spring St Thursday 2-Hour Metered Occupancy

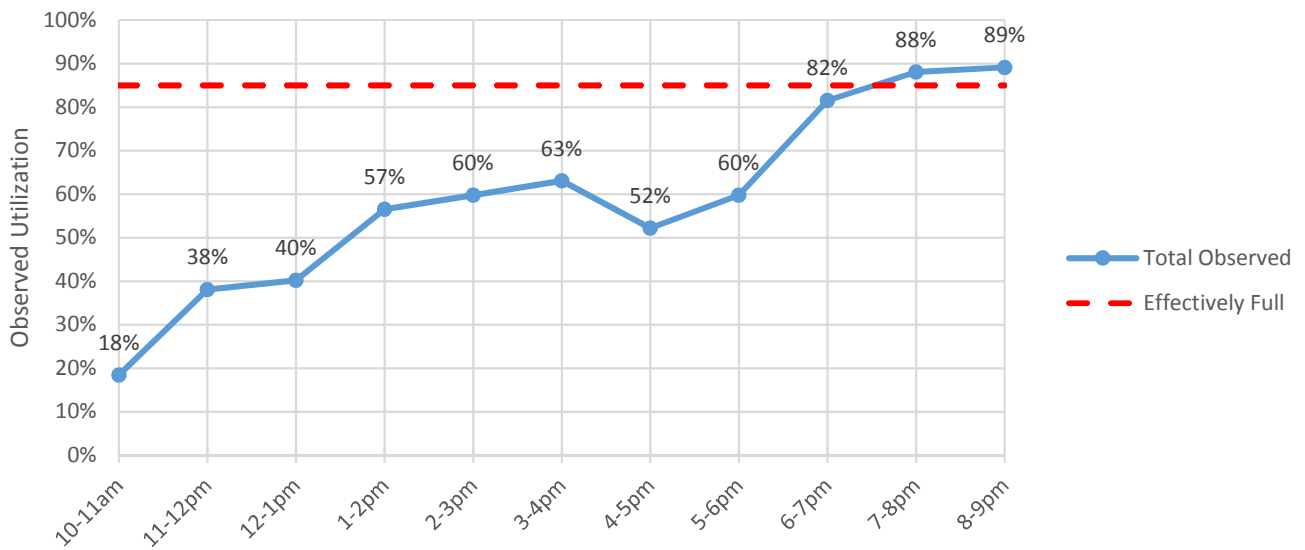


Figure 25: Spring St Saturday 2-Hour Metered Occupancy

E.4.5 Casco St between Cumberland Ave and Congress St

On Thursday, Casco St between Cumberland Ave and Congress St was briefly effectively full at 9am on Thursday, but then fell well below that until 6pm when it became 100% occupied. On Saturday, Casco St was effectively full between 11am on, reaching 100% occupied at 4pm and remaining nearly that high through 8pm.

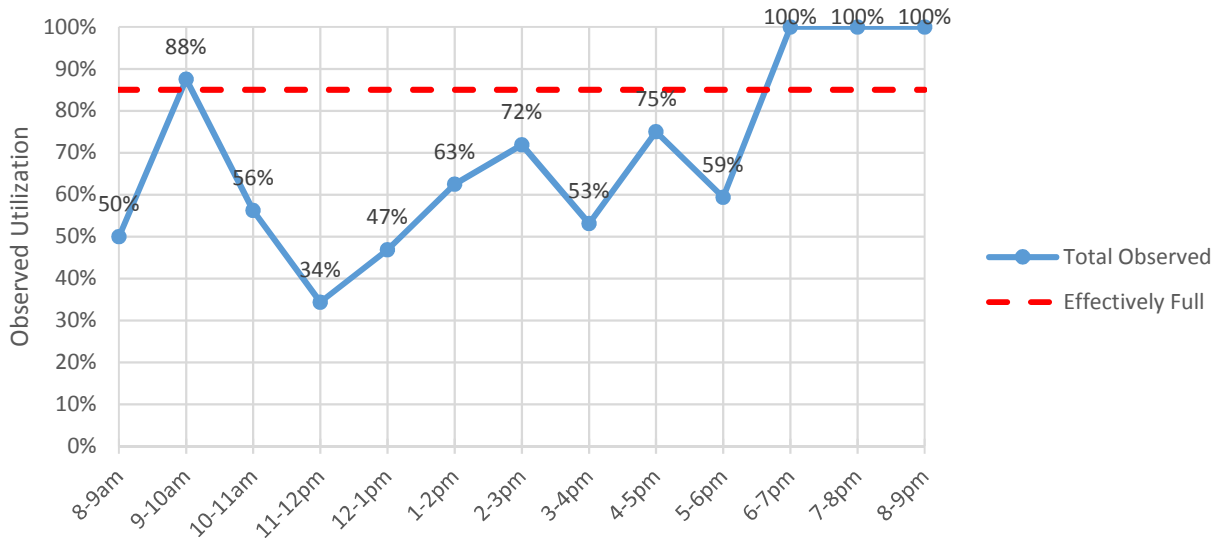


Figure 26: Casco St Thursday 2-Hour Metered Occupancy

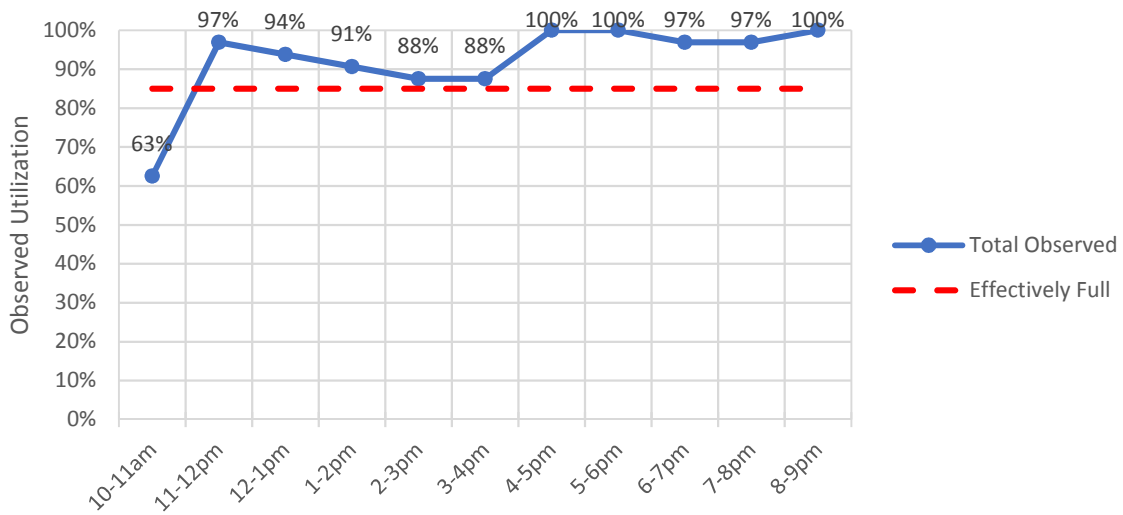


Figure 27: Casco St Saturday 2-Hour Metered Occupancy

E.5 On-Street Parking: Occupancy by Block-Face

In this section, on-street parking occupancy in 2-hour metered zones is shown by block-face.

E.5.1 Thursday 2-Hour Metered Zone Occupancy by Block-Face

Starting with Figure 28 and ending with Figure 34, Thursday parking occupancies in the 2-hour zones at 9am, 11am, 1pm, 3pm, 5pm, 7pm and 8pm are shown respectively.

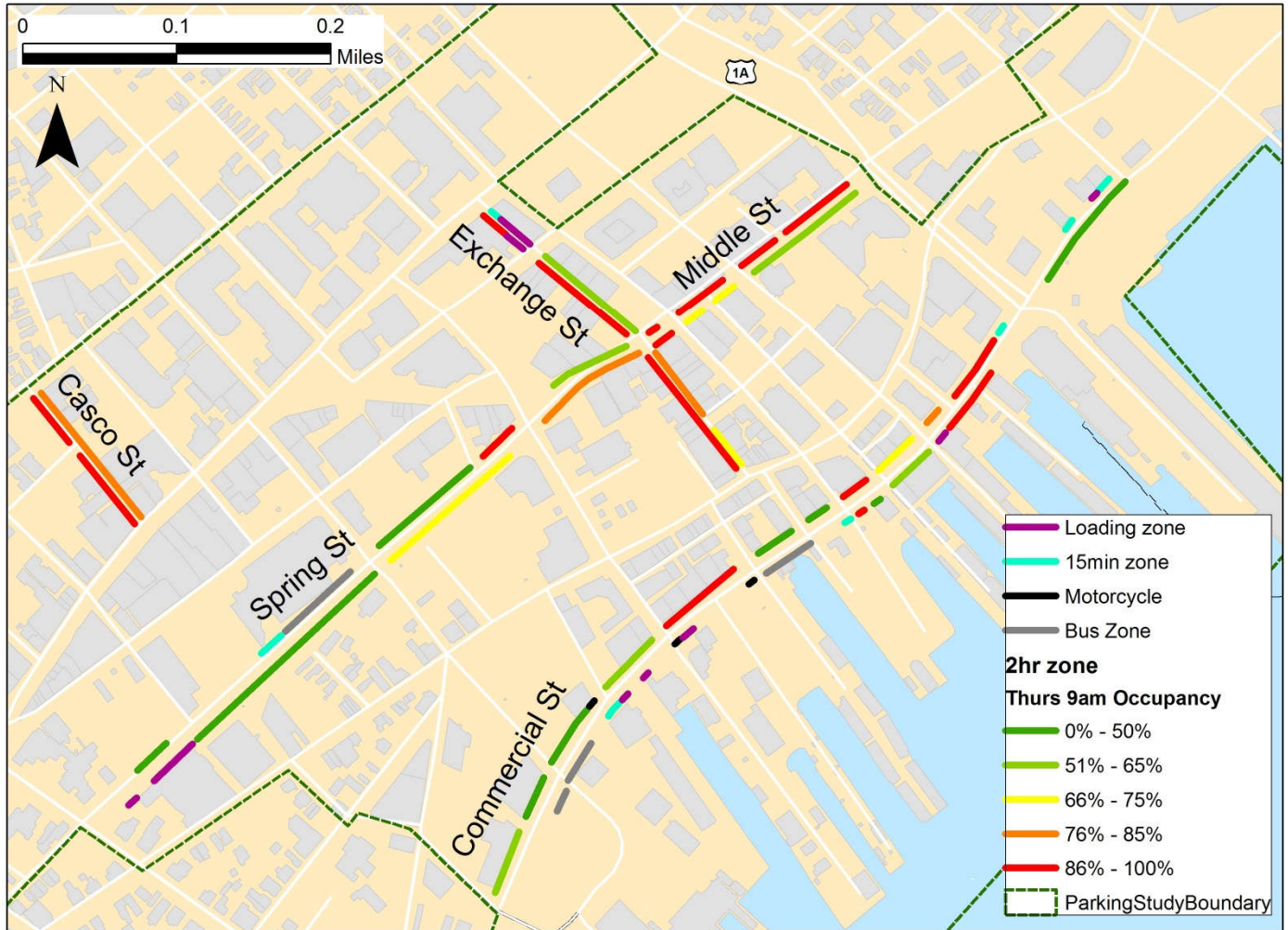


Figure 28: Thursday 9am Parking Occupancy by Block-Face

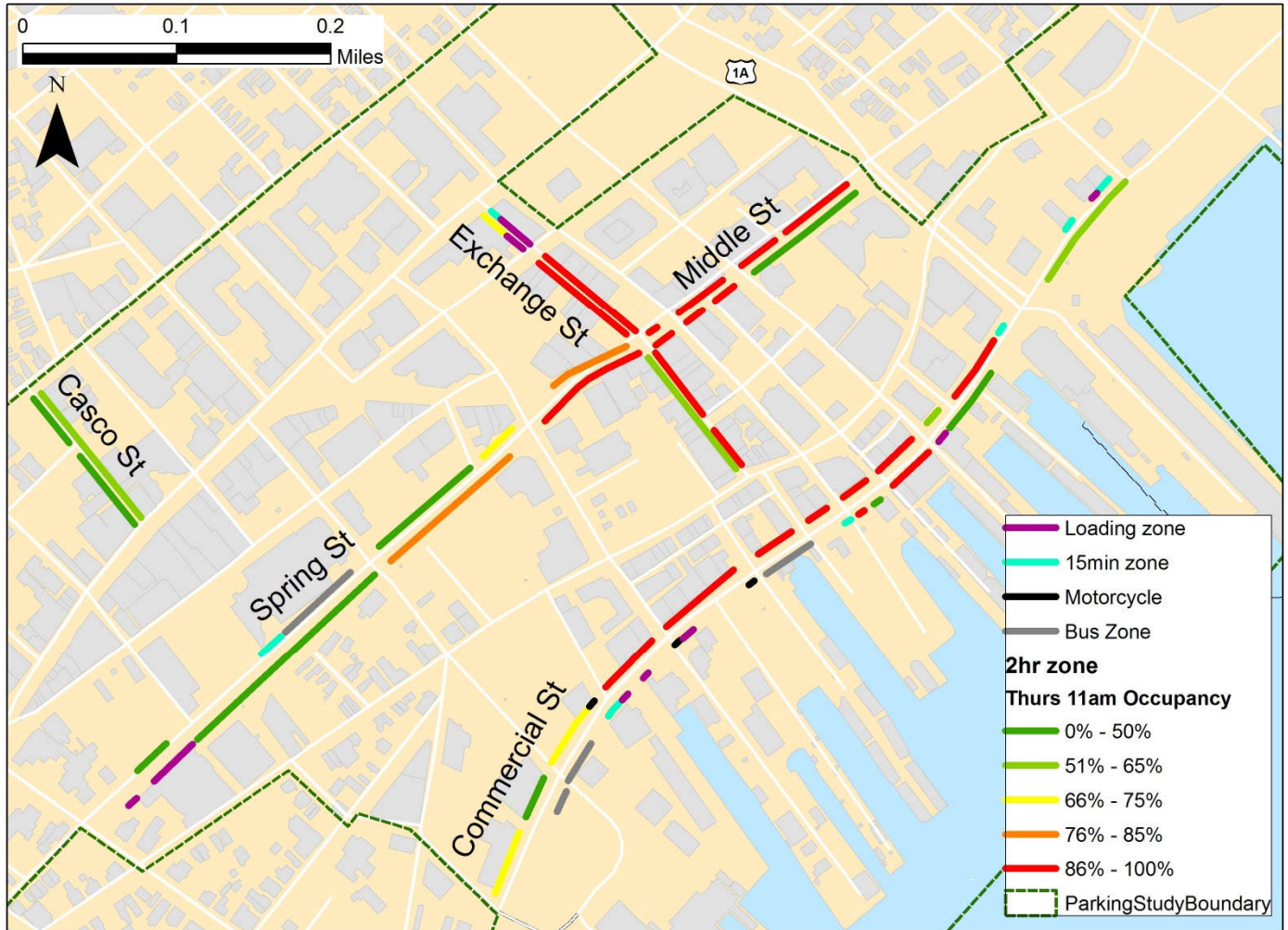


Figure 29: Thursday 11am Parking Occupancy by Block-Face

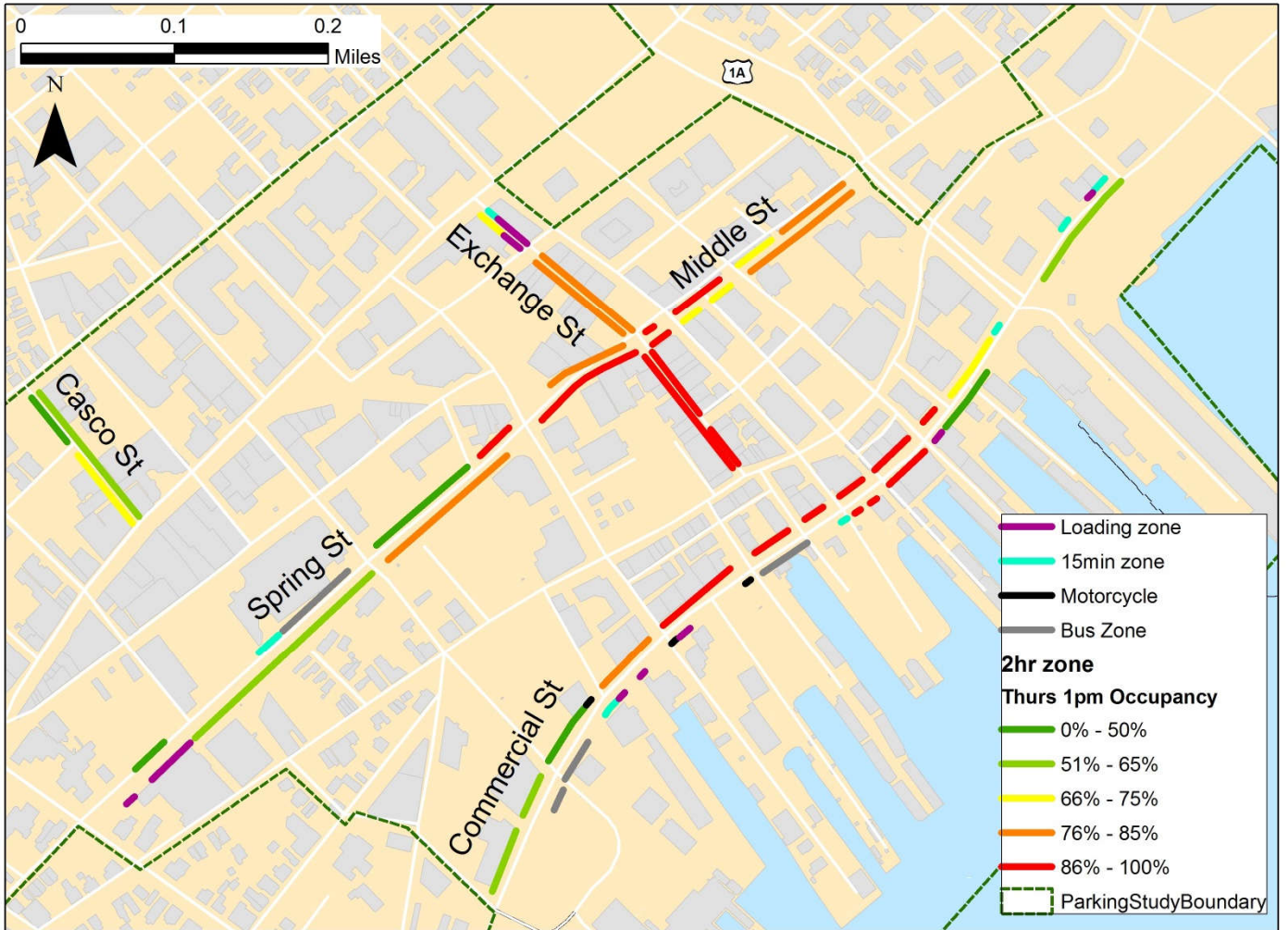


Figure 30: Thursday 1pm Parking Occupancy by Block-Face

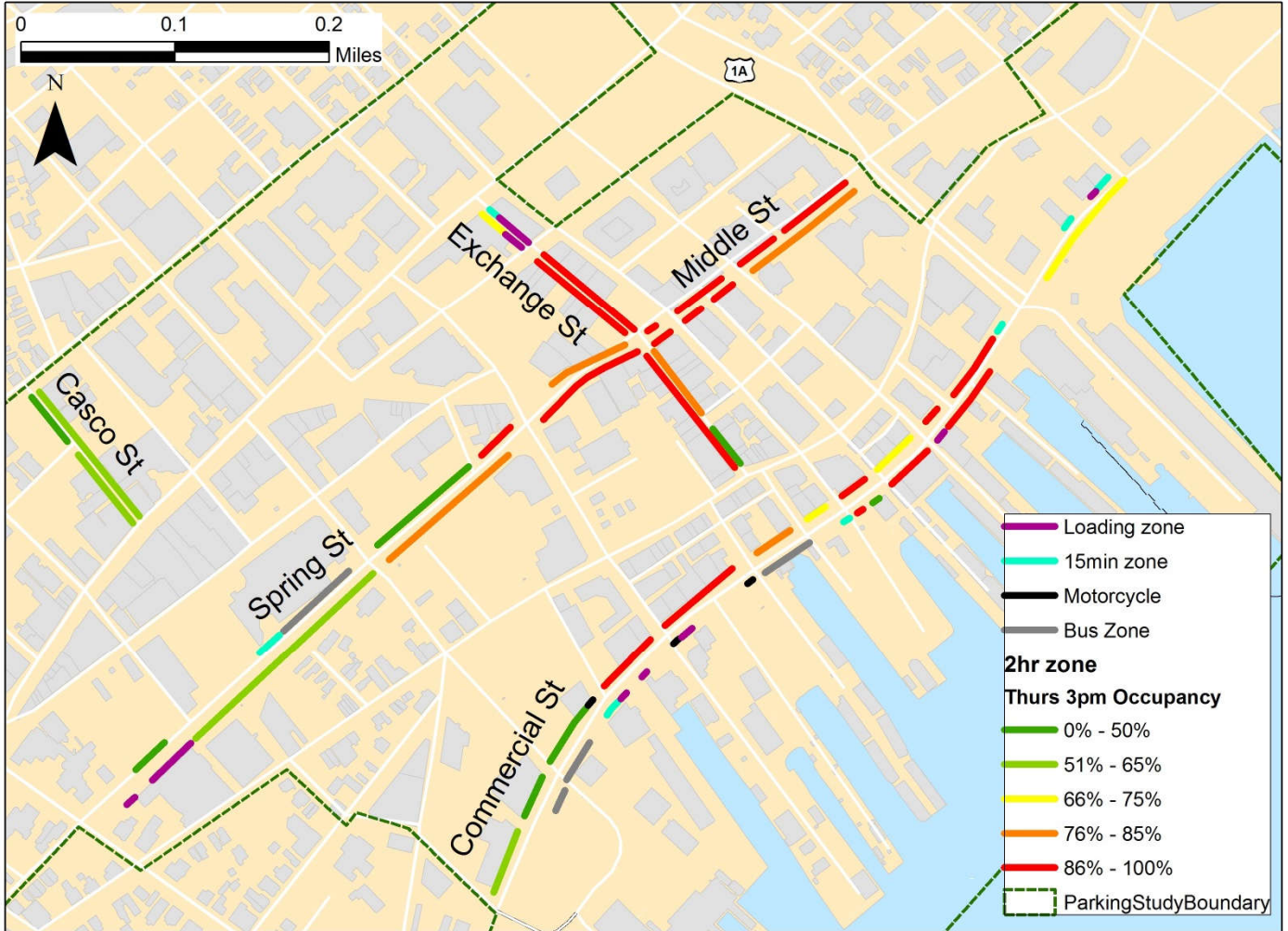


Figure 31: Thursday 3pm Parking Occupancy by Block-Face

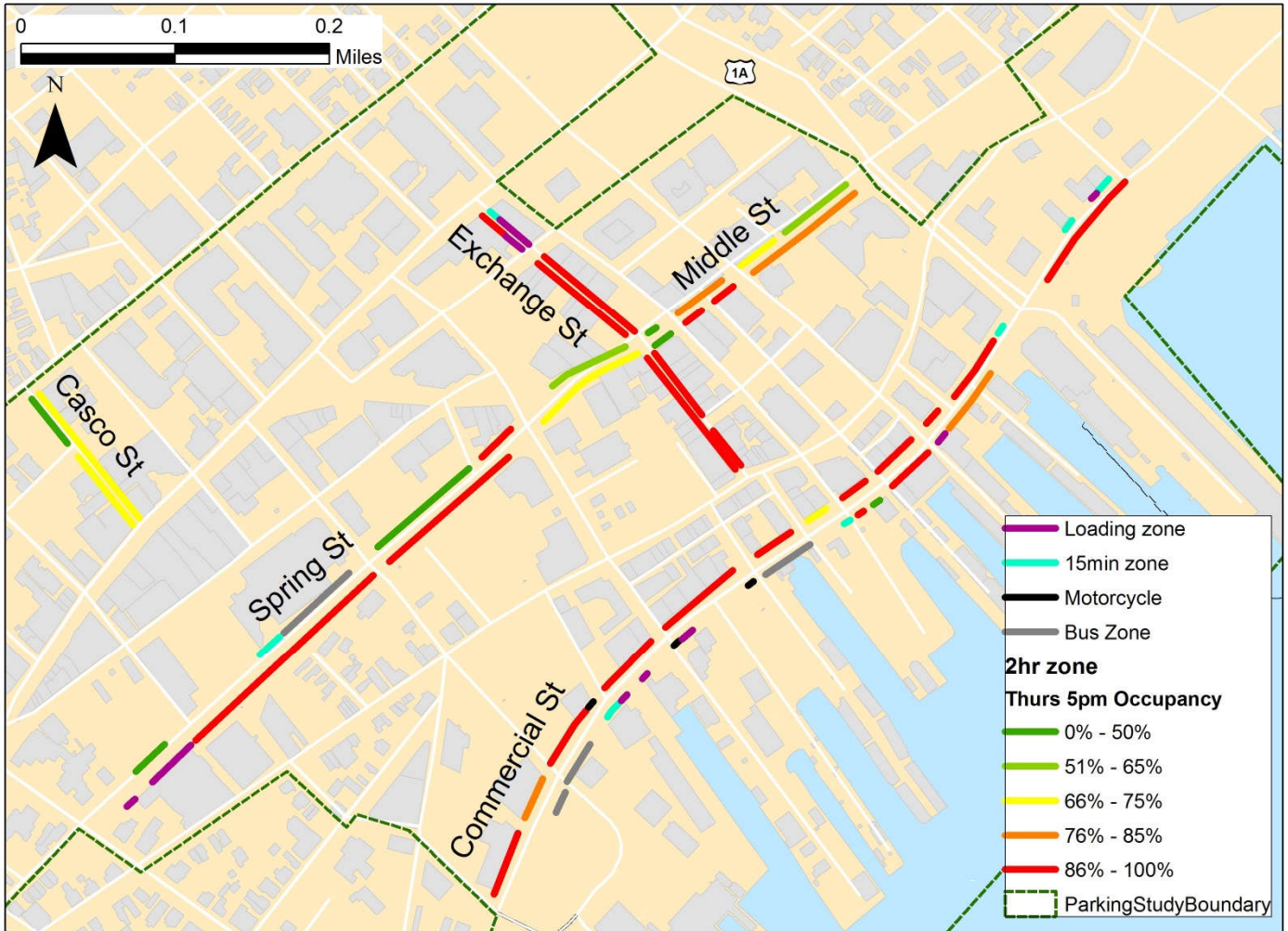


Figure 32: Thursday 5pm Parking Occupancy by Block-Face

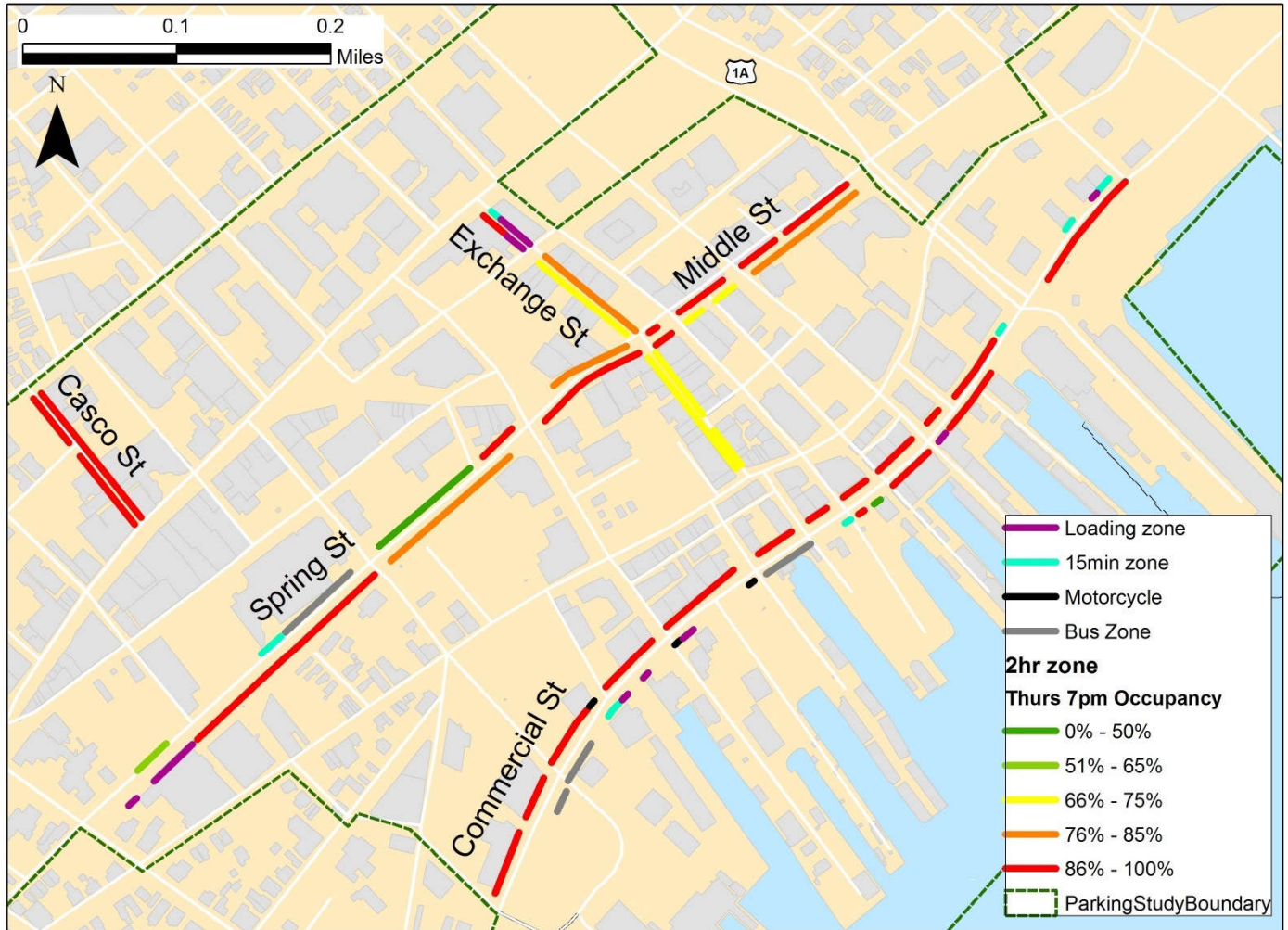


Figure 33: Thursday 7pm Parking Occupancy by Block-Face

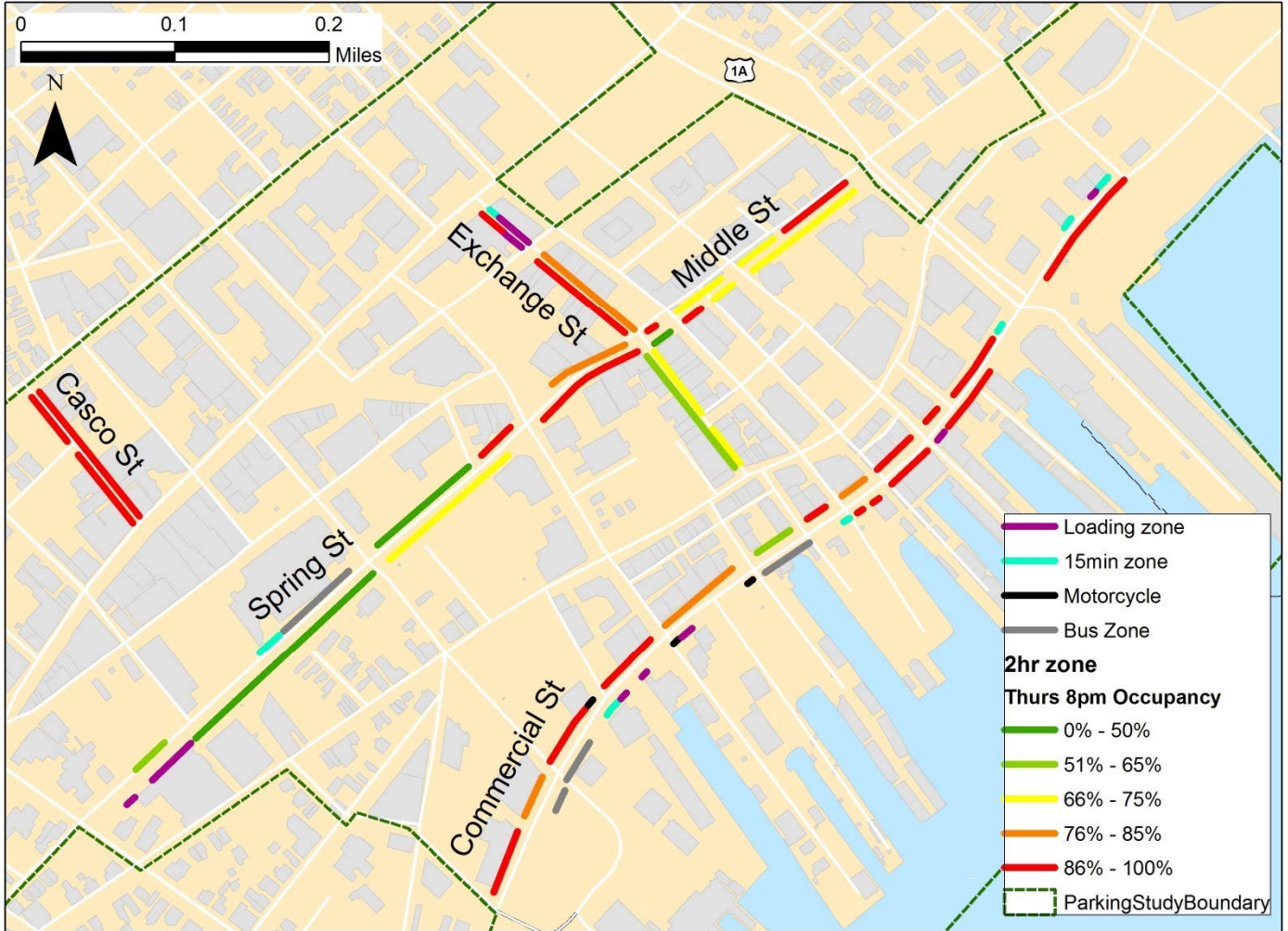


Figure 34: Thursday 8pm Parking Occupancy by Block-Face

E.5.2 Saturday 2-hour Metered Zone Occupancy by Block-Face

Starting with Figure 35 and ending with Figure 40, Saturday parking occupancies at 11am, 1pm, 3pm, 5pm, 7pm and 8pm are shown respectively.

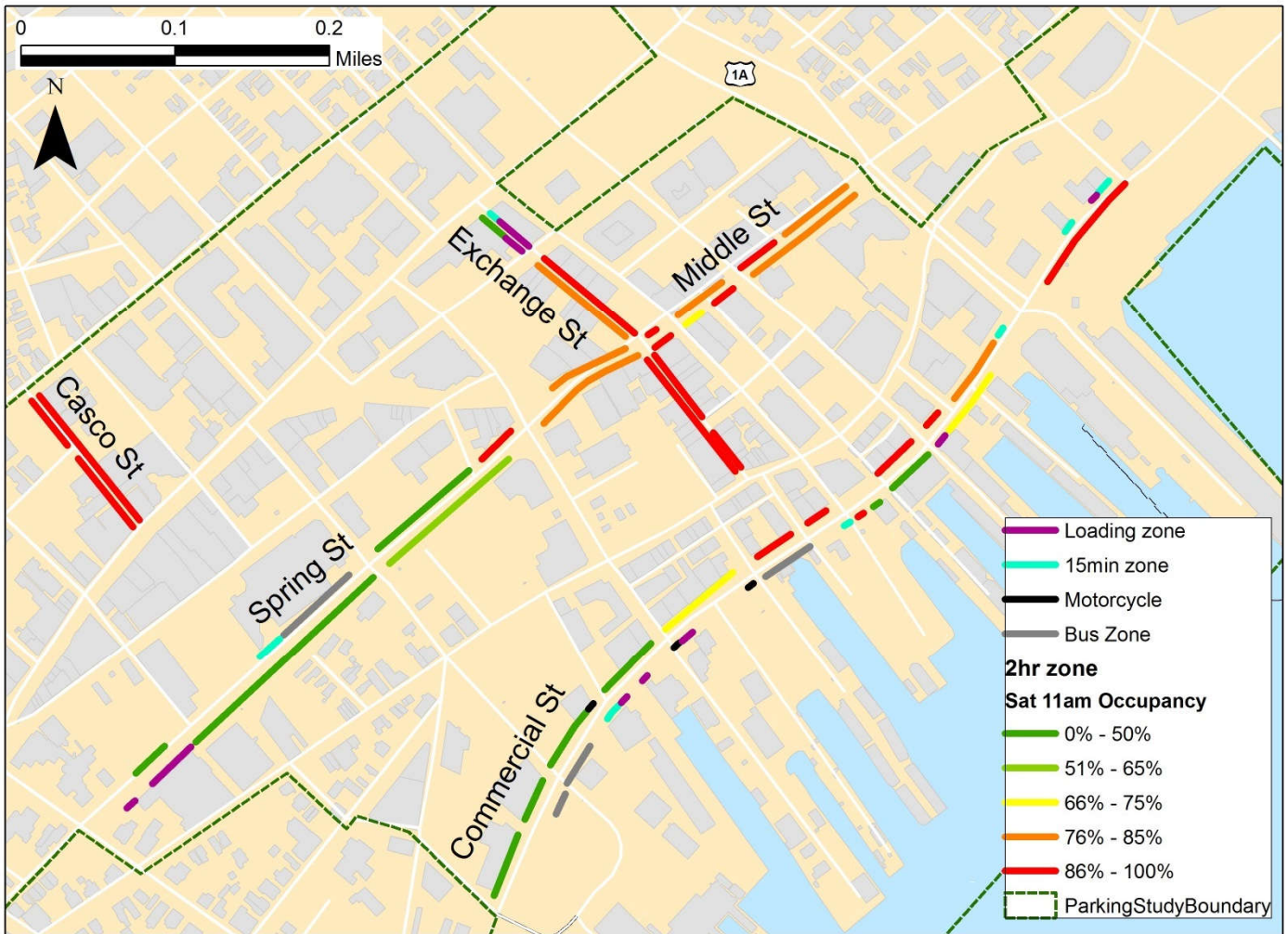


Figure 35: Saturday 11am Parking Occupancy by Block-Face

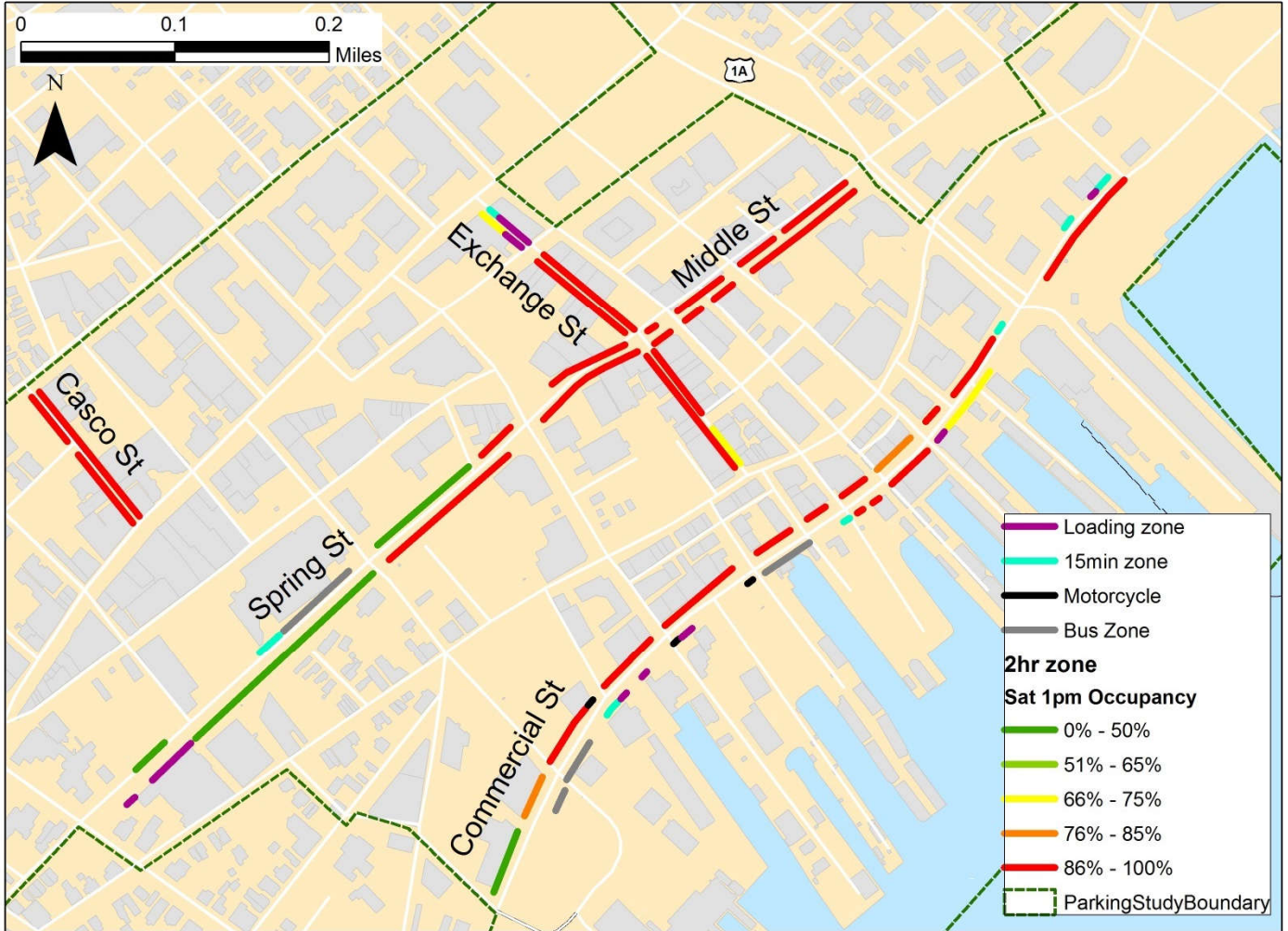


Figure 36: Saturday 1pm Parking Occupancy by Block-Face

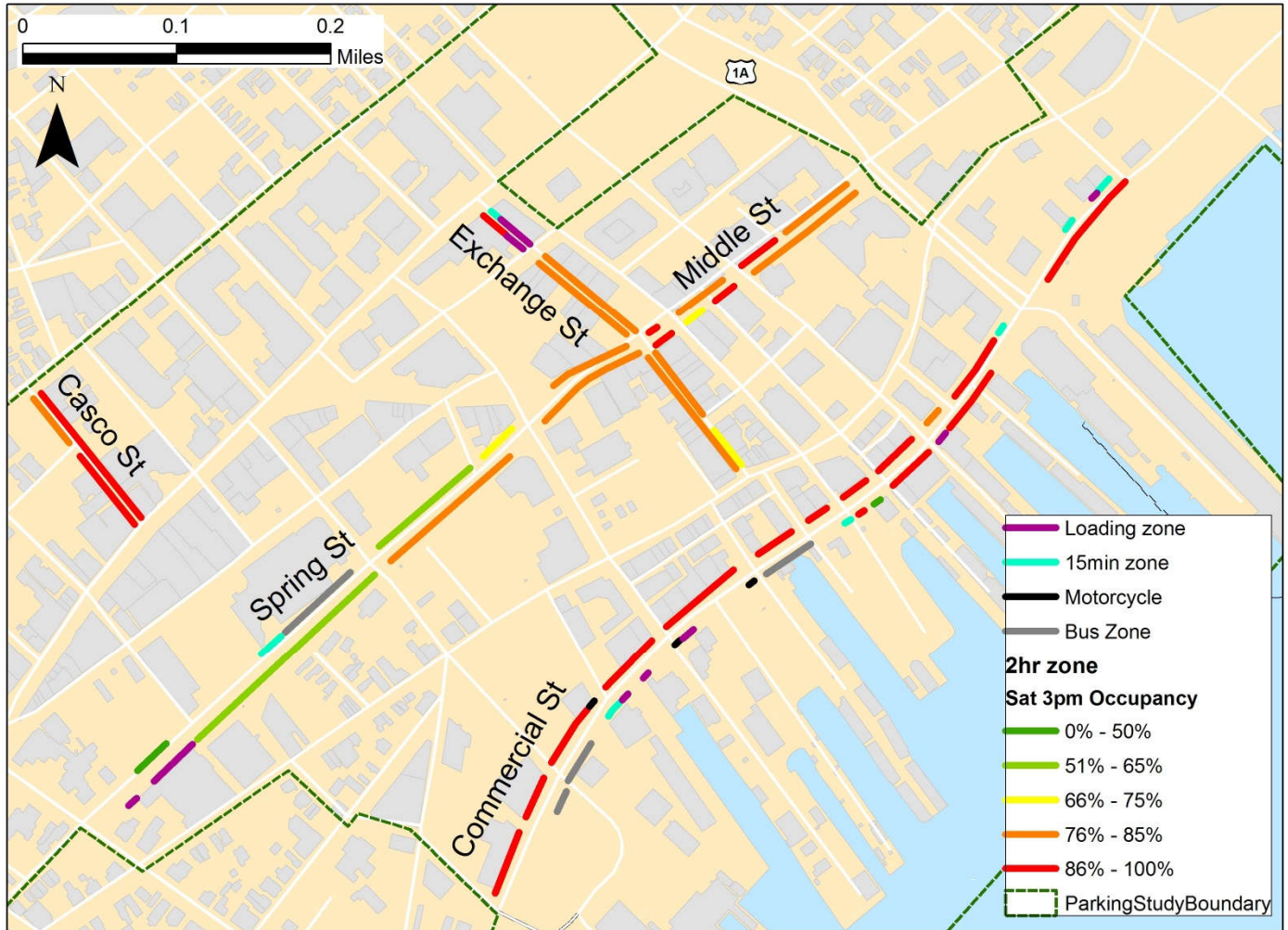


Figure 37: Saturday 3pm Parking Occupancy by Block-Face

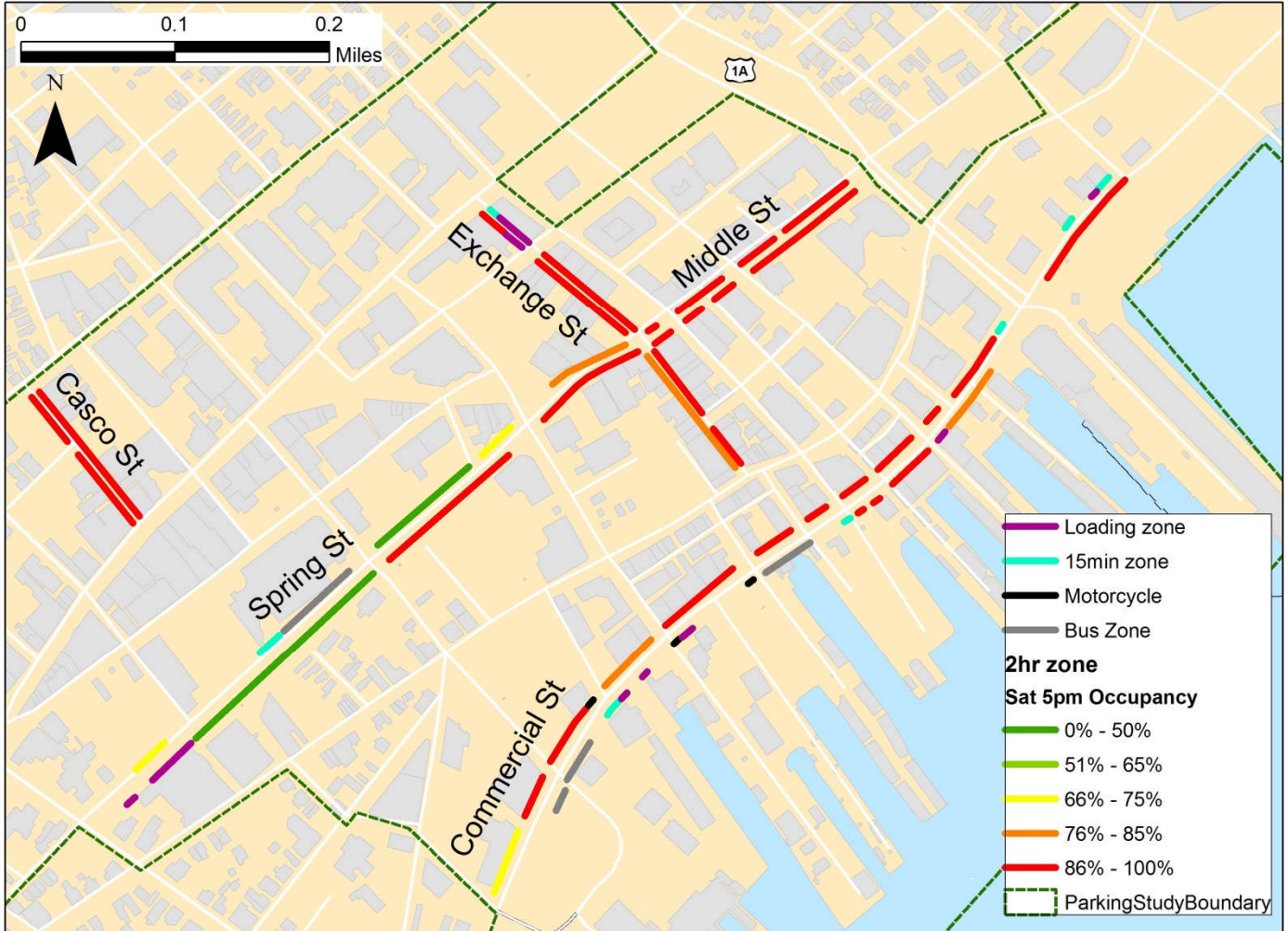


Figure 38: Saturday 5pm Parking Occupancy by Block-Face

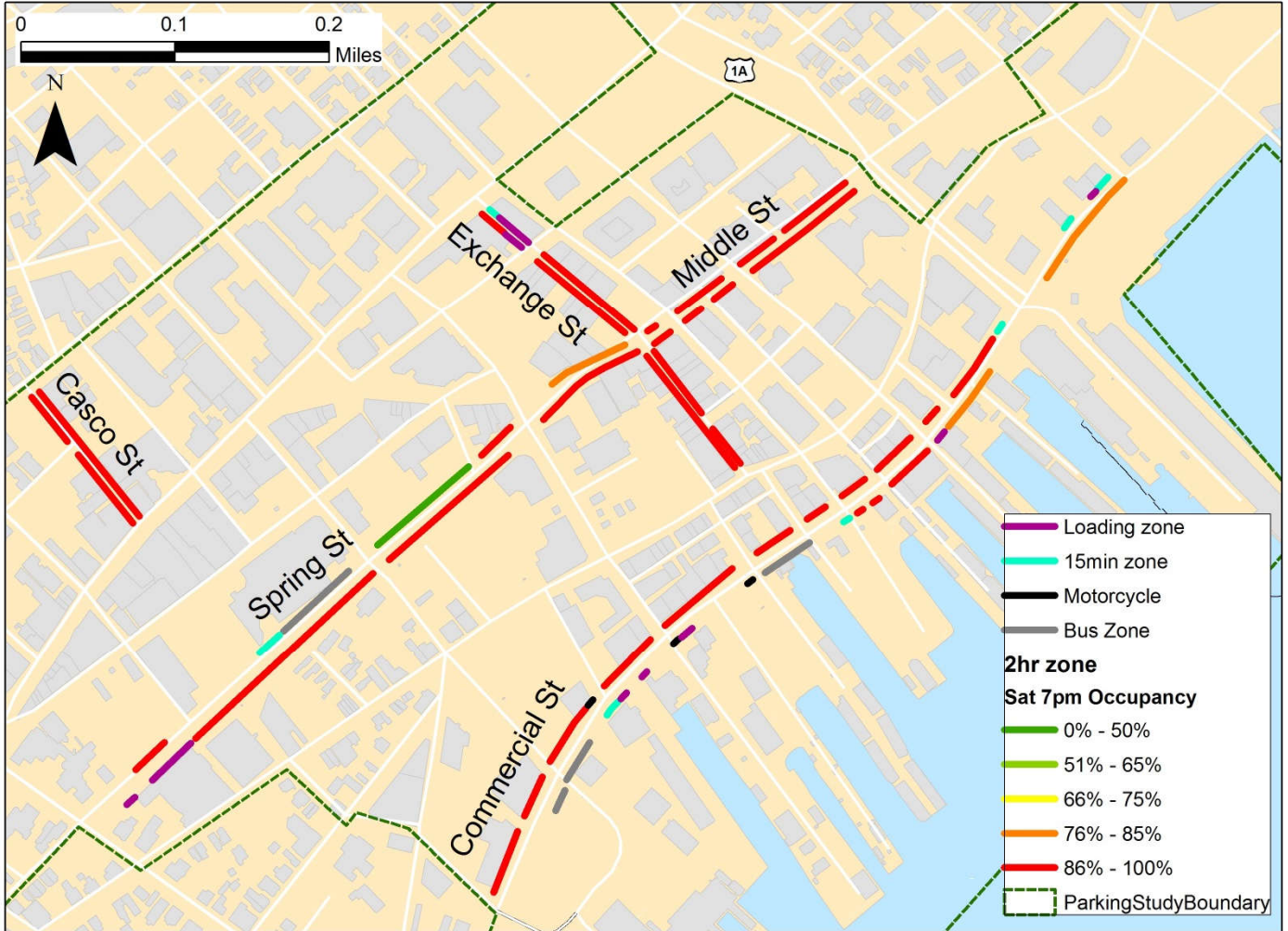


Figure 39: Saturday 7pm Parking Occupancy by Block-Face

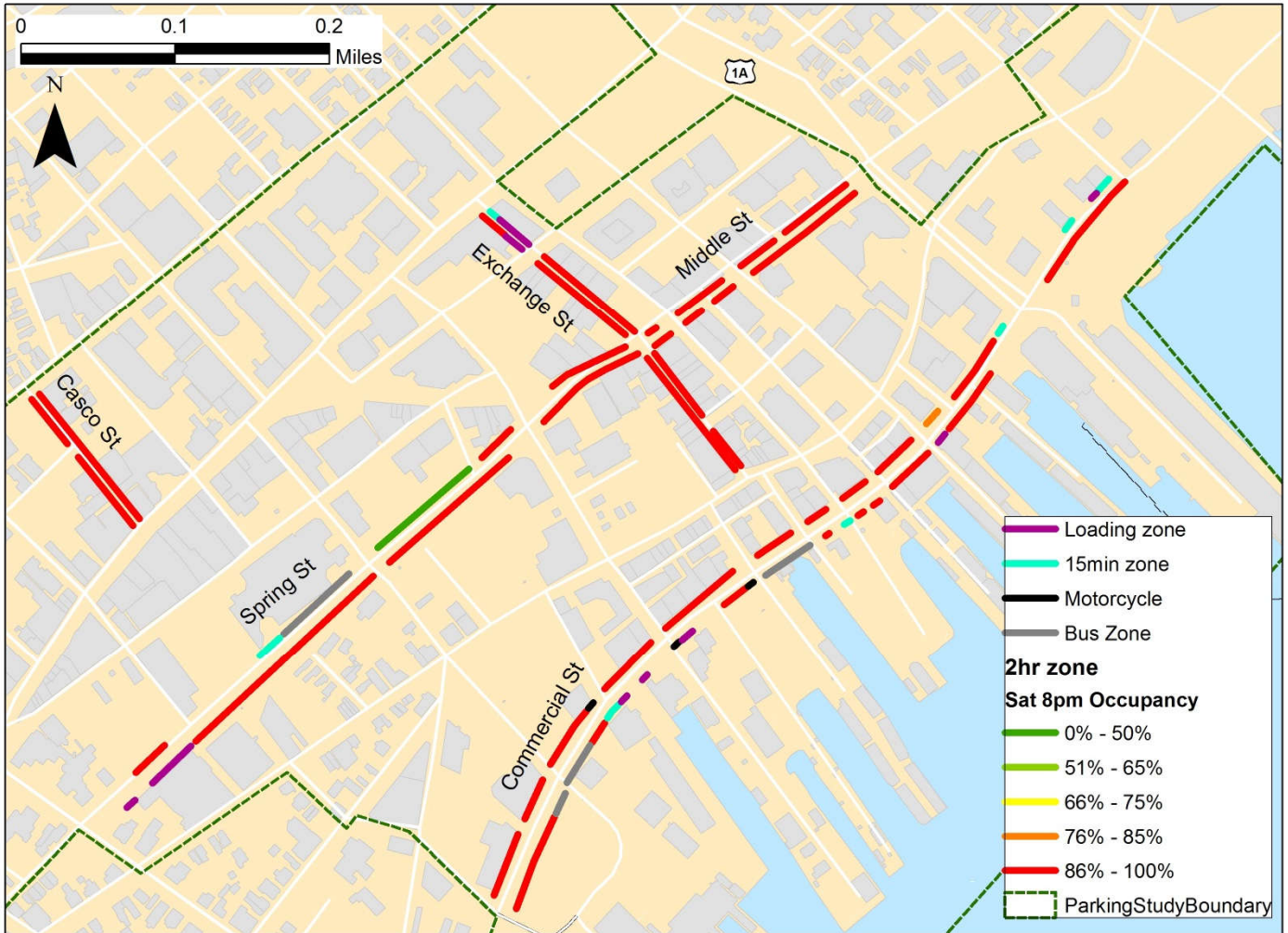


Figure 40: Saturday 8pm Parking Occupancy by Block-Face

E.6 On-Street Parking Duration and Turnover in 2-Hour Metered Zones

Parked vehicle duration and turnover are important metrics to understand parking behavior. When on-street parking occupancy is high, it is more desirable for parking turnover to also be high so that users have a greater chance of finding an open space. When the observed data for this study was collected, in December of 2016, the City of Portland's on-street meter fee was \$1 per hour for 2-hour limited zones. The hourly fee and time limit aim to facilitate parking turnover between 9am and 6pm Monday through Saturday.

Average on-street parking duration and turnover by block face was calculated between 8am and 6pm for Thursday and Saturday using observed partially recorded license plate data. Because the observation intervals were 1 hour apart, an assumption had to be made about observed vehicle duration. If a vehicle was observed only once on a block-face it was assigned a duration of 0.5 hours. A vehicle that was observed for exactly two count intervals on a block-face was assigned a duration of 1.5 hours. Exactly 3 observations and the vehicle was assigned a duration of 2.5 hours, and so on. The average parked vehicle duration for each block face was calculated using the formula

$$D = \frac{\sum_x (N_x \cdot X \cdot I)}{N_T}$$

Where D = average parking duration, h/veh;
 N_x = number of vehicles parked for x intervals;
 X = number of intervals parked;
 I = length of the observation interval, h;
 N_T = total number of parked vehicles observed.

The average turnover rate for parked vehicles follows as the inverse of average duration. In Figure 41 and Figure 42, the average parked vehicle durations by block-face are shown for the Thursday and Saturday samples.

The results show that on both Thursday and Saturday, the block-faces on Exchange St and Middle St had a lower parked vehicle duration and higher turnover rate compared to Casco St and Spring St. This is a positive sign given that Exchange and Middle St had some of the highest rates of parking occupancy.

Commercial St shows more of a range of parking durations by block-face which tended to be 1 to 2 hours closer to the center of the Old Port on Thursday while block faces west of Cross St (north side of the street) and east of Franklin St had an average parking duration under 1 hour. On Saturday, average durations on Commercial St tended to be higher, between 1 and 2 hours on the north side of the street throughout.

There is one block-face on Commercial St west of Center St (south side of the street) that had unrestricted angled parking on the observation days. The unrestricted parking was also observed in an adjacent bus loading zone to this block-face, presumably because it was not bus tourist season. This was the location of the longest on-street parking duration observed in the study area. On Thursday, this block-face had an average parking duration of just over 5 hours per vehicle between 8am and 6pm which is a turnover rate of less than 0.2 vehicles per hour. On Saturday, the duration was just over 2.5 hours per vehicle, a turnover rate of 0.4 vehicles per hour. This example illustrates how the metered and time limited block-faces maintain a higher turnover rate compared to unrestricted and free on-street parking.

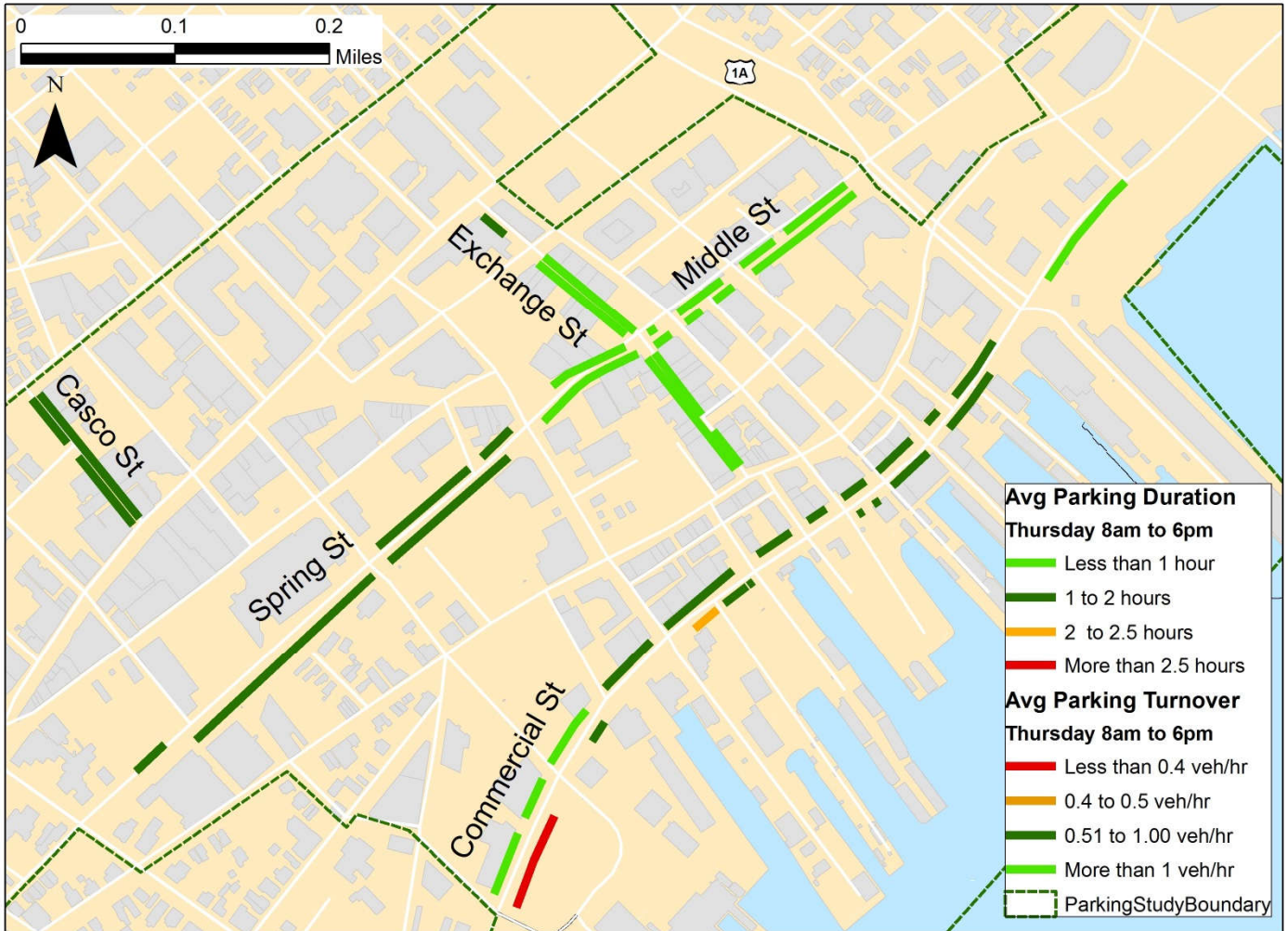


Figure 41: Thursday Average Duration and Turnover in 2-Hour Metered Zones 8am-6pm

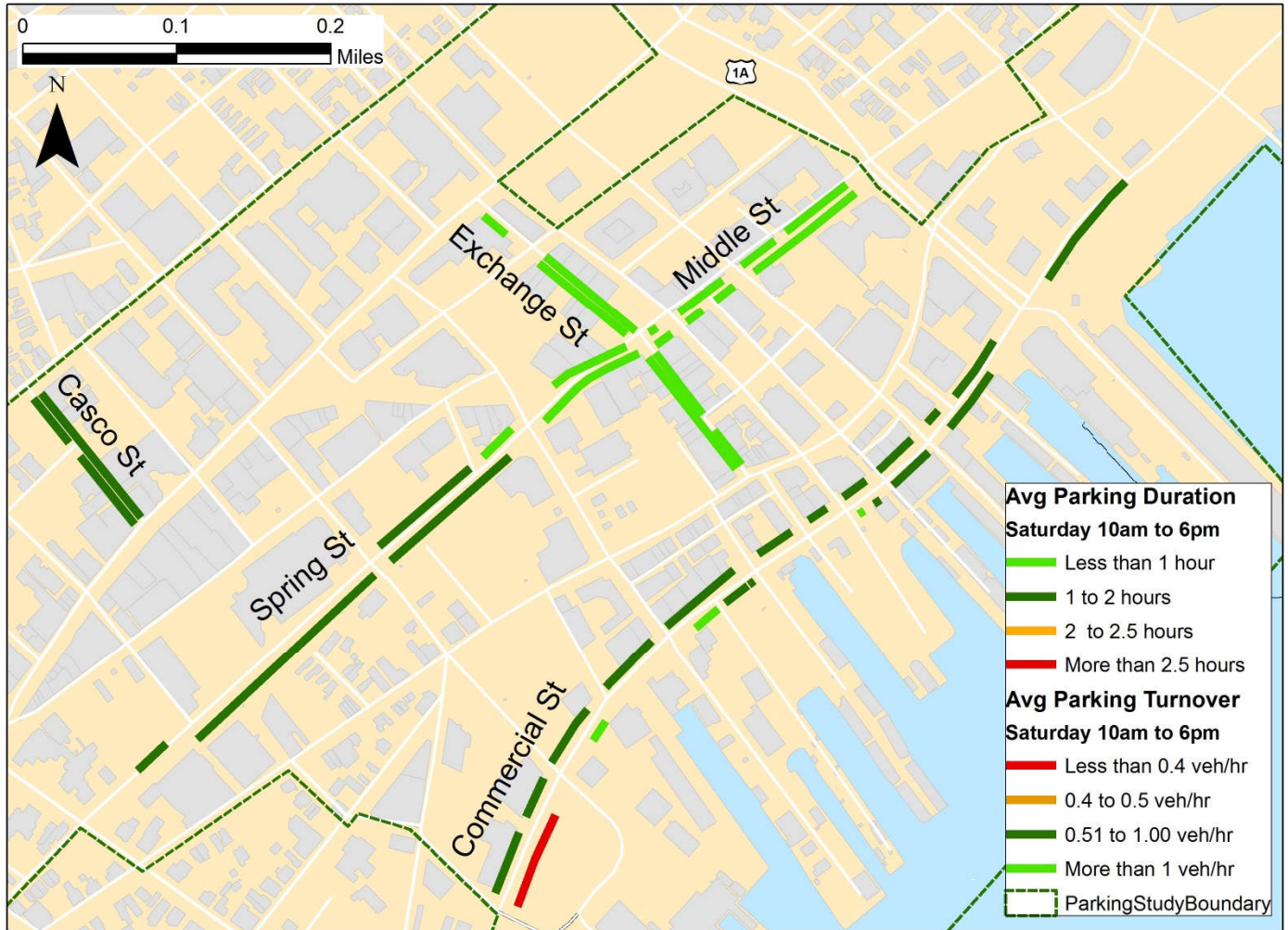


Figure 42: Saturday Average Duration and Turnover in 2-Hour Metered Zones 10am-6pm

F. Summary of Observed Parking Results

In this section, the observed occupancy rates from the structured, surface lot, and on-street samples are projected onto the total parking supply in each respective category to estimate the total number of occupied spaces between 8am and 8pm. The results presented in this section have not yet been adjusted for seasonality. Table 26 summarizes the Thursday observed occupancy rates by hour.

Figure 43 displays the projected parking occupancy in the study area based on the Thursday, December 1st observations. Private use only structured parking is displayed as 100 percent occupied since the spaces are reserved and are not resold to the transient public even when vacant. The effectively full level of vehicles for the study area represents the capacity when the surface lots and structured parking are 90 percent occupied and the on-street supply is at 85 percent occupied. The Thursday peak occurred at 12pm when an estimated 11,560 spaces were occupied leaving about 2,450 vacant spaces below the effective capacity of 14,011 spaces.

Table 26: Thursday Observed Occupancies and Projected Total Spaces Occupied

Observation Period	Surface Lots		On-Street		Public Use Structured		Private Structured
	Observed Occupancy	Projected Spaces Occupied	Observed Occupancy	Projected Spaces Occupied	Observed Occupancy	Projected Spaces Occupied	Reserved
8am	46.3%	2,970	54.5%	1,230	60.1%	3,790	705
9am	*	3,645	63.9%	1,440	67.5%	4,260	705
10am	67.4%	4,320	71.9%	1,620	69.5%	4,390	705
11am	*	4,450	73.2%	1,650	70.0%	4,420	705
12pm	71.5%	4,580	79.2%	1,780	70.9%	4,470	705
1pm	*	4,545	74.8%	1,680	70.6%	4,450	705
2pm	70.4%	4,510	80.3%	1,810	67.9%	4,290	705
3pm	*	4,170	75.7%	1,700	60.7%	3,830	705
4pm	59.8%	3,830	82.4%	1,850	45.8%	2,890	705
5pm	*	3,020	84.3%	1,900	29.2%	1,840	705
6pm	34.4%	2,210	84.0%	1,890	24.3%	1,530	705
7pm	*	1,720	87.1%	1,960	21.2%	1,330	705
8pm	19.2%	1,230	78.6%	1,770	18.7%	1,180	705

*Interpolated Estimate

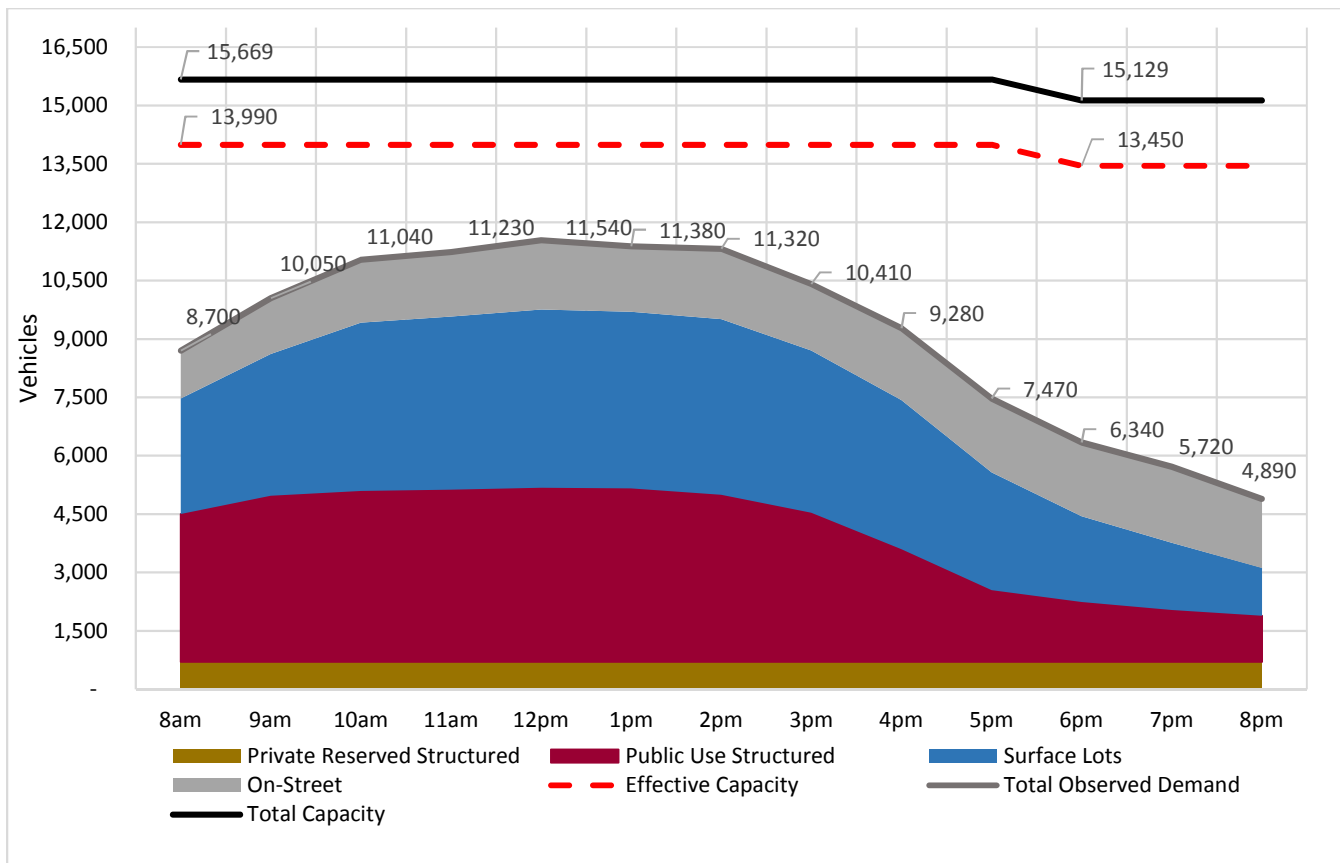


Figure 43: Thursday Projected Total Occupancy in the Study Area Based on the December 1st Sample

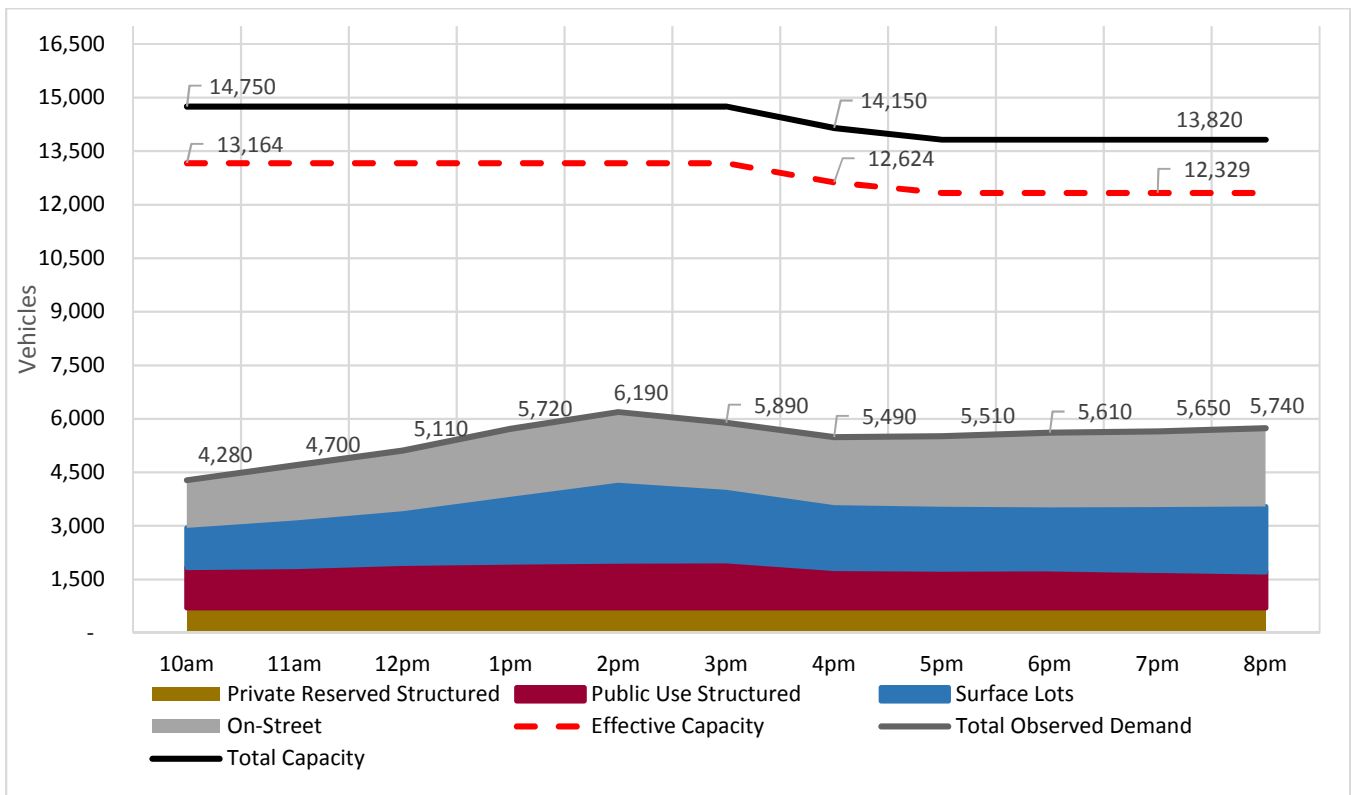
Table 27 summarizes the Saturday observed occupancy rates by hour. Figure 44 displays the projected parking occupancy in the study area based on the Saturday, December 3rd observations.

Table 27: Saturday Observed Occupancies and Projected Total Spaces Occupied

Observation Period	Surface Lots		On-Street		Public Use Structured		Private Structured
	Observed Occupancy	Projected Spaces Occupied	Observed Occupancy	Projected Spaces Occupied	Observed Occupancy	Projected Spaces Occupied	Reserved
10am	19.1%	1,110	58.9%	1,330	19.0%	1,130	705
11am	*	1,280	69.0%	1,550	19.5%	1,160	705
12pm	24.8%	1,450	75.5%	1,700	20.9%	1,250	705
1pm	*	1,820	84.3%	1,900	21.6%	1,290	705
2pm	37.5%	2,190	88.1%	1,980	22.0%	1,310	705
3pm	*	1,980	83.6%	1,880	22.0%	1,320	705
4pm	30.3%	1,760	84.9%	1,910	20.7%	1,110	705
5pm	*	1,740	87.4%	1,970	21.6%	1,090	705
6pm	29.3%	1,710	92.9%	2,090	21.8%	1,100	705
7pm	*	1,770	94.1%	2,120	20.8%	1,050	705
8pm	31.4%	1,830	97.5%	2,190	20.1%	1,010	705

*Interpolated Estimate

Figure 44: Saturday Projected Total Occupancy in the Study Area Based on the December 3rd Sample



Projected results from the observed Saturday had a peak of approx. 6,200 parked vehicles at 2pm leaving about 7,300 vacant spaces before the effective capacity of 13,525 is reached.

Looking in more detail at the distribution of the observed vacant space, the next two figures show how many vacant spaces remained before the effectively full level was reached in each subarea zone at the peak hour. In Figure 45, we see that during the peak hour of 12pm on the observed weekday, Subarea Zone 1 had the highest number of vacant spaces particularly on-street spaces and structured spaces. On-Street spaces in Subarea Zones 2 and 4 were above 85 percent occupied during the peak hour, therefore no on-street vacancy is shown for those zones. Subarea Zone 7, the Eastern Waterfront had the most vacancy in surface lots at the peak hour.

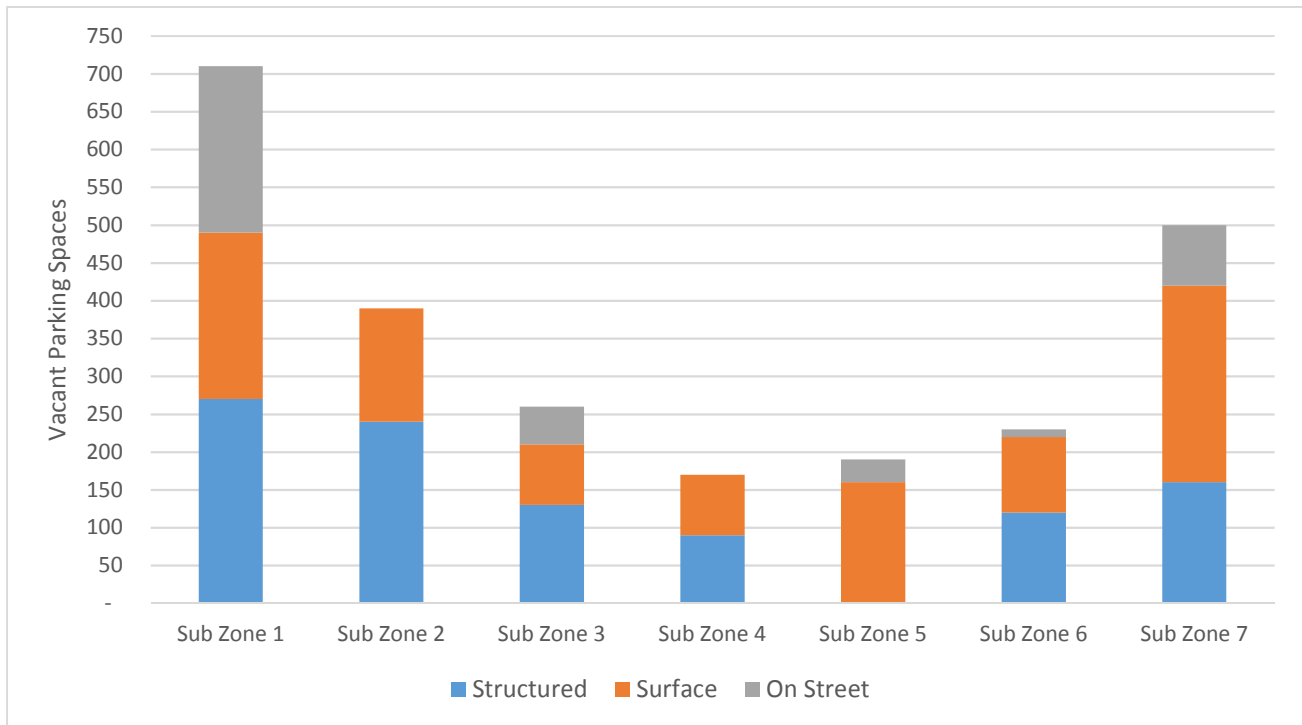


Figure 45: The Number of Vacant Spaces Until Effectively Full on Thursday at 12pm by Subarea

It is likely that not all of the observed vacant spaces were available for use depending on off-street parking management. While garages use a computer to minimize vacant space that must be held for absent monthly customers, some surface lots that are operated more manually may hold more vacant space open for absent monthly customers, although holding more vacant monthly spaces open than necessary is not in an operator’s best interest.

During the observed peak hour on Saturday, there were many more overall vacant spaces observed due to higher vacancies in structured and surface lot parking. However, the peak hour on Saturday had far fewer vacant on-street spaces before the effectively full level of 85 percent occupancy. The only subarea that had less vacancy during the Saturday peak hour compared to the Thursday peak hour was Subarea Zone 6 surrounding the Ferry Terminal on the Waterfront.

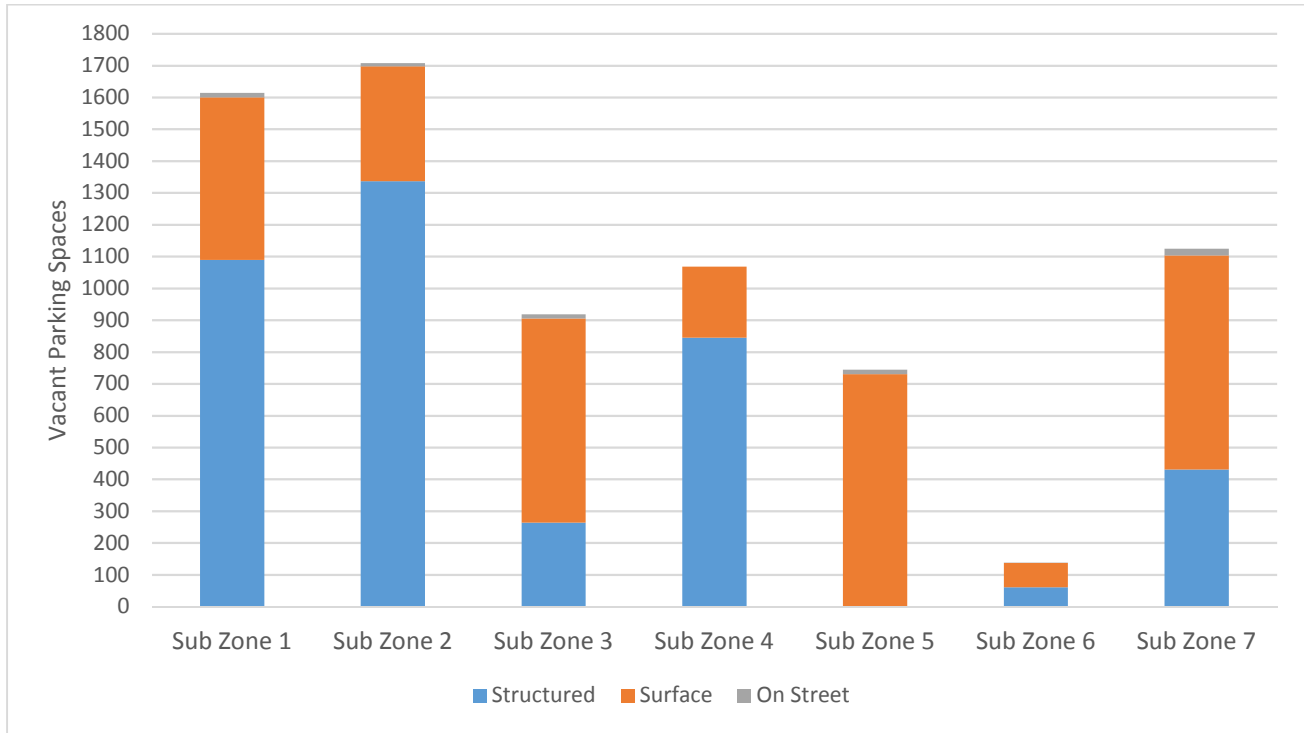


Figure 46: The Number of Vacant Spaces Until Effectively Full on Saturday at 2pm by Subarea

The vacant space charts are useful to understand where additional transient parking demand during the peak season might be accommodated within the study area.

G. Seasonal Analysis

In this section, the observed parking demand data is compared to annual parking demand curves at two sample garage locations to determine if the sampled days in December were a good representation of recurring regional demand, parking demand from seasonal variation in island ferry ridership is analyzed, and additional parking demand from higher levels of day visitors and overnight visitors during the summer season is estimated using data from the Maine Office of Tourism.

G.1 Recurring Regional Demand

Because the data collection occurred in December, it is important to look at the results in the context of parking demand from other times during the year. Data on customer entrance and exit volumes annually is not usually disclosed by private parking operators because the information is related to revenue. Data from the two publicly operated garages in the study area, Elm St and Spring St, are analyzed here to put the observed results from the December sample days into an annual context. Based on the location of the Elm St and Spring St garages, both are located in the north-west quadrant of the study area, it is likely that annual demand patterns at these garages are better indicators of recurring employment, retail, arena event, and restaurant related parking demand, rather than seasonal demand related to waterfront tourism and ferry passenger activity.

Data from the year prior to this study at the Elm St and Spring St garages were obtained. Figure 47 shows the December 1st daily parking demand with other Thursday demand levels during the year at the Elm St garage. The December 1, 2016 daily demand fell at the 81st percentile of Thursdays, well above the median (50th percentile) peak demand for Thursday.

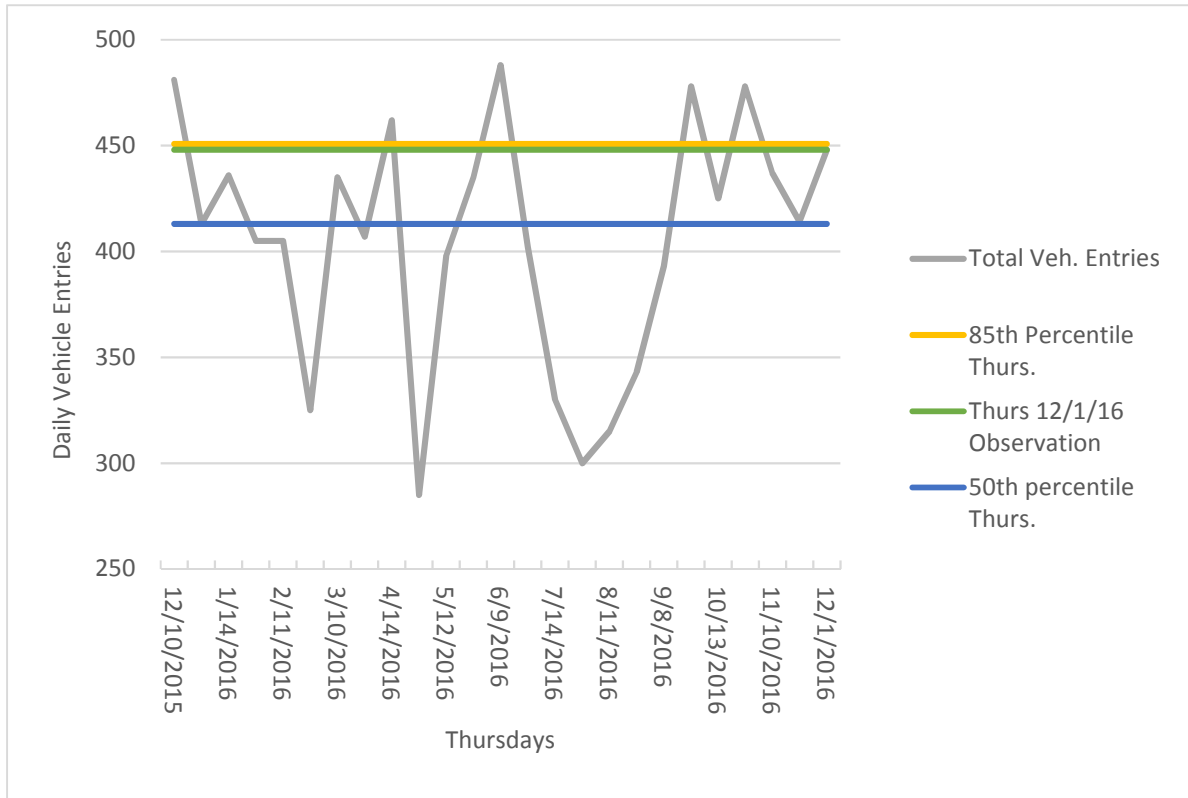


Figure 47: Recent Thursday Demand Variation at Elm St Garage

Thursday demand data from different seasons during the year at the Spring St Garage is shown in Figure 48. The December 1st 2016 data at the Spring St garage placed in the 87th percentile, corroborating that the Thursday sample date was well above average in parking demand, at least in the vicinity of the Elm St and Spring St garages.

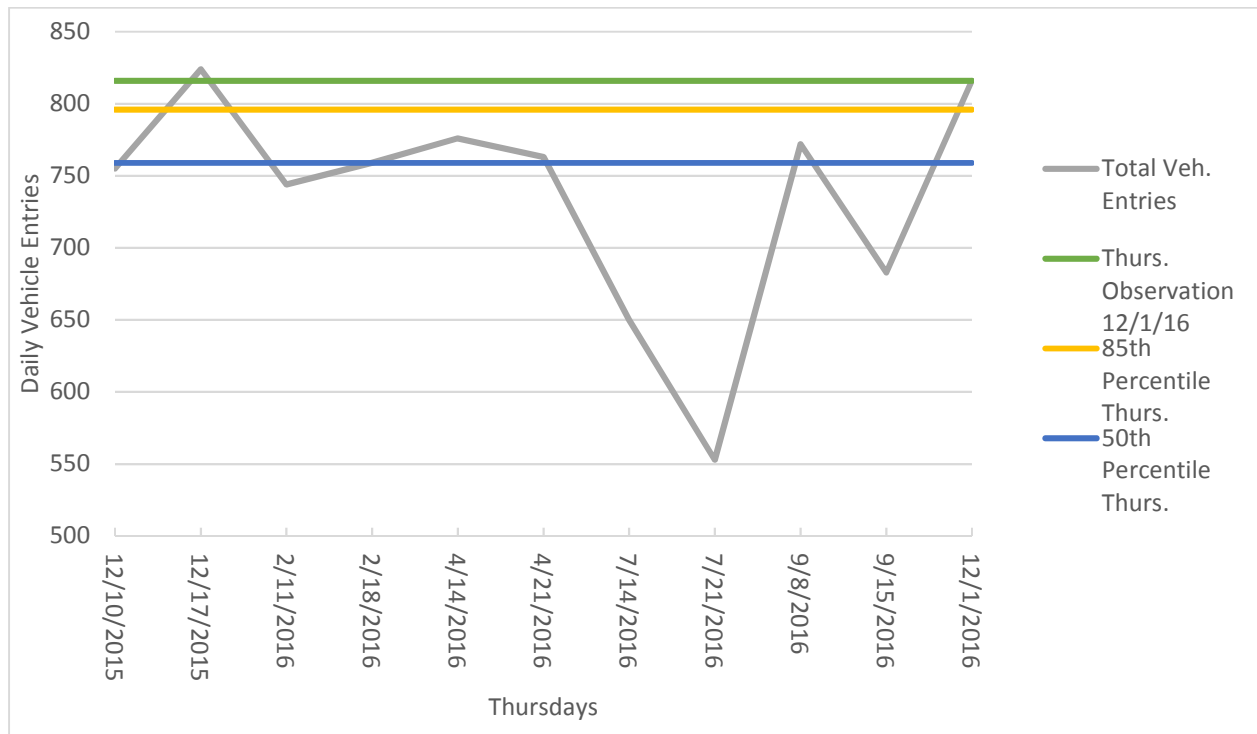


Figure 48: Recent Thursday Demand Variation at Spring St Garage

The same comparisons were made between the Saturday, December 3rd observations at Elm St and Spring St using annual Saturday data at each location. Figure 49 shows that the Elm St garage sample on December 3rd fits in near the 85th percentile of Saturday parking demand in the past year at that location. In Figure 50, however, we see that the December 3rd data at the Spring St garage is very close to the 50th percentile Saturday demand at that location. The observation day did not include an arena event and this is likely the reason for the observed demand at that location placing close to the median. The highest demand on Saturdays at Spring St appears to correspond with arena events during the year.

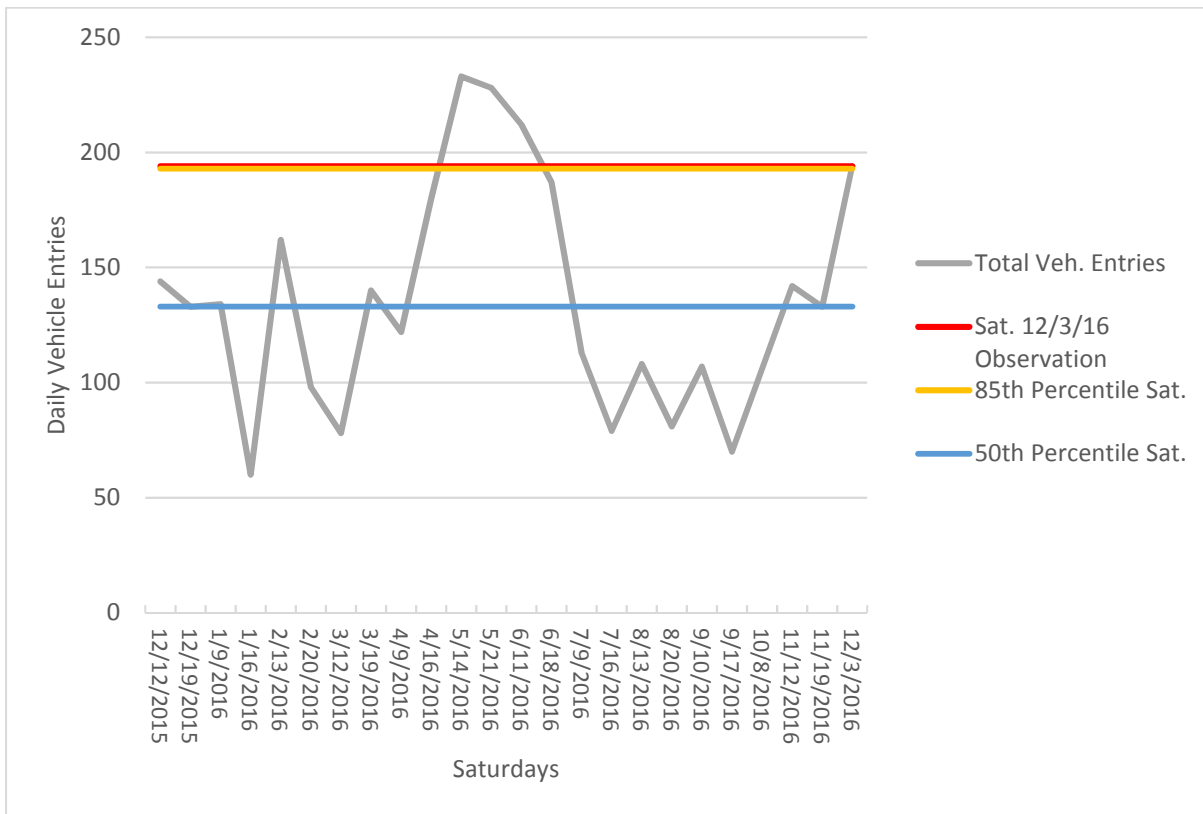


Figure 49: Recent Saturday Demand Variation at Elm St Garage

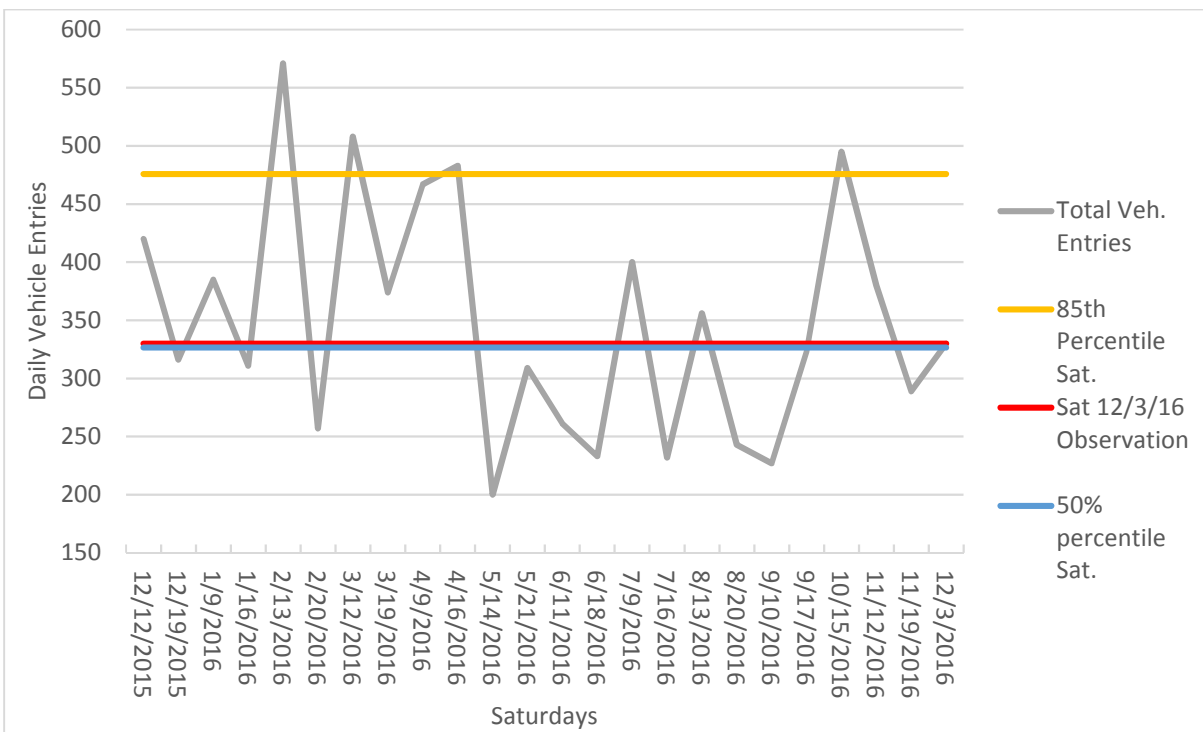


Figure 50: Recent Saturday Demand Variation at Spring St Garage

Based on the annual trends at Spring St and Elm St, we conclude that the December sample days were very likely a good representation of average to higher than average recurring regional parking demand in the study area based on the location of these garages.

It is interesting to note that both Elm St and Spring St garages appear to show lower demand for parking during July and August, when a higher percentage of office workers and educators would be expected to be on vacation. It does not appear that Elm St and Spring St attract a high volume of tourism parking during the summer. We were unable to investigate the annual trends at other privately-operated garages because operators typically do not share annual data. Further data collection in the summer season would be useful to determine whether other garages and lots see a downturn in recurring employee parking during the summer and also to find out which facilities are attracting peak season visitor parking demand.

G.2 Seasonal Variation in Island Resident and Island Visitor Parking

In this section, an estimate of additional peak season parking demand in the study area associated with island ferry passenger activity is made using passenger data from Casco Bay Lines, employment data, and assumed automobile mode shares.

The City of Portland's Waterfront is home to the Casco Bay Lines Ferry Terminal, which serves as a vital transportation hub for residents of and visitors to several islands in Casco Bay including Peaks Island, Little Diamond Island, Great Diamond Island, Cliff Island, and Long Island. The parking garage located at the ferry terminal is known to house the vehicles of many island residents and a waitlist estimated at several years long exists for the opportunity to purchase monthly parking there. Island residents with a residential sticker from the City may also park in designated non-metered (but time limited) zones located on the Eastern Waterfront for days at a time, although finding an on-street space has become more difficult for islanders as development has occurred on the Eastern Waterfront. Additionally, island residents and visitors to the islands may purchase parking at other structured and surface lot facilities in the study area, if and when available.

For context, according to 2015 American Community Survey estimates, the island communities served by the Casco Bay Transit District have a year-round resident population of 1,258 people living in 589 year-round occupied households. Year-round island residents own 744 vehicles in total. The number of year-round island households owning at least one vehicle was 400. During the peak Summer season, the number of occupied households increases to 1,803. The ACS does not estimate seasonal population or seasonal vehicle ownership.

Available data describing travel to and from the islands consists of Casco Bay Lines ferry passenger monthly totals, on-board vehicle transport monthly totals, and worker flow data between the mainland and the islands for primary job holders. Ferry passenger volume variation is highly seasonal, the summer season is much higher than the rest of the year. Figure 51 shows the trend of average daily passenger and on-board vehicle volumes by month for the most recent year available.

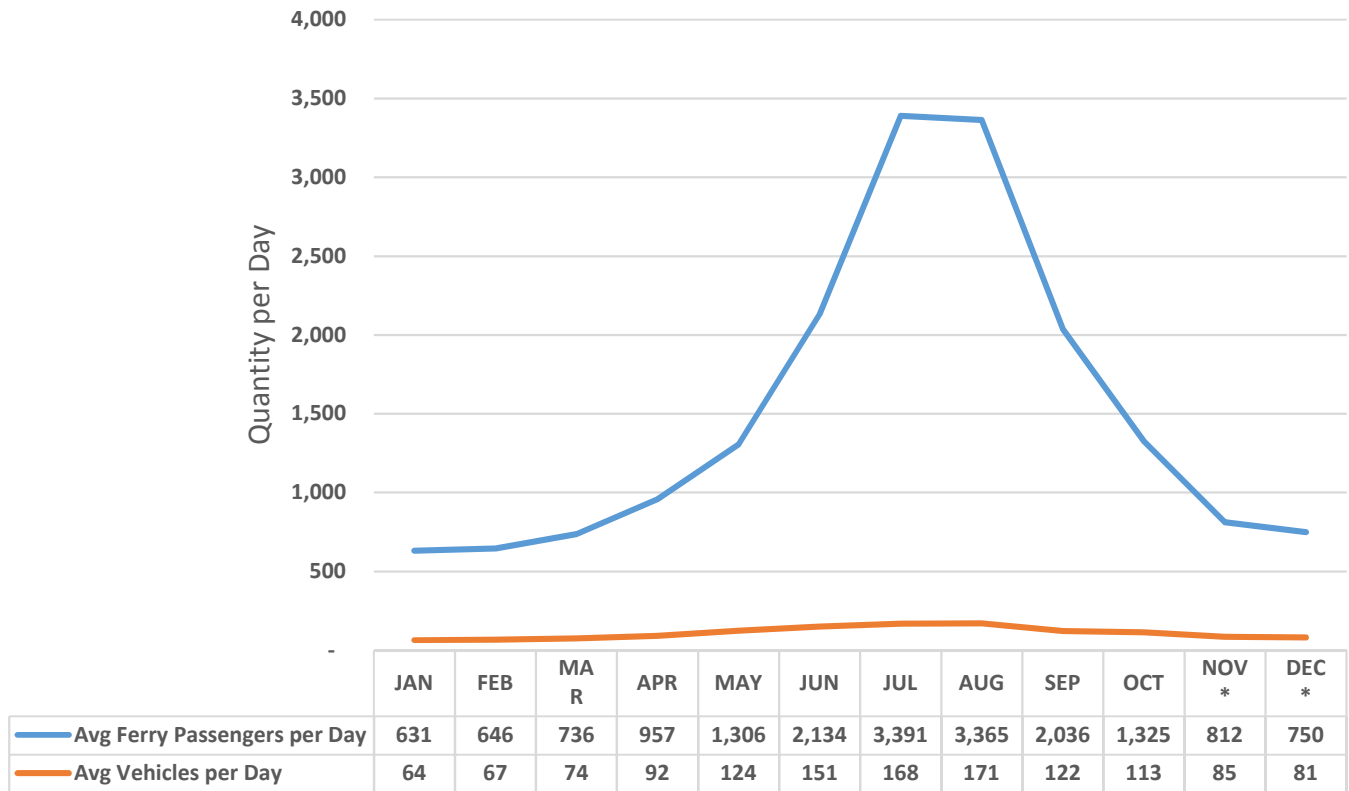


Figure 51: Average Daily Ferry Passenger and Vehicle Volumes by Month

Source: Casco Bay Lines, 2016 monthly passenger and vehicle data. *November and December data are from 2015 as 2016 data for those months was not yet available at the time of the data request.

According to Longitudinal Employer-Household Dynamics (LEHD) data from 2014, the most recent year available, the number of workers who live on an island served by a Casco Bay Lines Ferry and hold a primary job on the mainland is approximately 550. Additionally, the number of workers who live on the mainland but hold a primary job on one of the islands totals approximately 100.

Subtracting the expected number of commuting workers to and from the islands from the average daily passenger totals for a given month leaves a remainder of passengers that consists of visitors, full-time island residents making non-work trips, and seasonal island residents (depending on the month). Table 28 shows the difference between August and December passengers after subtracting out the expected number of recurring work commute trips.

Table 28: Peak Season Ferry Passenger Difference

CBL Ferry Passengers	Dec	Aug	Difference (Aug-Dec)
Avg. Round Trip Passengers/Day	750	3,365	
Island Resident Workers who Commute Daily to Work on the Mainland (Primary Jobs)	-550	-550	
Mainland Residents Workers who Commute Daily to the Islands (Primary Jobs)	-100	-100	

Remaining Round Trip Passengers to/from the Islands per Day	=100	=2,715	2,615
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Sources: Casco Bay Lines, 2016 monthly passenger and vehicle data; 2014 LEHD data, U.S. Census Bureau

To estimate the vehicle parking demand on the mainland associated with the August and December ferry passenger demand, some assumptions need to be made about how workers and non-workers travel to and from the ferry terminal. The following assumptions are made in the absence of more specific data on travel behavior to and from the islands particularly for non-work trips:

- Of the approximately 550 island resident workers who commute to the mainland, employment data shows that approximately 100 of these workers work in the Downtown/Old Port. It is assumed that these commuters by and large do not drive between the ferry terminal and their work destination.
- For the remaining 450 island resident workers, a drive mode share equivalent to the City of Portland’s for work trips is assumed for travel between the ferry terminal and their work destination. The City’s rate in 2015 was 73 percent drive alone, and about 9 percent carpool consisting of parties between 2 to 4 people.¹³
- For the approximately 100 workers who commute from the mainland to the islands, the City of Portland’s drive alone and carpool to work mode shares are also assumed.
- For all other passengers including visitor trips, year-round island resident non-work trips, and seasonal island resident trips, it is assumed that average travel party size is 2.5, which was the average travel party size for day visitor parties to the Portland region in 2015¹⁴. A drive mode share of 82 percent is assumed based on the total automobile mode share of work travel in the City of Portland in 2015 in lieu of more specific data.

Applying the stated assumptions, an estimate for parking demand in the study area arising from ferry passenger activity is presented in Table 29. The average daily number of vehicles transported round trip on-board the ferry is subtracted from the estimated parking demand since those vehicles traveled with the passengers rather than remaining parked in the study area.

Table 29: Estimate of Peak Season Differential in Ferry Parking Demand

Vehicles	Dec	Aug	Difference (Aug-Dec)
Parking Demand Estimate for Island Resident Workers Who Commute by Car from the Ferry Terminal (Primary Jobs)	350	350	
Parking Demand Estimate for Mainland Residents who Commute by Car to the Islands	80	80	
Parking Demand Estimate for Remaining Passengers to/from the Islands	30	890	
Total Estimated Vehicles	460	1,320	
Average Ferry Transported Vehicles per Day	- 81	-171	
Estimate of Average Daily Ferry Parking Demand in the Study Area	=379	=1,149	770

¹³ 2015 American Community Survey 5-year estimate. Work travel mode share for the City of Portland adjusted for commuting workers only (those who did not work from home).

¹⁴ Maine Office of Tourism Visitor Tracking Research 2015 Calendar Year Annual Report: Regional Insights Greater Portland & Casco Bay. April 2016.pg 29.

The net additional 770 vehicles are added to the observed demand from December as a seasonal adjustment to the peak season for increased ferry parking demand. Because the passenger data from Casco Bay Lines does not give weekday vs. weekend variation in passenger demand, the average of 770 additional vehicles are added to both weekday and Saturday peak season estimates.

In addition to the Casco Bay Lines, the Eastern Waterfront hosts the international ferry to Nova Scotia that operates May through October. Based on average daily passenger data from 2014-2016, an average daily walk-on passenger total is 25. It is estimated that parking demand related to the walk-on passengers is 10 vehicles, raising the peak adjustment for combined ferry parking demand to 780 vehicles.

It is assumed that the impact of the additional 780 parked vehicles in the peak season would be allocated to the subarea zone of the Ferry Terminal, Subarea Zone 6, and then to the Eastern Waterfront, Subarea Zone 7, following that to Subarea Zones 4 in the Old Port and Subarea Zone 5 on the Central Waterfront, which are adjacent to Subarea Zone 6.

It is clear that added parking demand of approximately 780 vehicles from the increase in seasonal ferry ridership alone could consume most of the off-street December observed vacant parking spaces shown in Figure 45 for the following zones: Subarea Zone 6 (200-225 spaces), Subarea Zone 7 (400-425 spaces), Subarea Zone 4 (125-150 spaces), and Subarea Zone 5(125-150 spaces) which collectively had about 850-950 vacant off-street spaces at 12pm on a December weekday.

G.3 Summer Day Visitor Parking Demand Adjustment

A seasonal adjustment is estimated to account for the additional day visitor parking demand in the study area expected during the peak summer season. Detailed survey data commissioned by the Maine Office of Tourism are used to create the estimate. In the surveys, a day visitor to the Portland/Casco Bay region is defined as a traveler who originated within the state of Maine or from up to 100 miles from Maine's borders and traveled more than 50 miles from home to reach their destination. Day visitor trip purposes included leisure, visit friend/relative, and business. The average weekday and weekend day visitor parking demand to the study area is estimated for both the winter and summer seasons for the purpose of understanding the difference. The percentage of day visitors who reported visiting Peaks Island (7 percent) was subtracted from the adjustment so as not to overlap with the seasonal ferry passenger demand adjustment.

Several assumptions were made where specific data was not available. The automobile share of day visitor parties to the study area is estimated to be 93 percent. The automobile mode share of overnight visitors was between 81-93percent¹⁵. It is assumed that day visitors would have less time to travel by train or airplane, and therefore would be likely to drive at a rate closer to the high estimate for overnight visitors.

It is assumed that the volume of day visitors is on average 15 percent greater on weekend days as compared to weekdays. This is in keeping with tourism markets where leisure travel is dominant. Table 30 summarizes the derivation of estimated day visitor parking demand to the study area for the winter and summer seasons. The result is an estimated additional 1,710 vehicles on a peak season weekday and an additional 1,960 vehicles on a peak season Saturday.

¹⁵ Maine Office of Tourism Visitor Tracking Research 2015 Calendar Year Annual Report. Prepared by DPA for the Maine Office of Tourism. March 2016. Pg. 34.

Table 30: Estimation of Seasonal Day Visitor Adjustment Factors to the Study Area

	Winter	Summer	Difference (Summer-Winter)	Variable/Equation
Months	Dec.-April	May-August		
Number of days in 2015/2016	151	123		A
Number of weekdays	105	86		B
Number of weekend days	46	37		C
Estimated total seasonal day visitation in Maine ^{16,17}	2,609,957	15,468,062	12,858,105	D
Day visitor primary destination was greater Portland/Casco Bay Region ^{14,15}	14%	11%		E
Share of day visitors to the greater Portland/Casco Bay region that visited the study area not including visitors to Peaks Island ¹⁸	42%	42%		F
Average day visitor travel party size ¹⁹	2.5	2.5		G
Automobile mode share of day visitors, assumed	93%	93%		H
Estimated seasonal day visitors to the study area	153,465	714,624	561,159	(D*E*F)
Daily average day visitors to the study area	1,016	5,810	4,794	(D*E*F)/A
Daily average day visitor parking demand to the study area	378	2,161	1,783	(D*E*F*H)/(A*G)
Weekday average day visitors to the study area (assume weekdays are 15% lower than weekend days)	972	5,559	4,587	(D*E*F)/(B+1.15*C)
Weekend average day visitors the study area (assume weekend days are 15% higher than weekdays)	1,118	6,393	5,275	1.15*(D*E*F)/(B+1.15*C)
Estimated weekday average day visitor parking demand in the study area	362	2,068	1,710	((D*E*F)/(B+1.15*C))*H/G
Estimated weekend average day visitor parking demand in the study area	416	2,378	1,960	1.15*((D*E*F)/(B+1.15*C))*H/G

¹⁶ Maine Office of Tourism Visitor Tracking Research Summer 2016 Seasonal Topline. Prepared by DPA for the Maine Office of Tourism. October 2016. pgs. 19,25.

¹⁷ Maine Office of Tourism Visitor Tracking Research Winter 2016 Seasonal Topline. Prepared by DPA for the Maine Office of Tourism. June 2016. pgs. 19,25.

¹⁸ Maine Office of Tourism Visitor Tracking Research 2015 Calendar Year Annual Report: Regional Insights Greater Portland & Casco Bay. April 2016. Pgs. 42. (Sum of day visitors who reported visiting either the Waterfront (27%), the Museum of Art (10%), or the State Theater (5%).

¹⁹ Maine Office of Tourism Visitor Tracking Research 2015 Calendar Year Annual Report: Regional Insights Greater Portland & Casco Bay. Prepared by DPA for the Maine Office of Tourism. April 2016. Pg. 29.

G.4 Summer Overnight Visitor Parking Demand

In this section, a seasonal adjustment is estimated to account for the additional overnight visitor parking demand in the study area expected during the peak summer season. The methodology uses a combination of published hotel occupancy rates in Portland for 2016, seasonal variation in statewide hotel occupancy rates, and Institute of Transportation Engineers (ITE) parking generation factors for urban hotels. The percent of overnight visitors (7 percent) who reported visiting Peaks Island in a survey commissioned by the Maine Office of Tourism²⁰ was subtracted because they are already captured in the seasonal ferry passenger parking demand adjustment.

Table 31 summarizes the derivation of the peak season overnight visitor parking demand adjustment. The result is an additional 260 vehicles on a peak season weekday and 400 vehicles on a peak season Saturday.

²⁰ Maine Office of Tourism Visitor Tracking Research 2015 Calendar Year Annual Report. Prepared by DPA for the Maine Office of Tourism. March 2016. Pg. 23.

Table 31: Estimation of Seasonal Overnight Visitor Adjustment Factors to the Study Area

Description	Result	Formula
Maine hotel occupancy annual rate 2015 ²¹	57%	A
Maine hotel occupancy winter rate ²²	42%	B
Maine hotel occupancy summer rate ¹⁹	78%	C
Portland hotel occupancy annual rate 2015 ¹⁸	70%	D
Estimated Portland hotel occupancy Winter rate	55%	D-(A-B)
Estimated Portland hotel occupancy Summer rate	91%	D+(C-A)
Number of days in Dec. 2015-April 2016	151	E
Number of weekdays Dec. 2015-April 2016	105	F
Number of weekend days Dec. 2015-April 2016	46	G
Estimated winter weekday hotel occupancy in Portland (assuming weekdays are 10% lower)	54%	(55%)/((F+1.1*G)/E)
Estimated winter weekend hotel occupancy in Portland (assuming weekend days are 10% higher)	59%	1.1*(54%)
Number of days May-August 2016	123	H
Number of weekdays May-August 2016	86	I
Number of weekend days May-August 2016	37	J
Estimated summer weekday hotel occupancy in Portland (assuming weekdays are 10% lower)	89%	(91%)/((I+1.1*J)/H)
Estimated summer weekend hotel occupancy in Portland (assuming weekend days are 10% higher)	97%	1.1*(89%)
Hotel Rooms in the study area	1,393	K
Winter hotel weekday parking generation ²³	478	K*54%*0.64
Winter hotel Saturday parking generation ²⁰	740	K*59%*0.9
Summer hotel weekday parking generation (-7% for Peaks Island Visitors) ²⁰	735	(K*89%*0.64)-7%
Summer hotel Saturday parking generation (-7% for Peaks Island Visitors) ²⁰	1,137	(K*97%*0.9)-7%
Adjustment factor for weekday overnight visitor parking	260	Wkdy summer-winter
Adjustment factor for weekend day overnight visitor parking	400	Wkend summer-winter

²¹ Maine Lodging Outlook 2016. Prepared for MEREDA by Pinnacle Advisory Group.

²² 2015 Maine Lodging Study. June 2015. Prepared by DPA for The Maine Office of Tourism. Pgs. 16.

²³ ITE Parking Generation 4th Edition. 2010. Institute of Transportation Engineers. 0.64 vehicles/occupied room for weekdays and 0.9 vehicles/occupied room for weekends.

G.5 Adjusted Seasonal Demand

Combining the demand curves from the observed December sample in Section E with the estimated adjustments for peak season ferry travel, peak season day visitors, and peak season overnight visitors, a new adjusted estimate of peak season weekday parking demand is produced as shown in Figure 52. The peak season adjustments result in a parking demand that is higher than effective capacity between 12pm and 2pm on weekdays. Peak vehicle demand is estimated as approximately 14,300 vehicles, which is approx. 320 vehicles more than the effective capacity.

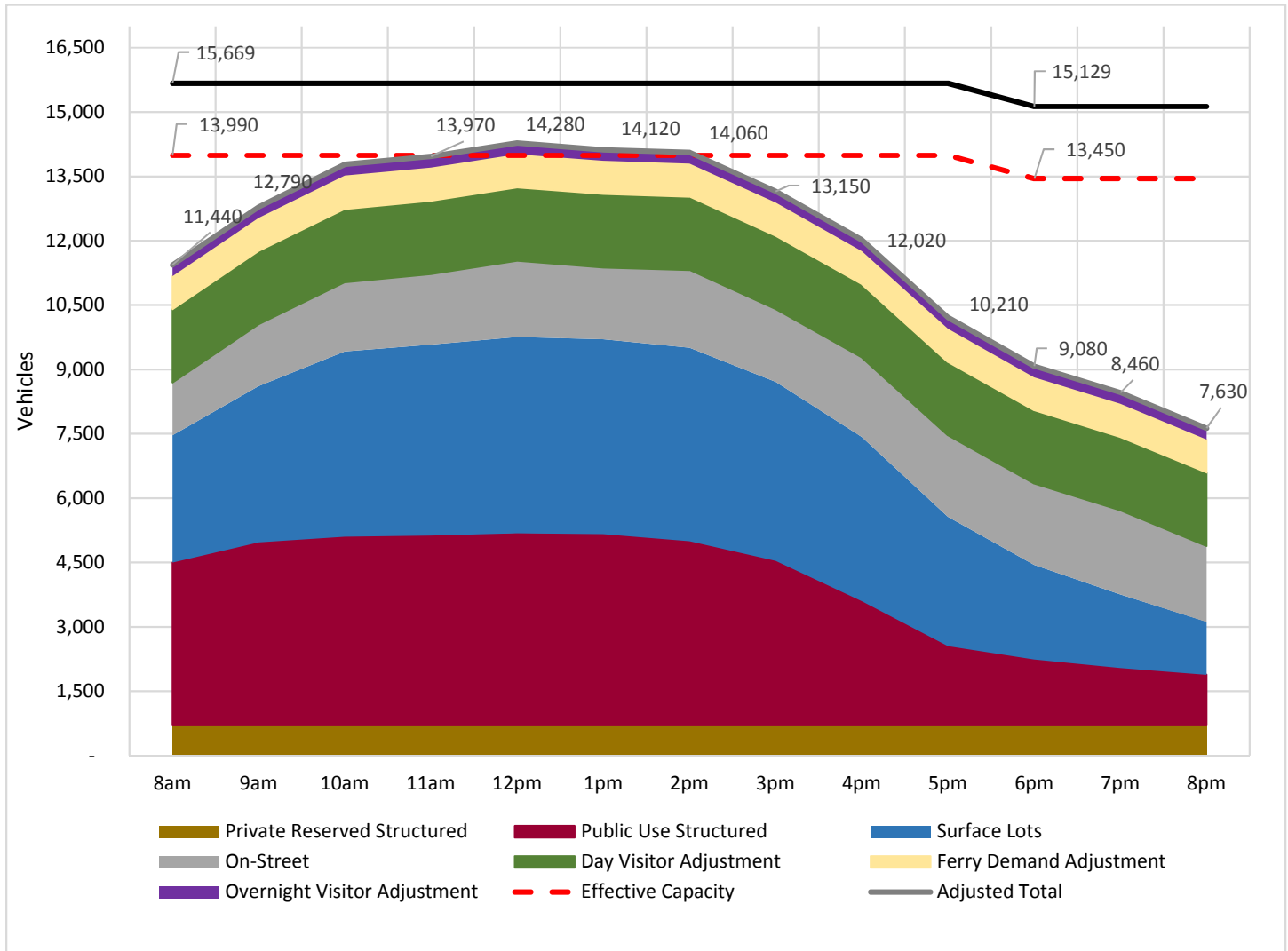


Figure 52: Weekday Observed Demand with Additional Summer Visitor Demand

Figure 53 shows the Saturday observed parking demand with added peak season adjustments. The peak occurs at 2pm with approx. 9,320 vehicles parked, about 4,300 vehicles below Saturday effective capacity.

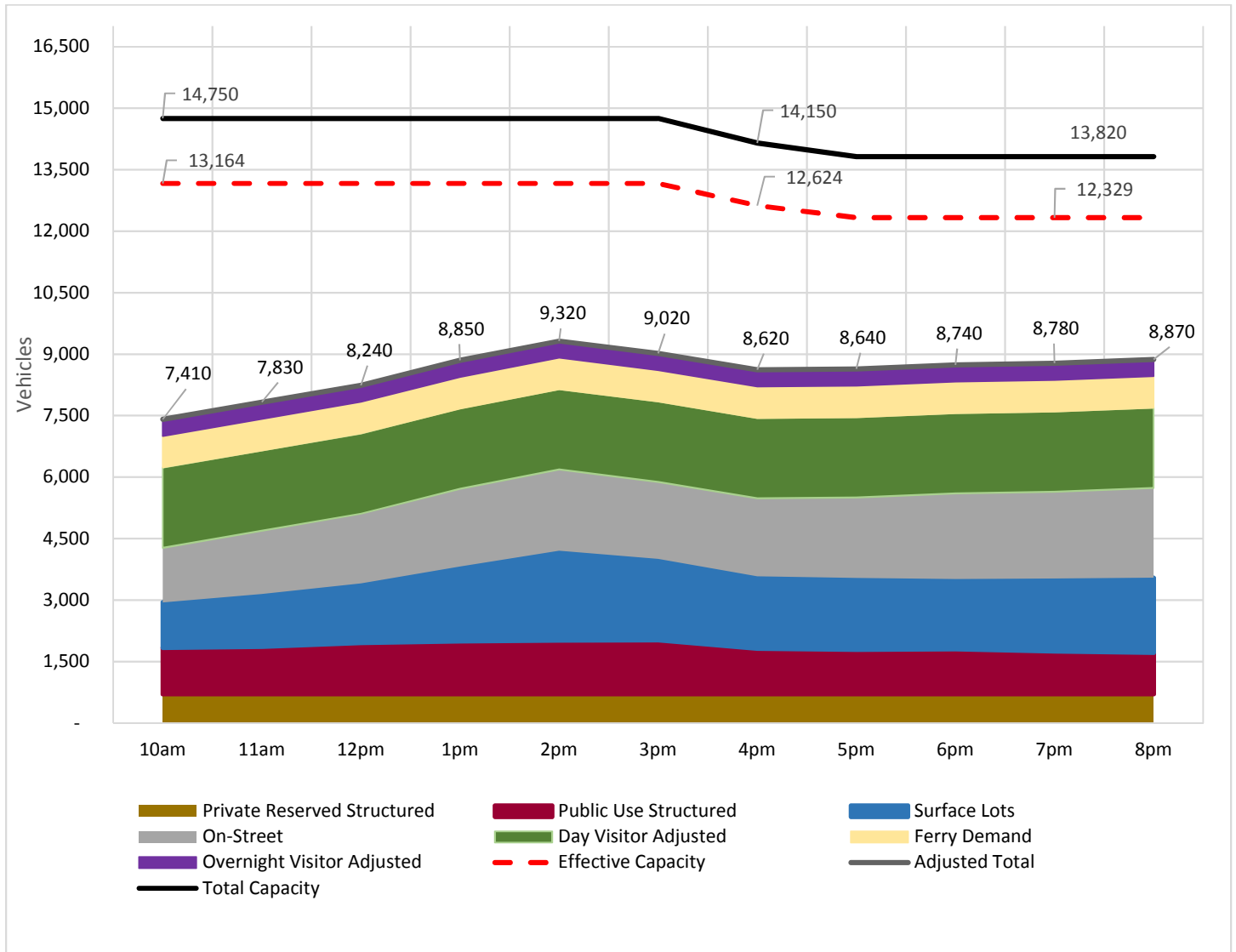


Figure 53: Weekend Observed Demand with Additional Summer Visitor Demand

H. Land Use-Based Analysis of Parking Demand

A second method to estimate parking demand in the study area is theoretical parking demand based on existing land use development with engineering industry standard parking generation factors. Land use-based parking demand analysis estimates how much parking a development will generate based on factors derived from averaged historical observed parking data found in studies of similar land uses. A commonly used source of parking generation factors is the Institute of Transportation Engineers (ITE) Parking Generation, 4th Edition. Although still the engineering standard for estimating the parking demand of new development when no applicable local parking case studies exist, the methodology has been called into question for reliance for too few or out of date samples used to calculate the factors, and overly conservative results leading to oversized parking.²⁴ The methodology also results in only a single answer for a parking supply, usually enough parking to satisfy a chosen peak.

To improve upon the results of land use-based parking analysis, the Urban Land Institute (ULI) Shared Parking 2nd Ed. Methodology can be used together with ITE factors to distribute parking demand by time of day based on the type of land use. Shared parking factors are also based on averaged observed land use specific parking studies. The ULI Shared Parking methodology allows for the estimation of how adjacent or nearby land uses may or may not be able to use the same parking supply in a complimentary way based on a distributed parking demand curve for each land use.

The steps taken to create a land-used based estimate for the Portland study area were:

- Commercial building use data by floor were obtained from the City's Tax Assessor office at the parcel level.
- Additional data on residential parcels were obtained from the City's GIS department.
- Vacancy rates of 7 percent for office, 1 percent for residential, and 2 percent for retail/restaurant were applied after consultation with the City Planning Department.
- The hotel occupancy level in the study area was set at 70 percent based on the 2015 average annual hotel occupancy for Portland²⁵
- Assumptions had to be made about the percentage of internal capture trips in the study area for each land use. Internal capture is the expected share of trips that are attracted to a land use while the customer's vehicle is already parked for another purpose. An example occurs when an office worker goes to lunch on foot while their vehicle is parked at their office and the lunch trip does not extend the time the vehicle would already have been parked. Internal capture trips increase with dense mixed-use development, much like the study area. Low rates of internal capture of 10 percent or less were assumed except for restaurants in the study area which were assumed to have a 50 percent internal capture rate.
- ITE Parking Generation rates were used to calculate a peak parking demand for each identified land use at the 50th and 85th annual percentile demand levels according to ITE. The 50th percentile is intended to represent an average day, while the 85th is regarded to be the highest peak that should be designed for while remaining economical.
- The results of the ITE Parking Generation calculations were next processed through a spreadsheet of land use specific ULI Shared Parking time-of-day factors and then a spreadsheet of internal capture rates.
- The resulting charts give a combined peak parking demand by time of day that also shows how the parking demand of individual land uses crest and fall during the day while consuming and yielding shared parking.

²⁴ Shoup, Donald C.(2003) Truth in Transportation Planning. *Journal of Transportation Statistics*. Vol. 6 No. 1 2003.

²⁵ Maine Lodging Outlook 2016. Prepared for MEREDA by Pinnacle Advisory Group.

Figure 54 is the shared parking curve for the ITE generated weekday 50th percentile demand of the study area. The results of the 50th percentile calculation had a peak at 2pm of 14,470 vehicles, 480 vehicles more than effective study area capacity at that time. Noticeably, the 50th percentile land-used based estimate is not far off from the peak adjusted observed estimate in the prior section which found an average peak season high of 14,300 vehicle at 12pm. This is indicative of the reputation of ITE Parking Generation factors as over predicting parking demand.

Another point made apparent from the land-use based parking demand calculations is that Downtown Portland appears that it would have difficulty hosting a mid-day event at Cross Insurance Arena during the summer on a weekday. The Arena parking demand was generated using the seating capacity as an input variable. Cross arena has a seating capacity of 6,733 and is predicted by ULI Shared Parking Factors to have a peak parking demand of 2,200 vehicles. An event using the full seating capacity of the Arena held mid-day during the peak season could push parking demand several hundred over the total capacity of the study area according the land-use based calculations. Evening and weekend events at the Arena, however, appear to be well accommodated for parking.

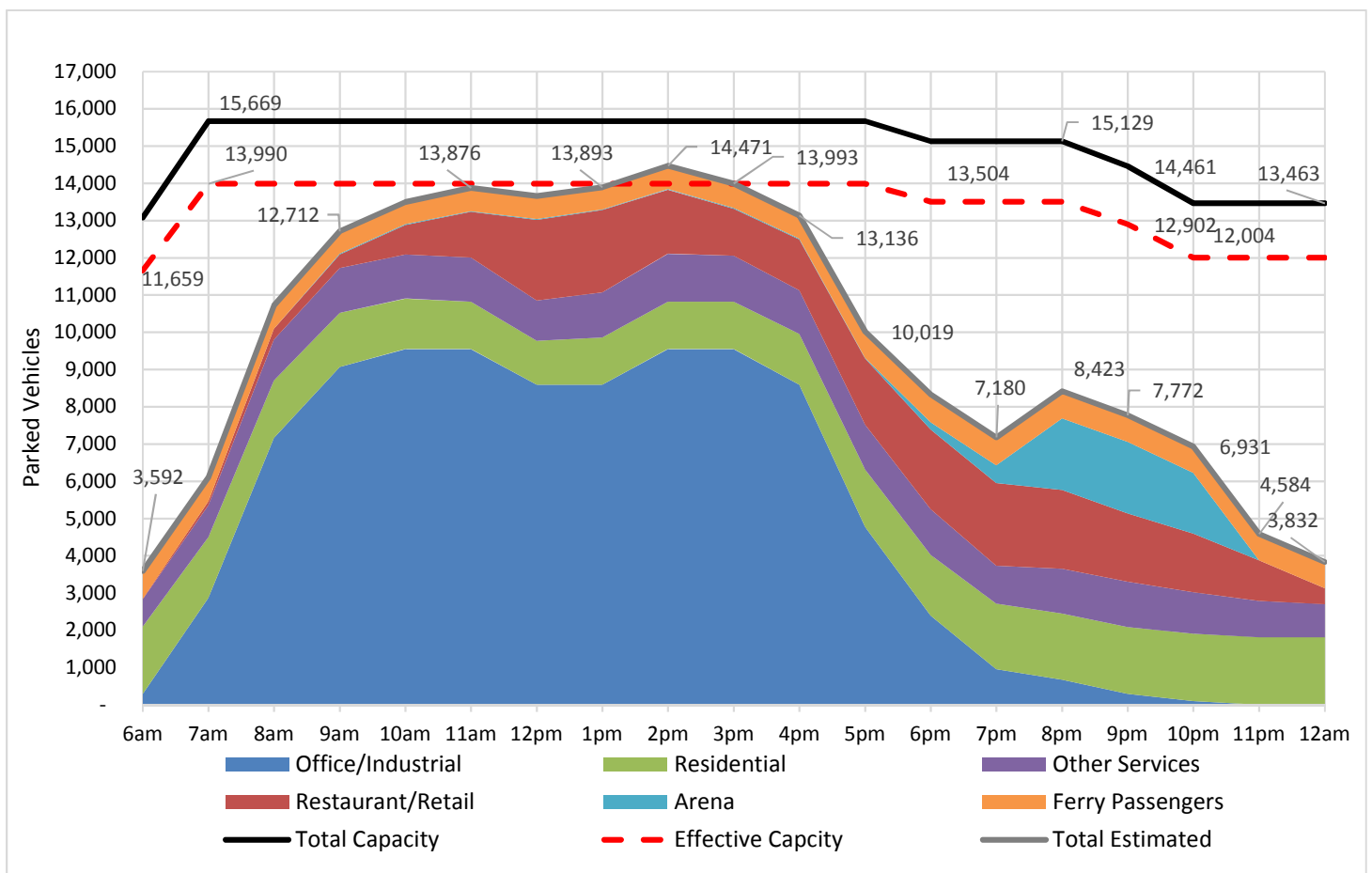


Figure 54: Weekday 50th Percentile Peak Demand Land-Use Calculated

Figure 55 has the resulting shared parking curve for the ITE generated Saturday 50th percentile demand showing a peak at 8pm of 10,350 vehicles assuming an arena event in the evening. Without an arena event, the peak occurred at 12pm with 9,390 vehicles. Again, what is meant to be an average annual Saturday using the ITE land-use based factors turned out very close to the observed occupancy with peak season adjustment which had a Saturday peak of 9,320 at 2pm.

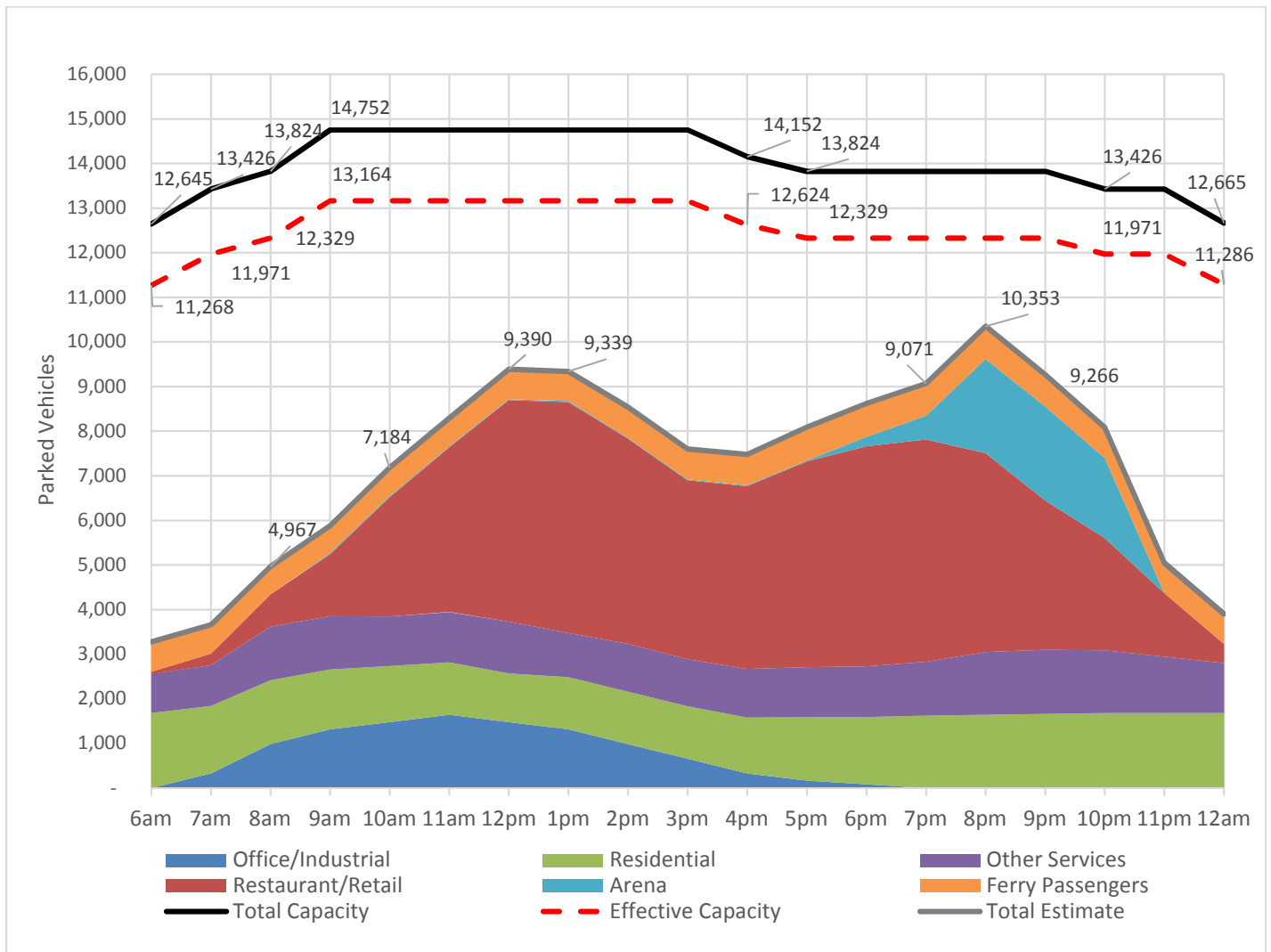


Figure 55: Saturday 50th Percentile Peak Demand Land-Use Calculated

When the weekday 85th percentile demand factors from ITE were applied to the study area land use, the results came out unreasonably high with a peak of 17,270 at 2pm, approximately 1,500 more than the total parking capacity of the study area. Such an occurrence would leave no open parking space in the study area and would also fill the public use spaces in the quarter mile buffer area. It is unlikely that this is a good representation of the peak season in the Portland study area and for this reason, the ITE 85th percentile demand factors are not applied further in this study. The 50th percentile ITE demand factors together with the ULI Shared Parking methodology appear to better approximate what was found to be a likely peak scenario based on the observed and adjusted results.

I. Existing Conditions Conclusion

In conclusion, Table 32 summarizes the following for the weekday existing conditions:

- 1) The results of the observed parking occupancy analysis performed in December, which was found to likely be a good representation of recurring parking demand but lacked peak season visitor and increased ferry passenger parking demand.
- 2) The observed parking occupancy analysis with calculated adjustments to account for additional peak summer season parking demand related to higher ferry passenger ridership and higher levels of overnight and day visitors.
- 3) The theoretical land-use based parking demand estimated using ITE Parking Generation (4th Ed.) factors together with ULI Shared Parking (2nd Ed) factors at the 50th percentile demand, which was found to be more realistic as an approximation of peak season demand for the study area compared to the results using 85th percentile factors.

Weekday Peak								
Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Observed Occupancy Dec. 2016	12pm	15,670	13,990	11,540	2,450	1,680	4,130	-
Observed Occupancy Dec. 2016 + Peak Season Adjustments	12pm	15,670	13,990	14,280	-290	1,390	1,390	290
ITE/ULI Land-Use Calculated Demand (50th percentile factors)	2pm	15,670	13,990	14,470	-480	1,200	1,200	480

Table 32: Weekday Existing Parking Demand Results Summary

While the observed parking occupancy in December was found to be 2,450 below effective capacity, after adjusting average daily parking demand for the peak season, we find that the study area is likely approximately 290 vehicles over effective parking capacity during the mid-day peak hour in the peak summer season. The land-use based calculation of parking demand using 50th percentile factors estimated that the study area is 480 vehicles over effective parking capacity. Travelers to the Study area do have access to an additional 1,300 off-street spaces with an effective capacity of 1,170 spaces within a quarter mile of the study area. However, this additional supply is shared with demand generated outside of the study area which was not calculated during this study.

It was found that a high-range estimate of monthly parking supply within the study area, 10,750, is below estimated employee monthly parking demand, 11,070. Additional monthly parking supply outside of the study area, such as parking structures north of Cumberland Ave, have some additional monthly parking shared with land-use outside of the study area and this additional supply appears to be needed to accommodate monthly employee parking demand in the study area. Given the tight market for monthly parking, it is likely that unrestricted parking on streets surrounding the study area are being used by employees of the study area.

It was found that during the peak summer season on a weekday, added parking demand related to higher ferry passenger ridership levels alone is of an order magnitude capable of consuming much of the peak period off-street

vacant parking observed during December in zones surrounding the Casco Bay Ferry Terminal. When day and overnight visitor parking demand is added to the weekday summer peak, a majority of whom visit the Old Port and Waterfront, the pattern of how the vacant space observed during December fills up would appear to emanate from the Ferry Terminal and Waterfront consuming vacant space gradually outward to Cumberland Ave.

On Saturday, it was found that off-street parking facilities were well below effective capacity. Table 33 summarizes the Saturday existing conditions case:

Saturday Peak								
Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Observed Occupancy Dec. 2016	2pm	14,750	13,160	6,190	6,970	1,590	8,560	-
Observed Occupancy Dec. 2016 + Peak Season Adjustments	2pm	14,750	13,160	9,320	3,840	1,590	5,430	-
ITE/ULI Land-Use Calculated Demand (50th percentile factors)	12pm	14,750	13,160	9,390	3,770	1,590	5,360	-
ITE/ULI Land-Use Calculated Demand (50th percentile factors) with 8pm Arena Event	8pm	13,820	12,330	10,350	1,980	1,490	3,470	-

Table 33: Saturday Existing Parking Demand Results Summary

On-street parking during the weekday sample was found to be below 85 percent occupied overall in the study area except for during the evening at around 7pm. Individual streets varied however, and it was found that Commercial St was over capacity after 4pm, Exchange St was over capacity between 11am and 6pm, Middle St was over capacity between 11am and 3pm and then again at 7pm, and Casco St was over capacity after 6pm.

Saturday on-street parking was above 85 percent occupied overall in the study area for much of the day after 1pm which is likely giving the perception that there is little parking to be found when in fact, off-street parking is abundant on Saturday, though at a higher price. Commercial St was over capacity from 1pm on. Both Middle St and Exchange St were over capacity during all sampled hours except for 3pm. Spring St was over capacity after 6pm. Casco St was over capacity from 11am onward.

J. Projected Future Parking Supply and Demand

This chapter of the report projects future parking supply and demand considering ferry passenger growth, tourism trends to the Casco Bay Region, and three land use development scenarios that include new parking supply. Our methodology is outlined here:

- 1). First, using recent historic ferry passenger and ferry vehicle transport data, we determine a daily parking demand for ferry passengers 10 years into the future during the peak season.
- 2). Considering data from the Maine Office of Tourism, we determine if an additional growth factor for visitor parking demand is needed in addition to the projected parking demand from ferry passenger growth and new land use development.
- 3). Next a land use development analysis is carried out in the following steps:
 - a. A set of approved and likely development projects in the next 10 years were obtained from the City of Portland. Three build-out levels, 50%, 75%, and 100% build out, are calculated to create three development scenarios. The scenarios are compared with population growth estimates from Portland's Comprehensive Plan and state employment growth estimates.
 - b. The three development scenarios are then apportioned to the study area using the subarea zone geography convention from the existing conditions chapter.
 - c. A combination of ITE Parking Generation (4th Ed) and ULI Shared Parking (2nd Ed) methods are used to calculate a time distributed daily parking demand for each scenario based on land use development.
 - d. An accounting of the new development generated parking demand, newly built parking, and eliminated parking due to construction reveals whether the development scenarios are projected to be parking demand neutral, create a net new parking supply surplus, or create a future parking supply deficit.

J.1 Projected Ferry Passenger Parking Demand

Casco Bay Lines Ferry passenger ridership between the City of Portland Waterfront and the Casco Bay Islands has grown in recent years by 12.5% between 2012 and 2016. A 10-year growth projection of ferry passenger parking demand is calculated here continuing the recent 5-year growth trend. Table 34 shows the compound annual growth rates (CAGRs) for annual passenger and vehicle volumes between 2012 and 2016.

Table 34: Casco Bay Lines Passenger Growth 2012-2016

Round-Trip Passengers	2012	2013	2014	2015	2016	Total % Growth 2012-2016	Compounded Annual Growth Rate
Annual Total	491,624	492,740	492,222	547,188	552,868	12.5%	2.4%
Round-Trip Transported Vehicles	2012	2013	2014	2015	2016	Total % Growth 2012-2016	Compounded Annual Growth Rate
Annual Total	15,413	12,978*	16,068	17,168	19,998	29.7%	5.3%

* In 2012 the car ferry was dry docked and service was subcontracted

The passenger and vehicle growth rates were then used to project peak daily passenger and vehicle totals in 2027 as shown in Table 35. To convert ferry passenger and transported vehicle volumes to projected parking demand, the same set of assumptions that were made as in Section G.2 of the existing conditions chapter were applied. Those assumptions were:

- Employment data shows that approximately 18% of the island resident workers who commute to the mainland work in the Downtown/Old Port. It is assumed that these commuters by and large do not drive between the ferry terminal and their work destination.
- For the remaining island resident workers, a drive mode share equivalent to the City of Portland’s for work trips is assumed for travel between the ferry terminal and their work destination. The City’s rate in 2015 was 73% drive alone, and about 9% carpool consisting of parties between 2 to 4 people.²⁶
- The City of Portland’s drive alone and carpool to work mode shares are also assumed for the workers who commute from the mainland to the islands,
- For all other passengers including visitor trips, year-round island resident non-work trips, and seasonal island resident trips, it is assumed that average travel party size is 2.5, which was the average travel party size for day visitor parties to the Portland region in 2015²⁷. A drive mode share of 82% is assumed based on the total automobile mode share of work travel in the City of Portland in 2015 in lieu of more specific data.

Included in the future projection is an assumed rate of growth of the number of work commuters traveling to and from the islands. Commuter populations were increased by 8 percent in keeping with the Portland Comprehensive Plan goal of 8 percent population growth in 10 years. The result was a projection of an additional peak season daily parking demand of 230 vehicles for ferry passengers using Casco Bay Lines as shown in Table 35. The ferry parking projection will be added to both weekends and weekdays.

²⁶ 2015 American Community Survey 5-year estimate. Work travel mode share for the City of Portland.

²⁷ Maine Office of Tourism Visitor Tracking Research 2015 Calendar Year Annual Report: Regional Insights Greater Portland & Casco Bay. April 2016.pg 29.

Table 35: Projected Additional Ferry Parking Demand in 2027

Passengers	Aug-16	Projected Aug 2027	Difference (2027-2016)
Avg Round Trip Ferry Passengers/Day	3,365	4,472	
Year-round Island Resident Workers who Commute to Work on the Mainland (Primary Jobs)	550	594	
Year-Round Mainland Residents who Work on the Islands	100	108	
Remaining Passengers to/from the Islands	2,715	3,770	1,056
Vehicles	Aug-16	Projected Aug 2027	Difference (2027-2016)
Parking Demand Estimate for Island Resident Workers Who Commute by Car from the Ferry Terminal (Primary Jobs)	350	380	
Parking Demand Estimate for Mainland Residents who Commute by Car to the Islands	80	80	
Parking Demand Estimate for Remaining Passengers to/from the Islands	890	1,240	
Total Estimated Vehicles	1,320	1,700	
Average Ferry Transported Vehicles per Day	-171	-318	
Estimate of Ferry Parking Demand in the Study Area	=1,149	= 1,382	230

Forecasts of passenger demand for international ferry service to Nova Scotia were unavailable. Based on average daily passenger data from 2014-2016, an average daily walk-on passenger total of 25 will be held constant for the future weekday and weekend projections. It is estimated that parking demand related to the walk-on passengers is 10 vehicles.

The results project a total ferry passenger parking demand of 240 additional vehicles in 2027. Ferry parking demand peaks in the evening and during the early morning hours before 7am. During the day, parking demand dips slightly as island residents make trips using their vehicles and visitors return to their vehicles. The time of day demand distribution from the Casco Bay Parking Garage is used as an approximation for the time of day distribution for ferry parking demand.

J.2 Tourism Considerations

The Maine Office of Tourism does not forecast visitor levels, although it does set future goals for increased visitation, such as first-time visitation and business visitation. Recent data on 2016 from the office of tourism showed another strong year for increased visitors in Maine. Between 2012 and 2016, visitation grew by from 28 million visitors to 35.8 million visitors, which was a 28% percent increase overall and a compound annual growth rate of 5%. However, visitation to the Greater Portland Casco Bay Region is not necessarily growing at the same rate as the state Maine

because a lower percentage of visitors reported making the Portland region their primary destination in 2016 as compared to 2012^{28 29 30}.

Our future estimate of overnight visitor parking demand to the study area is based on the growth in hotel rooms in each development scenario. An occupancy rate of 70%, the annual average from 2016, is applied into the future scenarios.

Similar to the existing conditions land use-based parking analysis, the future parking demand estimates are based on land-use generated parking demand using ITE Parking Generation (4th Ed) factors at the 50th percentile demand level together with ULI Shared Parking (2nd Ed). The 50th percentile demand level factors were found to be a better representation of Portland's existing conditions peak season than 85th percentile factors, which produced an unreasonably high peak too dissimilar from observed occupancy and calculated seasonal adjustment factors.

Land-use based parking generation does not delineate between resident and visitor parking demand, total demand is based on the quantity of land-use development. The peak demand from the parking generation factors is already an approximation of the high demand season, meaning additional demand from tourism does not need to be added unless it is believed that tourism is increasing beyond the rate suggested by new development. New retail, restaurant, and hotel development specified in the future projects have been sized in anticipation of tourism. Additionally, we are accounting for growth in ferry passenger ridership in the future demand estimates, based on passenger growth since 2012, which is a way of accounting for projected island tourism growth.

J.3 Land-Use Development Scenarios Parking Analysis

Information on a set of approved and potential future projects within a 10-year time frame was obtained from the City of Portland's Planning Department and the Economic Development Department. Figure 56 shows the approximate location of future projects within or very near the study area. The study area is shown divided into seven subarea zones as defined in the existing conditions chapter for the sake of discussion. The location of the projects suggests both a concentration of new parking demand in Subarea Zones 3 and 5, and a second concentration of new parking demand in Subarea Zone 7, the Eastern Waterfront, that will include new demand in the eastern edge of Subarea Zone 6 at the Maine State Pier.

²⁸ Maine Office of Tourism Visitor Tracking Research 2012 Calendar Year Annual Report. Prepared by DPA. Pgs. 52,77. Seventeen percent of annual day visitors reported making the Portland region their primary destination.

²⁹ Maine Office of Tourism Visitor Tracking Research Winter/Spring 2016 Seasonal Topline pgs24,25. Fourteen percent of winter and spring day visitors reported making the Portland region their primary destination.

³⁰ Maine Office of Tourism Visitor Tracking Research Summer 2016 Seasonal Topline pgs24,25. Eleven percent of day visitors reported making the Portland region their primary destination.

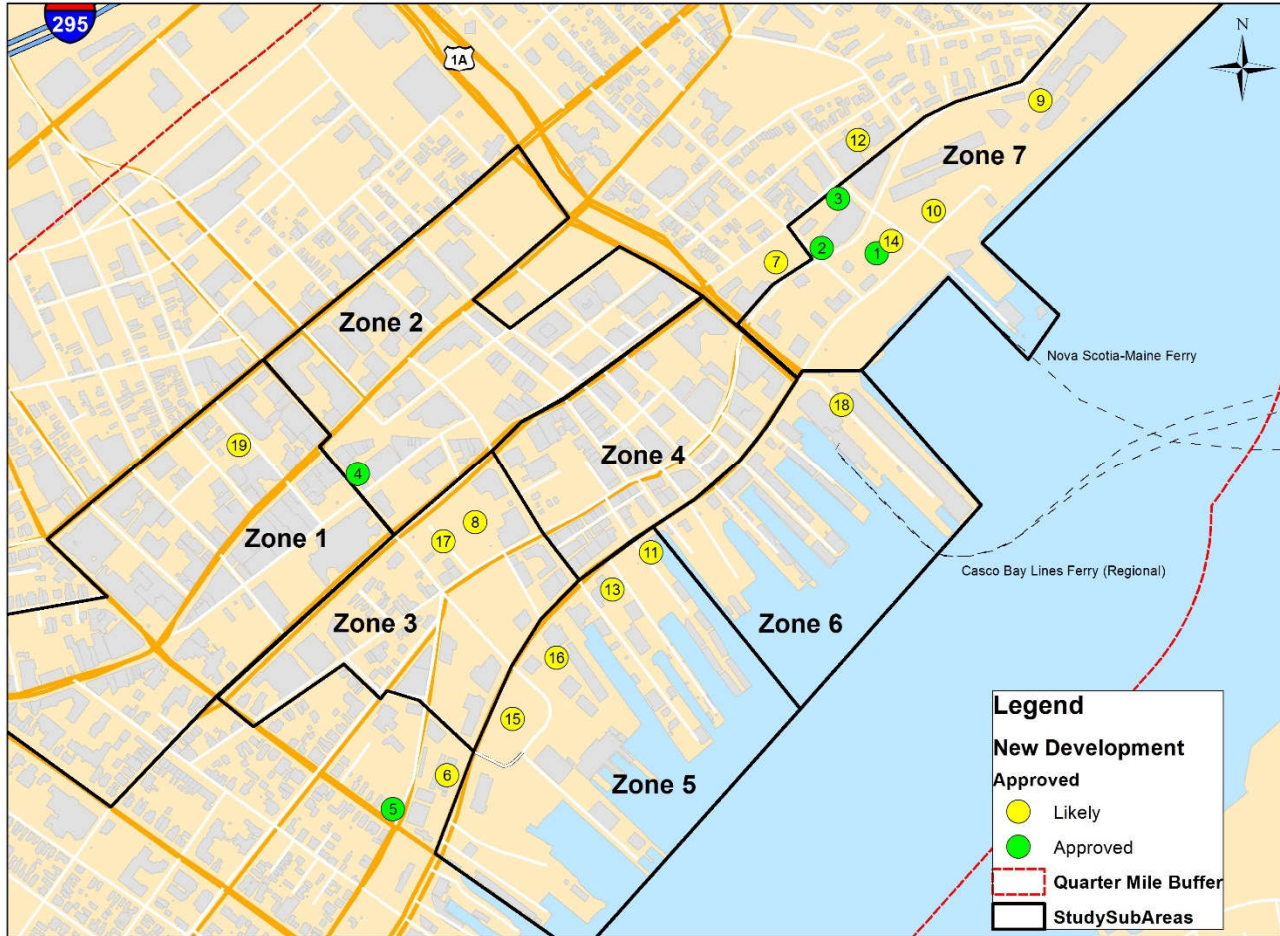


Figure 56: Future Development Projects: Approved and Likely

J.3.1 Approved but Unoccupied Land Use Developments

The developments in Table 36 are either under construction or now complete but were not occupied and therefore did not generate parking demand at the time of the parking occupancy surveys in December 2016. As a result of not having been included in the existing conditions analysis, they are included here in the future analysis.

Table 36: Approved Development Projects

Map No.	Project Description
1	158 Fore Street (AC Hotel) – 150 room hotel/4,000SF restaurant with 65 parking spaces in the Ocean Gateway Garage
2	33 India Street - 5,964SF retail/8 residential units with 44 parking spaces used in the Ocean Gateway Garage
3	8 Middle Street – 39,526SF Office/5,032SF Retail Units with 124 parking spaces used in the Ocean Gateway Garage
4	121 Center Street – 8,859SF expansion of Aura entertainment venue with 60 parking spaces used in nearby existing lots
5	101 York Street – 63 residential units/7,000SF restaurant/9,955SF retail with 211 parking spaces (95 existing surface parking spaces eliminated)

J.3.2 Assumed Future Land Use Developments Likely to Occur

Some of the developments anticipated in the next 10 years are expected to provide on-site parking, those developments are grouped in Table 37. Other developments plan to provide parking by using existing spaces in a nearby lot or garage, those developments are included in Table 38.

Table 37: Likely Developments with On-Site Parking

Map No.	Project Description
6	383 Commercial Street (former Rufus Deering site) – 22,691SF retail/275 residential units with 390 parking spaces
7	209 Fore Street (Next to Hampton Inn) – 136 hotel room with 97 parking spaces
8	3 Portland Square - 300,000SF office/30,000SF retail/35,000SF restaurant/84 residential units/145 room hotel with 1480 parking spaces (547 existing surface spaces eliminated)
9	58 Fore Street (Portland Company) – 123,917SF office/50,273SF retail/638 residential units/132 room hotel/3,800SF restaurant with 616 parking spaces
10	Thames Street Surface Lot – 80,000SF office with 450 parking spaces (100 existing spaces eliminated)
11	Fisherman’s Wharf – 93 room hotel/30,405SF office/7,625SF retail/5,200SF restaurant with 501 parking spaces (261 existing surface parking spaces eliminated)
12	Shipyards Brewery Expansion – 3,382SF retail/103 residential units with 420 parking spaces
13	230 Commercial Street (Union and Widgery Wharf) – 18,000SF office/10,000SF mixed use with 179 parking spaces (208 existing surface parking spaces eliminated)
19	Brown St Garage- 257 space parking structure for the tenants of 511 Congress St. (67 existing surface spaces eliminated)

Table 38: Likely Developments without On-Site Parking

Map No.	Description
14	158 Fore Street –48,000SF office /21,000SF retail/48-unit residential building
15	Portland Fish Pier– 10,000SF marine use/20,000SF office (20 surface parking spaces eliminated)
16	Portland Fish Pier– 20,000SF office/10,000SF light manufacturing
17	Cotton Street – 10,000SF retail/10,000SF restaurant/20,000SF office/20,000SF residential (50 spaces eliminated)
18	40 Commercial Street (Maine State Pier) – 20,000SF office

J.3.3 Development Scenario Summaries

Aggregating all identified development projects by land use type, the full build out scenario is summarized in Table 39. The amount of new parking built is shown, as well as any parking eliminated from construction.

Table 39: Summary of Approved and 10-Year Likely Future Development: Full Build-Out

	Subarea Zone							Total
	1	2	3	4	5	6	7	
Full Build-Out								
Residential Units	-	-	104	-	338	-	813	1,255
Restaurant Sqft	-	-	45,000	-	12,200	-	7,800	65,000
Office Sqft	-	-	320,000	-	88,405	20,000	291,443	719,848
Retail Sqft	-	-	40,000	-	52,843	-	85,651	178,494
Hotel Rooms	-	-	145	-	93	-	418	656
Industrial Sqft	-	-	-	-	20,000	-	-	20,000
Other Sqft	-	8,859	-	-	-	-	-	8,859
	-	-	-	-	-	-	-	-
Newly Built Parking	257	-	1,480	-	1,281	-	1,583	4,601
Eliminated Parking	67	-	597	-	639	-	100	1,403
Net New Parking	190	-	883	-	642	-	1,483	3,198
Existing Parking Reserved	-	60	-	-	-	-	233	293

Two additional scenarios were created to view the results of what might happen if less development than anticipated were to occur. As a simplified way of doing this, the likely to occur but not previously approved projects listed in Table 37 and Table 38 were reduced in total size to create a scenario described as all approved development plus 75 percent of likely development, summarized in Table 40. Similarly, Table 41 summarizes the last scenario described as all approved development plus 50 percent of likely development.

Table 40: Summary of Approved Development Plus 75 Percent of Likely 10-Year Development

	Subarea Zone							Total
	1	2	3	4	5	6	7	
Approved+ 75%								
Residential Units	-	-	78	-	269	-	616	963
Restaurant Sqft	-	-	33,750	-	10,900	-	6,850	51,500
Office Sqft	-	-	240,000	-	66,304	15,000	218,582	539,886
Retail Sqft	-	-	30,000	-	42,121	-	66,987	139,108
Hotel Rooms	-	-	109	-	70	-	351	530
Industrial Sqft	-	-	-	-	15,000	-	-	15,000
Other Sqft	-	8,859	-	-	-	-	-	8,859
	-	-	-	-	-	-	-	-
Newly Built Parking	193	-	1,110	-	1,014	-	1,187	3,504
Removed Parking	50	-	448	-	503	-	75	1,076
Net New Parking	143	-	662	-	511	-	1,112	2,428
Existing Parking Reserved	-	60	-	-	-	-	233	293

Table 41: Summary of Approved Development Plus 50 Percent of Likely 10-Year Development

	Subarea Zone							Total
	1	2	3	4	5	6	7	
Approved+ 50% Potential								
Residential Units	-	-	52	-	201	-	419	671
Restaurant Sqft	-	-	22,500	-	9,600	-	5,900	38,000
Office Sqft	-	-	160,000	-	44,203	10,000	145,722	359,924
Retail Sqft	-	-	20,000	-	31,399	-	48,324	99,723
Hotel Rooms	-	-	73	-	47	-	284	403
Industrial Sqft	-	-	-	-	10,000	-	-	10,000
Other Sqft	-	8,859	-	-	-	-	-	8,859
	-	-	-	-	-	-	-	-
Newly Built Parking	129	-	740	-	746	-	792	2,406
Removed Parking	34	-	299	-	367	-	50	749
Net New Parking	95	-	442	-	379	-	742	1,657
Existing Parking Reserved	-	60	-	-	-	-	233	293

J.3.4 Population Analysis of Development Scenarios

Between 2000 and 2010, on the Peninsula, the majority of new growth occurred in the vicinity of the Parkside, East Bayside, and India Street neighborhoods, while Downtown, the West End, and a portion of the East End, lost population. As mentioned in section B.4 in the existing conditions chapter, the population lost Downtown between 2000 and 2015 was nearly all due to losses in the population living in group quarters while the population of residents in occupied households grew a small amount, by 0.3 percent.

According to the City’s comprehensive plan (2017), the City has set a goal of growing from a current population of 66,681 residents (2016) to a population of 72,000 residents by the year 2027. The desired increase of 5,319 residents represents 8 percent in total population growth and would reflect a compound annual growth rate (CAGR) between 2016 and 2027 of 0.6 percent per year.

The comprehensive plan also says of the City’s goal of reaching 72,000 residents that, “This figure falls between the medium and high growth scenarios developed based on USM’s county growth model.”³¹ The USM county growth model estimated a range of 2030 growth scenarios, from a high growth scenario which estimated a population of 81,000 to a low growth scenario which estimated a population of 69,000.

The three development scenarios identified in this study consist of new residential units totaling 1,255, 963, and 671 units respectively for the Full Build-Out, the Approved Plus 75 Percent of Likely Development, and the Approved Plus 50 Percent Development scenarios.

The average household size in the study area is 1.5 residents based on the 2015 American Community Survey 5-year estimate. The population increases resulting from each development scenario relative to the City, the Peninsula, and the study area are summarized in Table 42.

Table 42: 10-Year Relative Population Growth of Development Scenarios

Development Scenario	Residential Units	Est. Pop Growth from Development (1.5 Persons/Unit)	Growth Relative to Study Area (2,589 residents in 2015)	Growth Relative to Peninsula (23,248 residents in 2015)	Growth Relative to City (66,681 residents in 2015)
Approved + 50%	671	1,010	39%	4%	1.5%
Approved + 75%	963	1,440	56%	6%	2.2%
Full Build-Out	1,255	1,880	73%	8%	2.8%

The 10-year Full Build-Out scenario would result in a population growth of 1,880, which is 2.8 percent of the City’s current population. The comprehensive plan does not say where the City’s goal of 8 percent growth would occur within the City, however should the Full Build-Out occur, the City would need an additional 5.2 percent in population growth relative to the present population, or 3,439 additional residents, in neighborhoods outside of the study area to reach 8 percent total growth by 2027.

Interestingly, the population growth from the Full Build-Out relative to the Peninsula is 8%. This means that if the Full Build-Out were to occur, no further population gain on the Peninsula would be necessary for the Peninsula to have grown in population by the same rate as the City’s overall 10-year goal.

³¹ Portland’s Plan (2017) pg. 100

The Full Build-Out population growth relative to the study area, which has a current resident population of 2,589, would be 73 percent over 10-years, about 9 times the rate of growth compared to the City's overall target of 8 percent. This is in keeping with trends nationally and with the City's comprehensive plan policies related to supporting mixed use growth of Downtown as the center of the City and region.

Between 2000 and 2015, the study area population in occupied households grew by 0.3% total. During the same period, the City population grew by 3.5%, as was shown in Table 6 and Table 7 in the existing conditions chapter. Should the study area experience a relative population growth of 73 percent in the next 10 years, as implied in the Full Build-Out, while the City grows by 8 percent during the same period, it would be a significant change in the relationship between growth in the study area vs. growth in the City overall in recent years. The same can be said of the Approved Plus 50 Percent Likely and Approved Plus 75 Percent Likely scenarios, though less dramatically so. The Approved Plus 50 Percent scenario would grow the study area resident population by 39 percent in 10 years. The Approved Plus 75 Percent Likely scenario would grow the study area by 56 percent in 10 years.

J.3.5 Employment Analysis of Development Scenarios

According to employment forecasts developed by the State of Maine, the City of Portland is expected to see a net increase of 16,610 jobs over the 30-year period from 2010 to 2040, a 25% total increase and a compound annual growth rate of 0.7%. In 2014, the latest estimate available, the City of Portland had 67,648 jobs³². Using the same rate of growth rate predicted by the State of Maine, 10 years of growth would result in 73,211 jobs in Portland, an increase of 5,563 jobs which is 8.2% total employment growth.

The study area currently has 17,149 total jobs. Between 2002 and 2014 the study area employment grew by 9.1% while during the same period employment in the City grew by 5.2%. The study area gained employment at 1.75 times the rate of the City during the period.

The implied employment from the three development scenarios was calculated using general employee occupancy factors for each land use. The total number of employees expected in each scenario is summarized in Table 43.

³² 2014 Longitudinal Household-Employer Dynamics. U.S. Census Bureau

Table 43: 10-year Future Employment Estimated from Development Scenarios

Land Use Type	Development Scenario		
	Approved + 50%	Approved + 75%	Full Build-Out
Restaurant Sqft	38,000	51,500	65,000
Office Sqft	359,924	539,886	719,848
Retail Sqft	98,437	137,179	175,922
Hotel Rooms	403	530	656
Industrial Sqft	10,000	15,000	20,000
Estimated Employees			
Restaurant Employees ³³	87	118	149
Office Employees ³¹	1,152	1,728	2,304
Retail Employees ³¹	179	249	320
Hotel Employees ³⁴	322	424	525
Industrial Employees ³⁵	22	33	44
Total Employees	1,763	2,553	3,342

Restaurant= 1 emp/435sf;
Office= (0.8*Gross Floor Area)/250sf;
Retail = 1emp/550sf;
Hotel= 0.8emp/room;
Industrial= 1emp/450sf

³³ For Restaurant, Office, and Retail: U.S. Green Building Council. LEED BD+C: New Construction V4 Appendix 2. Default Occupancy Counts. <https://www.usgbc.org/credits/new-construction-existing-buildings-commercial-interiors-core-and-shell-schools-new-constr-3>. Accessed July 20, 2017

³⁴ For Hotel: "Hotel Staff". City-of-Hotels.com. <http://www.city-of-hotels.com/165/hotel-staff-en.html>. This article quotes the World Tourist Organization in saying that the optimum hotel staff for a 3-star hotel is 8 employees for 10 rooms

³⁵ For Industrial: Metropolitan Washington Council of Governments. Non -Residential Employment Factors. <http://www.mwcog.org/asset.aspx?id=committee-documents/Zl1aVlhe20131217082723.pdf>

Table 44 compares the estimated employment from the development scenarios with existing employment totals in the study area and City.

Table 44: 10-year Scenario Employment Growth Relative Comparison

Development Scenario	Estimated Scenario Employment Growth (10-yr)	Growth Relative to Current Study Area Employment (17,149)	Growth Relative to Current City Employment (67,648)	Growth Relative to State Estimate of 10-yr City Employment Growth (5,560)
Approved + 50%	1,763	10%	3%	32%
Approved + 75%	2,553	15%	4%	46%
Full Build-Out	3,342	19%	5%	60%

The Full Build-Out scenario would result in a 10-year employment growth of 19 percent in the study area relative to current employment. While this is a higher rate of employment growth than the State of Maine predicted for the City in a 10-year period (8.2 percent), recent history does suggest that the study area has in fact tended to gain employment at a higher rate than the City.

However, if the study area were to gain 19 percent in employment during a 10-year period when the City gained 8.2 percent, the study area’s rate of employment growth would be 2.3 times that of the City. This means that the Full Build-Out scenario would add employment to the study area at a higher rate relative to the City’s growth rate compared to the period between 2002 and 2014, when the study area gained employment at 1.75 times the rate of the city.

The Approved Plus 75 Percent Potential scenario represents an employment growth rate in the study area of 15 percent, which would be 1.83 times more than a City employment gain of 8.2 percent, which is more in keeping with the recent past in terms of how study area employment grew relative to the City.

The Approved Plus 50 Percent Potential scenario represents an employment growth rate in the study area of 10 percent, which would be a rate 1.22 times more than a City employment gain of 8.2 percent, a slower rate of employment growth in the study area relative to the City when compared to the period between 2002 and 2014.

J.3.6 Projection of Future Parking Demand

For the existing condition, parking demand was calculated two ways: observed demand with peak season adjustments from tourism and ferry passenger data, and land-used based parking generation. For the 10-year demand projections, only the land-used based method is applied with an adjustment for ferry passenger growth. Attempting to adjust observed parking demand to the future is not typically done.

The development scenarios were apportioned to the study area using the Subarea Zones 1 through 7 geography convention from the existing conditions analysis. A combination of ITE Parking Generation (4th Ed) factors at the 50th percentile demand level and ULI Shared Parking (2nd Ed) factors were then applied to calculate a time distributed daily parking demand for each scenario. The 50th percentile ITE factors were found to be a more realistic approximation of the peak season in Portland compared to ITE’s 85th percentile factors in the existing conditions analysis, therefore the 85th percentile factors were not applied to the future scenarios.

J.3.6.1 Future Weekday Results

The following section first presents the results of only the future supply and demand analysis, then the combined future supply and demand with the existing. Figure 57 shows projected parking demand for the 10-year Full Build-Out scenario on a weekday. Between 7am and 5pm, the projected future parking demand is greater than the effective capacity of the net new parking supply.

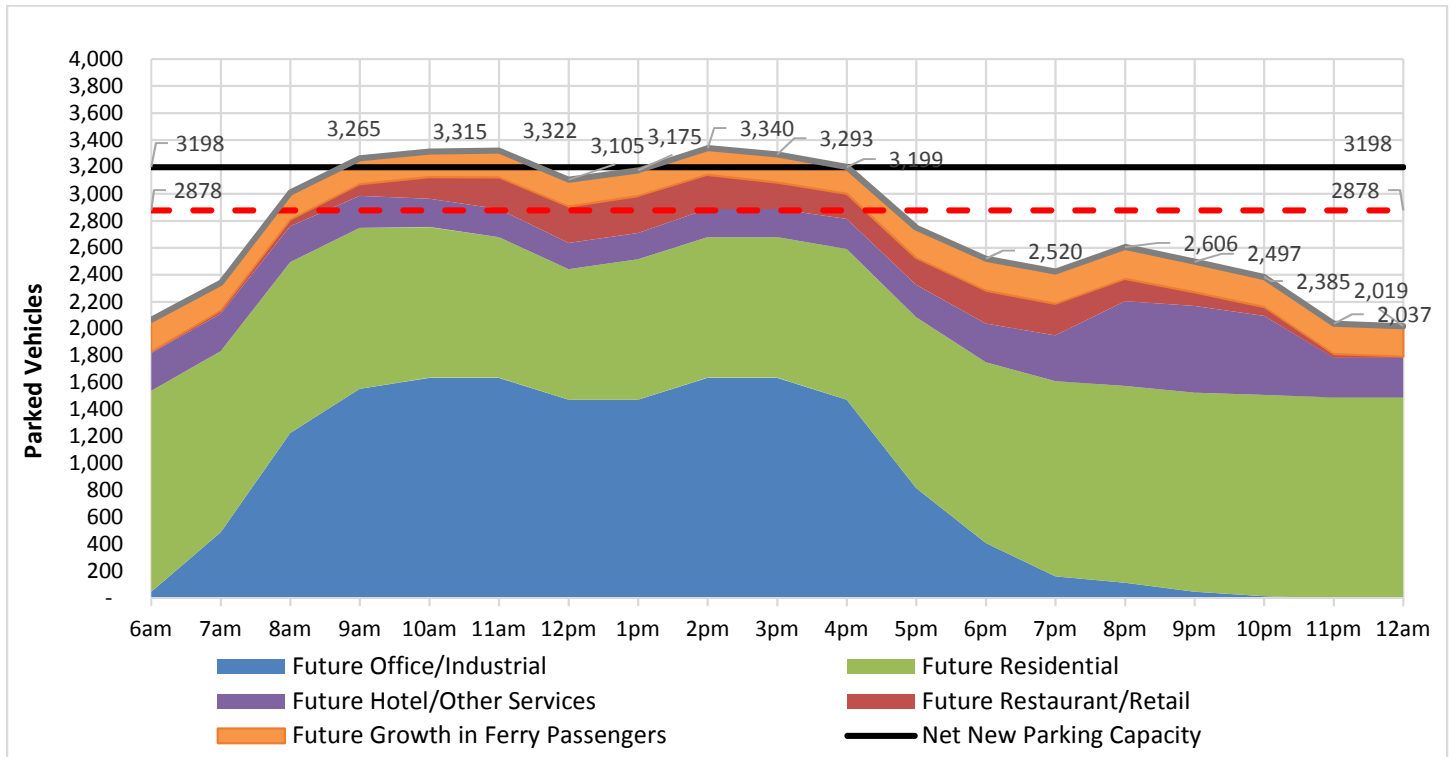


Figure 57: 10-yr Full Build-Out Scenario Only: Projected Weekday Parking Demand vs. Net New Supply

The peak parking demand projected from the new development in the Full Build-Out scenario occurs at 2pm. Table 45 shows the projected demand for each subarea zone at 2pm on a weekday.

Table 45: 10-Year Weekday Full Build-Out Parking Supply and Demand

	Projected Parking Demand from Development at 2pm	Projected New Demand from Ferry Passengers at 2pm	Total Projected Demand at 2pm	Net New Parking Total Capacity	Net New Total Capacity-Demand	Net New Effective Capacity	Net New Effective Capacity-Demand
Zone 1	-	-	-	190	190	171	171
Zone 2	10	-	10	-	(10)	-	(10)
Zone 3	980	-	980	883	(100)	795	(185)
Zone 4	-	-	-	-	-	-	-
Zone 5	580	-	580	642	60	578	-
Zone 6	40	200	240	-	(240)	-	(240)
Zone 7	1,530	-	1,530	1,483	(50)	1,335	(195)
Total	3,140	200	3,340	3,198	(150)	2,878	(460)

(Parking Deficit)

Subarea Zone 1 has a surplus of 170 new parking spaces in effective capacity. The development in Subarea Zone 1 is a parking garage intended for an adjacent tenant, which would likely open up space in other existing parking supply in Zone 1 that could absorb most but not all of the excess future peak weekday demand from adjacent Zones 2 and 3 (195 vehicles).

A common theme in all the future scenarios is that future parking demand from the projected growth in ferry passengers causes a net parking deficit in Subarea Zone 6, the location of the Casco Bay Ferry Terminal. There does not appear to be leftover room to accommodate the projected growth in ferry passenger parking demand within the net new parking supply from development. The future developments in Subarea Zone 7 alone appear to be at a deficit of parking supply during the weekday peak of 195 spaces despite approx. 1,500 net new spaces in that zone under the Full Build-Out scenario.

The final tally for the Full Build-Out has a deficit of 150 in total parking supply, but a deficit of 460 if we consider that a 10 percent reserve supply of the net new parking should be maintained to keep circulation for parking functional.

As was found in the existing conditions analysis, the peak hour of the peak season weekday is likely currently over effective capacity by 290-480 vehicles. The projected deficit from the Full Build-Out scenario could not likely be absorbed into existing parking supply under these conditions without further diminishing the study area's reserve parking capacity needed to maintain a functioning parking system.

There is however, a noteworthy caveat to the future demand results related to residential parking demand. In Figure 57, the scale of future residential development is apparent. The ITE parking generation factors predict 1.2 vehicles per unit for mid-rise urban housing. Based on the 1,255 new housing units in the Full Build-Out scenario, and carrying forward a 1 percent vacancy rate from the existing conditions, the projection for residential parking demand is just under 1,500 vehicles. The ULI time of day curves predict that at 2pm on a weekday, 70 percent of the total residential parking demand will be either occupied by resident vehicles or reserved and therefore not shared by other parking users. However, if the parking supply for the new residential development is managed in a way that maximizes the possibility of parking space re-use when residents are away, particularly during the work day, this could help lower the peak parking demand curve.

Furthermore, our projections retained the internal capture rate for office land use at 2 percent, based on the present, where only 2 percent of the employees in the study are also residents according to the latest available employment data (LEHD 2014). If future residential development in the study area were to attract a higher percentage of residents who also work in the study area, and do not use their vehicle to commute to work, this would raise the internal capture rate for office parking demand. An internally captured office trip does not need an additional office parking space because the resident employee leaves their vehicle at home. In this way, a single parking space would serve either a residential purpose or an office purpose depending on the time of day. It would help lower parking demand to promote or incentivize the occupancy of new residential development with employees (of any kind) who also work in the study area.

The results of the Approved Plus 75 Percent Likely and Approved Plus 50 Percent Likely scenarios are shown in Table 46 and Table 47 respectively. The parking demand deficit in each scenario is lower than the Full Build-Out, though not dramatically so since newly built parking was scaled down along with development in the scenarios. The spatial parking deficit patterns remain the same, since all developments considered likely but not yet approved were scaled down evenly. The projected ferry parking demand was not scaled down with the development in these scenarios. In summary, the Approved Plus 75 Percent Likely scenario resulted in a total parking deficit of 180 spaces, but an effective parking deficit of 410 spaces. The Approved Plus 50 Percent Likely scenario resulted in a total parking deficit of 195 spaces, but an effective parking deficit of 365 spaces.

Table 46: 10-year Weekday Approved Plus 75 Percent Likely Parking Supply and Demand

	Projected Parking Demand from Development at 2pm	Projected New Demand from Ferry Passengers at 2pm	Total Projected Demand at 2pm	Net New Parking Total Capacity	Net New Total Capacity-Demand	Net New Effective Capacity	Net New Effective Capacity-Demand
Zone 1	-	-	-	143	140	128	130
Zone 2	10	-	10	0	(10)	0	(10)
Zone 3	740	-	740	662	(80)	596	(140)
Zone 4	-	-	-	0	-	0	-
Zone 5	450	-	450	511	60	459	10
Zone 6	30	200	230	0	(230)	0	(230)
Zone 7	1,170	-	1,170	1112	(60)	1001	(170)
Total	2,400	200	2,600	2,428	(180)	2,185	(410)

Table 47: 10-year Weekday Approved Plus 50 Percent Likely Parking Supply and Demand

	Projected Parking Demand from Development at 2pm	Projected New Demand from Ferry Passengers at 2pm	Total Projected Demand at 2pm	Net New Parking Total Capacity	Net New Total Capacity-Demand	Net New Effective Capacity	Net New Effective Capacity-Demand
Zone 1	-	-	-	95	95	86	90
Zone 2	10	-	10	-	(10)	-	(10)
Zone 3	492	-	492	442	(50)	397	(90)
Zone 4	-	-	-	-	-	-	-
Zone 5	328	-	328	379	50	341	10
Zone 6	21	200	221	-	(220)	-	(220)
Zone 7	805	-	805	742	(60)	667	(140)
Total	1,656	200	1,856	1,657	(195)	1,491	(365)

Next, the weekday Full Build-Out scenario parking demand is combined with the existing peak season weekday parking demand from the existing condition land-use based calculations results in Figure 58. The combined parking demand is higher than the future effective capacity between the hours of 10am and 4pm. The projected peak occurs at 2pm when the demand for parking totals approximately 17,800 spaces while the effective capacity is 16,700 spaces.

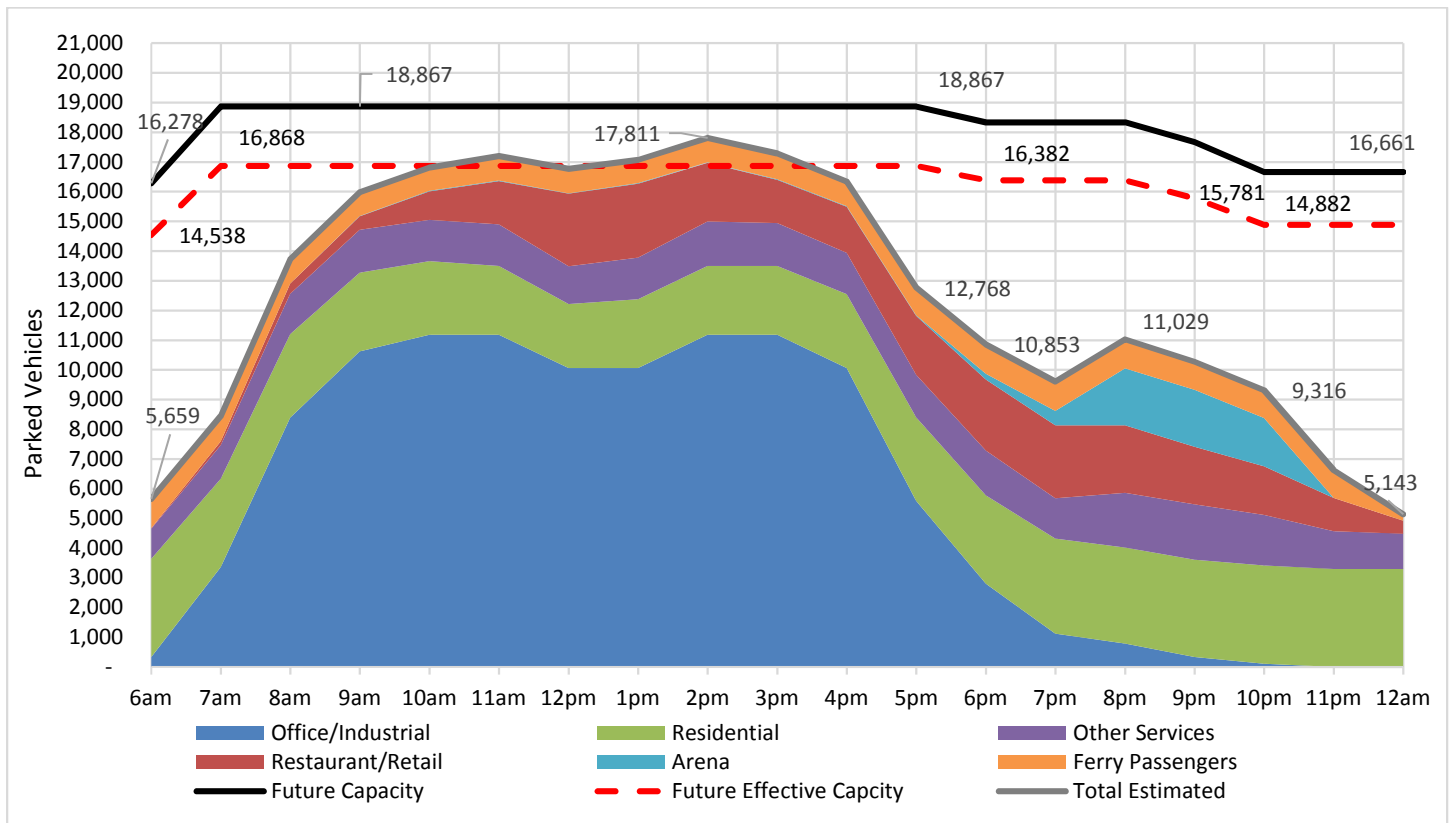


Figure 58: Weekday Peak Season Existing + 10-year Full Build-Out Parking Supply and Demand

To summarize, the weekday peak season and peak hour parking supply and demand of the combined future and existing scenarios is depicted in Figure 59 which shows the total capacity, effective capacity, and peak parking demand for each of the three 10-year future development scenarios. The results appear in tabular form in Table 48.

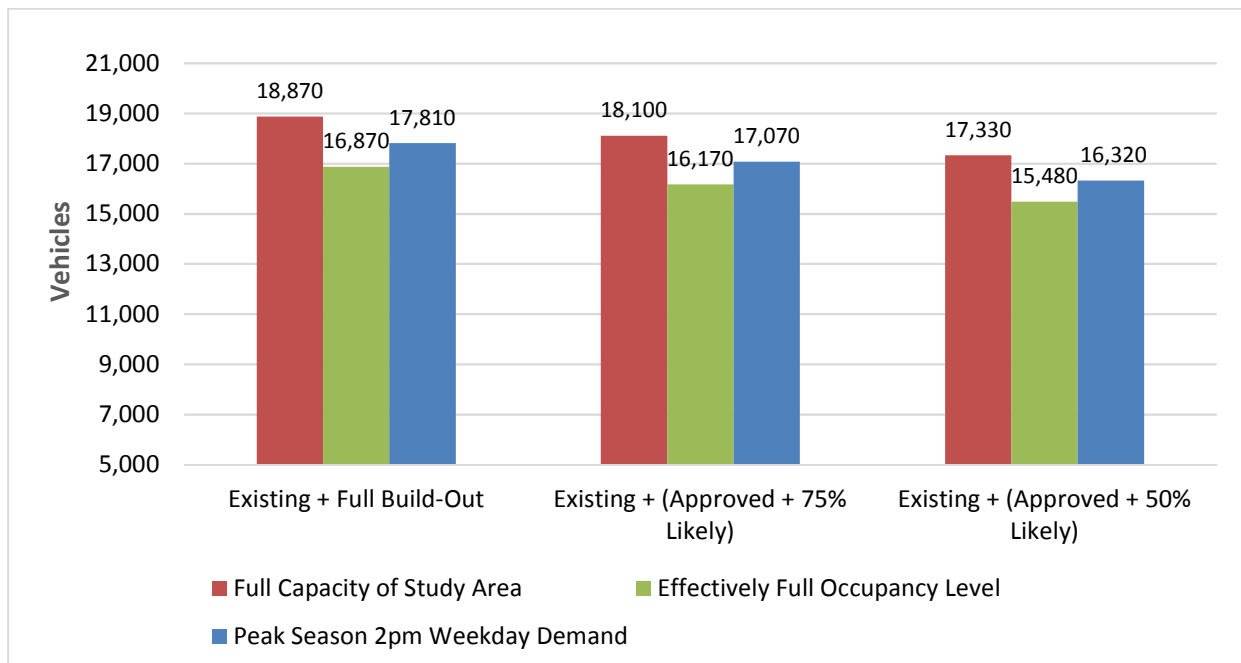


Figure 59: Weekday Peak Season and 2pm Parking Supply and Demand for Combined Existing and Future Scenarios

Table 48: Weekday Peak Season 2pm Parking Supply and Demand for Combined Existing and Future Scenarios

Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Existing + Full Build-Out	2pm	18,870	16,870	17,810	-940	1,060	1,060	940
Existing + (Approved + 75% Likely)	2pm	18,100	16,170	17,070	-900	1,030	1,030	900
Existing + (Approved + 50% Likely)	2pm	17,330	15,480	16,320	-840	1,010	1,010	840

The 10-year projected weekday results show that parking demand would need to be reduced by 940 to remain under the effective capacity of parking supply within the study area in the Existing + Full Build-Out scenario. The Existing + Approved Plus 75 Percent Likely scenario results in a need to reduce parking demand by 900 vehicles to remain under effective capacity. Finally, the Existing + Approved Plus 50 Percent Likely scenario results in a need to reduce parking demand by 840 vehicles.

J.3.6.2 Future Saturday Results

Next, the projected 10-year Saturday parking demand is described. Figure 60 shows the hourly Full Build-Out scenario net new supply and demand alone. Between 6pm and 9pm, the projected future parking demand is greater than the effective capacity of the net new parking supply, which is approximately 2,900 spaces. Demand generated by the new development is projected to rise to just over 3,000 at 8pm, 100 vehicles more than the net new effective capacity to be built.

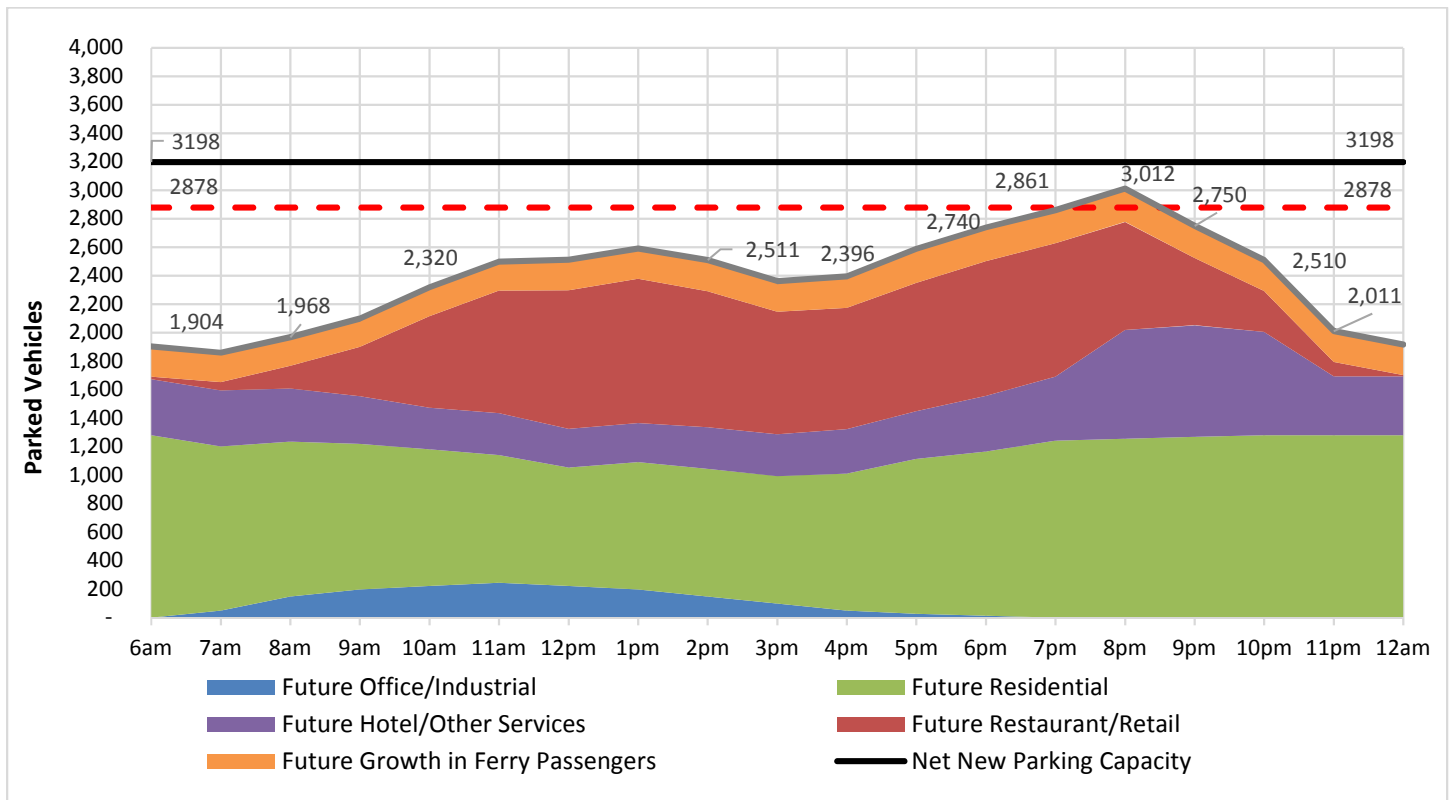


Figure 60: 10-yr Full Build-Out Scenario Only: Saturday Projected Parking Demand vs. Net New Supply

Table 49 shows the 10-year projected parking demand for each subarea zone at 8pm peak hour on Saturday. The development in Subarea Zone 2 is an evening entertainment venue and the generated demand is based on full occupancy of the 1,000 seats. The net new parking in Subarea Zone 3 has a surplus of 395 spaces because of the lack of office demand during the weekend evening peak. In Subarea Zone 5, the net new parking is within 20 spaces of supplying enough parking for the evening generated parking demand in the zone. Ferry passenger parking demand is at its peak in the evening and creates a projected deficit of 240 vehicles generated from the Ferry Terminal in Zone 6. Subarea Zone 7 has a projected deficit of approximately 45 from hotel, retail, restaurant and residential generated demand. While the Full Build-Out scenario creates more net new total parking spaces than demand generated on Saturday at 8pm, there is a parking deficit of approximately 130 spaces relative to net new effective parking capacity.

Table 49: 10-Year Saturday Full Build-Out Parking Supply and Demand

	Projected Parking Demand from Development at 8pm	Projected New Demand from Ferry Passengers at 8pm	Total Projected Demand at 8pm	Net New Parking Total Capacity	Net New Total Capacity-Demand	Net New Effective Capacity	Net New Effective Capacity-Demand
Zone 1	-	-	-	190	190	171	170
Zone 2	390	-	390	-	(390)	-	(390)
Zone 3	400	-	400	883	480	795	395
Zone 4	-	-	-	-	-	-	-
Zone 5	600	-	600	642	40	578	(20)
Zone 6	-	240	240	-	(240)	-	(240)
Zone 7	1,380	-	1,380	1,483	100	1,335	(45)
Total	2,770	240	3,010	3,198	180	2,878	(130)

The Saturday Approved Plus 75 Percent Likely scenario parking demand deficit is higher than the Full-Build Out because the approved development in Subarea Zone 2 and ferry passenger parking demand are not scaled down while many of the likely developments that include net new parking are scaled down. The Approved Plus 75 Percent Likely result is a deficit of 300 spaces relative to net new effective capacity as shown in Table 50.

Table 50: 10yr Saturday + 75% Likely

	Projected Parking Demand from Development at 8pm	Projected New Demand from Ferry Passengers at 8pm	Total Projected Demand at 8pm	Net New Parking Total Capacity	Net New Total Capacity-Demand	Net New Effective Capacity	Net New Effective Capacity-Demand
Zone 1	-	-	-	143	140	128	130
Zone 2	390	-	390	-	(390)	-	(390)
Zone 3	300	-	300	662	360	596	300
Zone 4	-	-	-	-	-	-	-
Zone 5	480	-	480	511	30	459	(20)
Zone 6	-	240	240	-	(240)	-	(240)
Zone 7	1,080	-	1,080	1,112	30	1,001	(80)
Total	2,250	240	2,490	2,428	(70)	2,185	(300)

The Approved Plus 50 percent Likely scenario has a final deficit of 460 relative to net new effective parking supply at 8pm on Saturday as shown in Table 51.

Table 51: 10yr Saturday + 50% Likely

	Projected Parking Demand from Development at 8pm	Projected New Demand from Ferry Passengers at 8pm	Total Projected Demand at 8pm	Net New Parking Total Capacity	Net New Total Capacity-Demand	Net New Effective Capacity	Net New Effective Capacity-Demand
Zone 1	-	-	-	95	95	86	90
Zone 2	390	-	390	-	(390)	-	(390)
Zone 3	200	-	200	442	240	397	200
Zone 4	-	-	-	-	-	-	-
Zone 5	360	-	360	379	20	341	(20)
Zone 6	-	240	240	-	(240)	-	(240)
Zone 7	770		770	742	(30)	667	(100)
Total	1,720	240	1,960	1,657	(305)	1,491	(460)

Although all three 10-year Saturday scenarios are projected to generate more parking demand than net effective supply, the existing condition land-used based calculated results had more than enough surplus parking capacity to accommodate the future Saturday demand. Figure 61 combines the Existing and Full Build-Out scenarios.

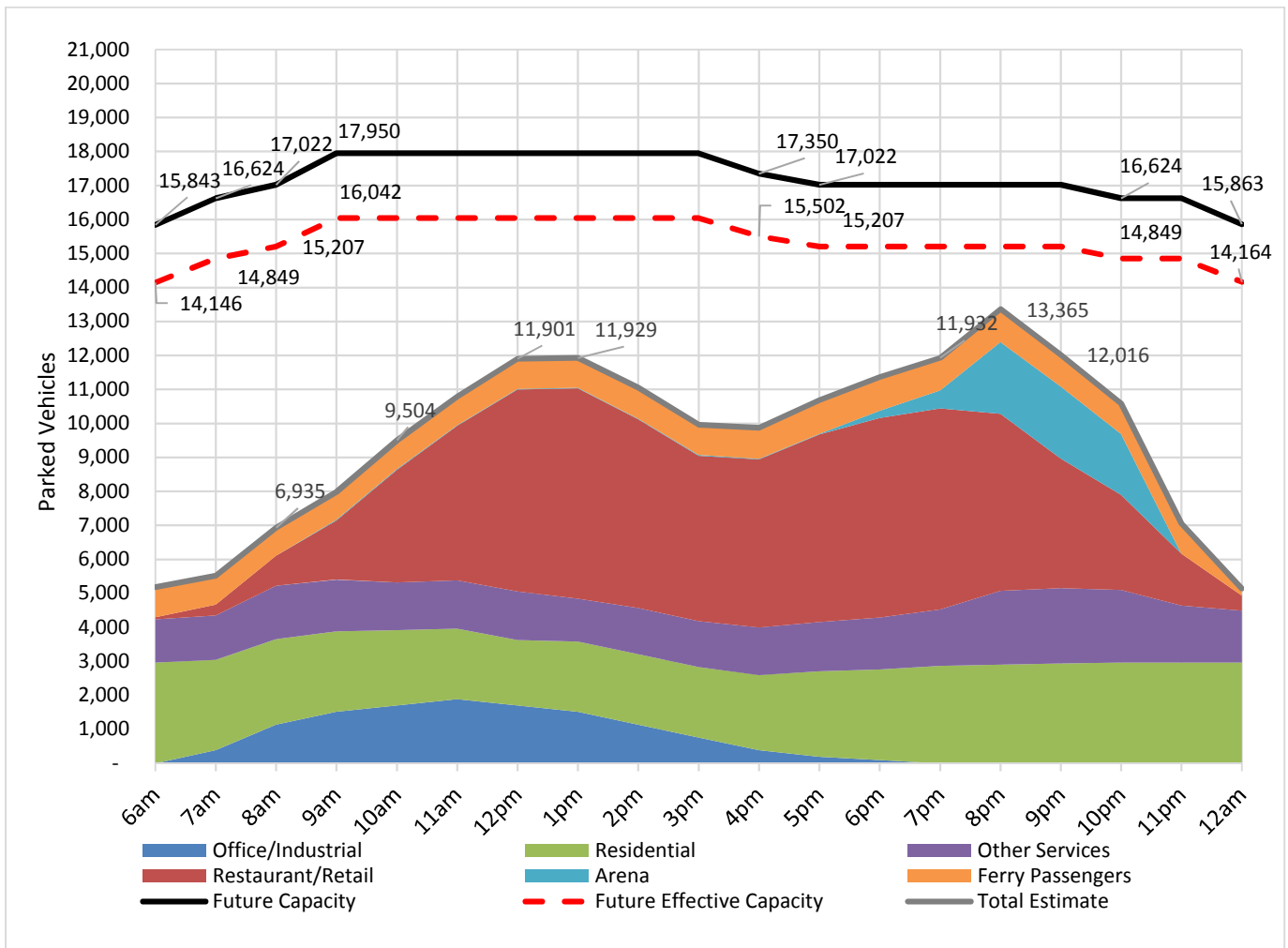


Figure 61: Saturday Peak Season Existing + 10-year Full Build-Out Parking Supply and Demand

The combined existing and future Saturday peak hour results are shown as a chart in Figure 62.

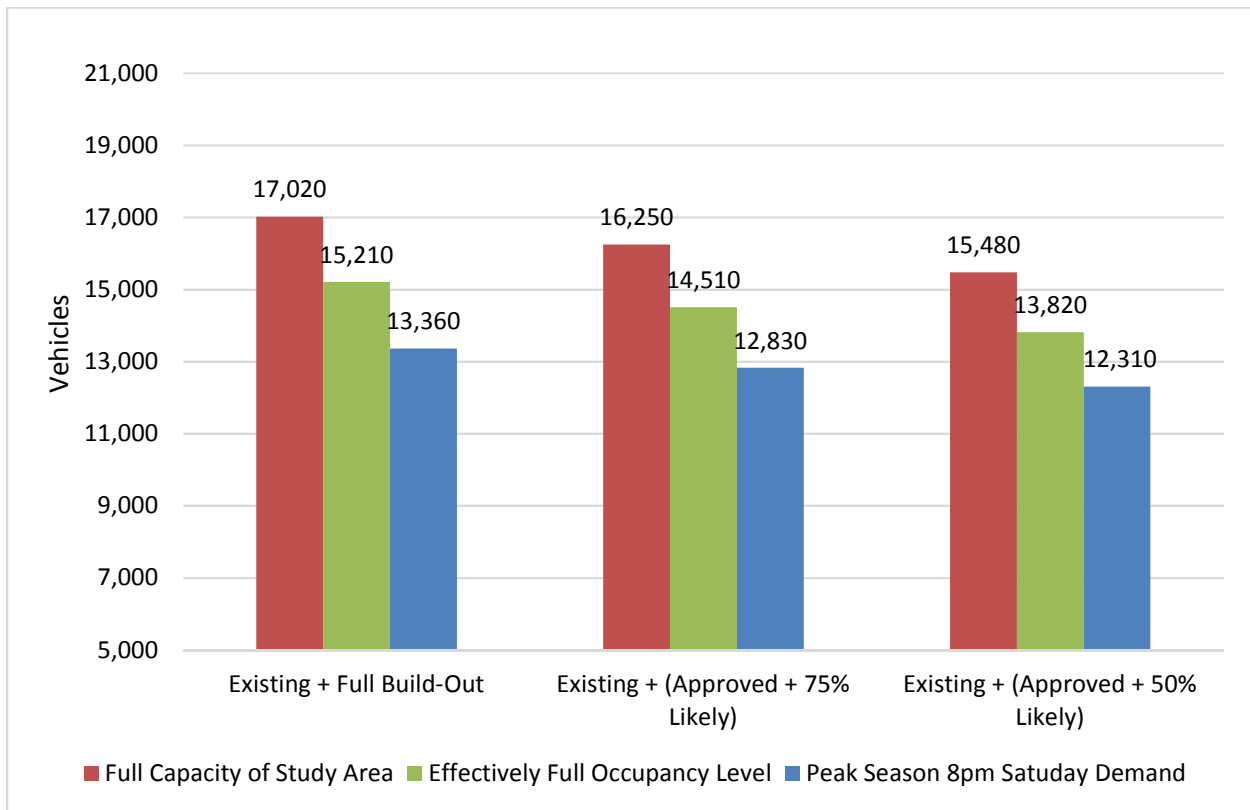


Figure 62: Saturday Peak Season 8pm Parking Supply and Demand for Combined Existing and Future Scenarios

The 10-year combined existing and future parking projections for all scenarios find that, as was the case in the existing condition, parking supply is higher than demand during the Saturday peak as summarized in Table 52. The future scenarios do however result in a slight decrease in the amount of parking available until effectively full on a Saturday at 8pm. In the existing condition, the Saturday 8pm peak had 1,940 available spaces until effectively full, while the Existing plus Full Build-Out scenario has 1,850 spaces available until effectively full. Should the existing trend of over capacity on-street parking with simultaneous under capacity off-street parking continue, the added 10-year parking demand under any of the future scenarios could further shape perceptions of Portland as being a difficult place to find parking.

Table 52: Saturday Peak Season 8pm Parking Supply and Demand for Combined Existing and Future Scenarios

Demand Estimation Method	Peak Hour	Full Capacity of Study Area at Peak	Effectively Full Occupancy Level	Peak Demand	Spaces Available Until Effectively Full	Reserve Spaces Remaining	Total Remaining Spaces	Parking Demand Reduction Needed
Existing + Full Build-Out	8pm	17,020	15,320	13,360	1,960	1,700	3,660	-
Existing + (Approved + 75% Likely)	8pm	16,250	14,510	12,830	1,680	1,740	3,420	-
Existing + (Approved + 50% Likely)	8pm	15,480	13,820	12,310	1,510	1,660	3,170	-

J.4 Conclusion

In the future parking demand section, we have shown the magnitude of approved and likely 10-year development in the Portland study area. The development was shown to exhibit clustering in Subarea Zones 3 and 5 as well as separately in Subarea Zones 6 and 7. Significant increases in study area resident population and employment are anticipated. The rate of population and employment growth would be significantly higher in the study area as compared to rates that have been projected for the City of Portland overall. This is not necessarily incompatible; however, it would require that the study area add employment and especially residents at a higher relative rate than the overall growth rate of the City compared to how the study area and City grew during the past 15 years. This is in keeping with policies of Portland’s plan.

A 10-year growth assumption for ferry passenger demand was made by continuing the trend of the previous 5-years. Associated parking demand from ferry passenger growth was calculated to be an additional 240 vehicles during the peak season. The past 5-years saw a healthy growth in ridership, and continuing this trend may result in a future projection somewhat on the high or conservative side. Nevertheless, the future scenarios did not provide enough surplus net new parking that could absorb growing parking demand from ferry passengers.

Although tourism in Maine has been increasing robustly during the last 5-years, the data was not as clear on visitation to the Portland region which may be relatively flat as a lower share of day visitors to the state reported the region as their primary destination even though the total number of state visitors increased. Tourism was accounted for in the future demand analysis as part of the ferry passenger growth trend and it is also embedded in the future land use parking demand generation from the addition of new land use development such as restaurant, retail, and hotels which has been scaled in anticipation of tourism.

Three future development scenarios, a full build and two scenarios that allowed for the possibility of less development, were analyzed using a combination of ITE Parking Generation factors and ULI shared parking factors. The key results are summarized in Table 53, the final figures have been adjusted by the difference between the land-use generated existing conditions results and the observed and adjusted existing conditions results. This calibration was made assuming the observed and adjusted existing conditions results were more accurate than the land-use based results and carrying the difference forward into the future.

Table 53: Future Demand Analysis Adjusted Results

Scenario	Study Area Peak Season Parking Demand Deficit Relative to Effective Capacity (in vehicles during the peak hour)	
	Weekday	Saturday
Existing Condition Observed + Adjusted	290	0
Existing Condition Land-Used Based	480	0
Difference Between Existing Conditions Methods	190	0
#1 Existing Condition Land-Used Based + 10-year Full Build-Out	940	0
#2 Existing Condition Land-Used Based + 10-year Approved & 75% Likely Development	900	0
#3 Existing Condition Land-Used Based + 10-year Approved & 50% Likely Development	840	0
#1-(Difference Between Existing Conditions Methods)	750	0
#2-(Difference Between Existing Conditions Methods)	710	0
#3-(Difference Between Existing Conditions Methods)	650	0
Recommended Planning Range Goal for 10- year Parking Demand Reduction	700-750	0

It should be recalled that an additional 1,307 spaces in structured and surface lot parking available to the public with an effective capacity of 1,176 vehicles outside of the study area within a quarter-mile buffer. This additional parking supply serves a combination of travelers destined for the study area and travelers destined for land use outside of the study area. The existing parking demand for land use outside of the study area was not observed. It should not be assumed that this additional capacity can offset the projected parking demand deficit in the study area alone. Analysis in the existing conditions chapter showed that the quarter-mile buffer area parking supply is likely already critical to meeting the monthly parking demand of employees in the study area.

We therefore recommend that the City of Portland plan to reduce weekday parking demand in the study area by a range of 700-750 vehicles in a 10-year horizon. We propose a goal of managing parking demand in the study area to be at or just under the weekday peak hour effective capacity of parking supply inside of the study area, which is projected to be in a range between approximately 15,480 to 16,870 parking spaces depending on the future build scenario.

In the following section, we offer a set of recommendations to address Portland’s critical need to manage overall parking demand in the study area and the specific parking demands of key user groups experiencing difficulty parking.

K. Strategy Recommendations and Development

K.1 Introduction

In Task 1, the existing conditions report determined that overall parking demand in the study area, including on-street and off-street parking, is likely 290-480 vehicles over effective parking capacity in the midday period on weekdays during the peak summer season. Furthermore, it was found that during weekday evenings (after 5pm) and on weekends, parking supply in the study area is well below effective capacity overall. However, on-street parking during the evening on weekdays (5pm-8pm) and after 1pm on Saturday is at or over effective capacity along key commercial streets in the study area.

The most urgent existing condition parking challenges are identified as:

- There is a scarcity of monthly parking offered for employees on weekdays during the work day.
- There are limited low-cost parking options for low wage earners in the study area.
- There are limited low-cost multi-day and monthly options for island residents who have a need to park a vehicle on the mainland accessible from the ferry terminal.
- Visitors during the summer season compete with employees of the study area for day parking, contributing to off-street parking scarcity mid-day on weekdays.
- High rates of on-street parking occupancy during weekday evenings and on weekends, in many sampled locations above 85%, is contributing to the perception that there is no parking, when in fact ample off-street parking is available during these periods, but at a higher cost.
- Unrestricted parking on streets outside of the study area, but within a walkable distance, are under pressure of increased use by travelers to the study area seeking day parking, including employees and day visitors. This is particularly relevant weekdays during the peak summer season when study area parking demand is at or over effective capacity.

In Task 2, the future demand report, three future development scenarios were identified, consisting of approved projects and likely projects built out to 50%, 75%, and 100% of proposed development capacity.

The main parking challenges associated with the identified future parking scenarios are:

- In the Eastern Waterfront area, Subarea Zone 7, and the area surrounding the Casco Bay Lines Ferry Terminal, Subarea Zone 6, the projected demand associated with new mixed-use development combined with growth in ferry passenger parking demand will likely exceed net new parking supply on both peak (summer) weekdays in the afternoon and on weekends in the evening.

While there is existing off-street parking capacity elsewhere in the Study Area on weekends to accommodate the growth in parking demand, there does not appear to be existing capacity on weekdays during the afternoon peak hour to accommodate the amount of parking demand that is projected to be over capacity from Subarea Zones 6 and 7.

- In Subarea Zone 3 located Downtown, the projected demand associated with new mixed-use development will slightly exceed the net new parking supply in that zone on peak season (summer) weekdays during the afternoon. Net new parking supply in adjacent Subarea Zone 1 will help to offset most of the projected parking deficit in Subarea Zone 3, but not entirely.

The following recommended strategies are made to address overall parking demand and the specific parking demands of key user groups including all employees, low-wage employees specifically, and island residents.

K.2 Recommended Strategies

K.2.1 Explore the Formation of a Non-Profit Transportation Association

A new non-profit organization, a Transportation Management Association (TMA) being just one example, could serve as an important entity for bringing private and public-sector interests together to address collective parking challenges and other mobility issues affecting the study area. We recommend the role of the organization to be a facilitator of solution-finding for members and to play an important informational role to businesses in Portland.

Commonly, transportation associations form to pool private funding for shuttle services created to solve employer mobility challenges. We do not necessarily recommend that the association itself contract with a fixed route shuttle service provider. Instead we recommend that the association become well-versed in existing and emerging transportation network company (TNC) services that use customized mobility solutions for individual members or partnered members.

The advantages of TNC solutions over traditional fixed-route private shuttles are the possibility for on-demand and custom routing, custom smartphone apps can improve the user experience, and depending on the arrangement, members can pay for only the rides they use.

Key issues that a new transportation association could play an important role in addressing are:

- The difficulty employers and their employees are having securing monthly parking; specifically, we recommend the crafting of customized TNC solutions for employee mobility that could include new park and ride lots at underutilized and lower cost locations outside of the study area.
- Helping to connect employers with transit mobility solutions for employees. This could range from practical matters such as helping to integrate the procurement of transit passes, to a larger-scale programmatic role of serving as a unified voice for members to dialog with regional public transit providers, Amtrak, the JetPort etc.
- Collecting metrics on mobility issues, such as parking demand, that may help members solve mobility problems through coordination and sharing of unused parking spaces or crafting of another policy.
- Acting as a clearinghouse for information and ideas regarding Travel Demand Management. The association could also provide a venue for voluntary compliance monitoring with TDM ordinances.
- Identifying parking management strategies or programs that could benefit the area collectively or strategies to achieve a specific initiative, for example a large-scale special event.
- Marketing mobility and parking solutions to visitors to help prevent the perception that Portland is a difficult place to visit because of hard to find and expensive parking.

K.2.2 Partner with Transportation Network Companies to Address Specific Parking Challenges

We recommend that the City of Portland explore partnering with TNCs to create customized programs to address three specific issues: 1) island resident parking supply; 2) the limited availability of low cost parking for low-wage earners; and 3) surges in peak season visitor parking demand.

- The City could partner with a TNC to create a customized program for island residents to improve mobility between the Casco Bay Ferry Terminal and a location where multi-day parking is lower cost, more available, and more reliable compared to the current situation of a crowded on-street resident parking zone. The City could explore ways to share the cost of this program with the island resident on a per-ride basis, a one-time annual fee, or another means. We strongly suggest keeping the existing on-street resident zones for island residents, and we suggest this new option as an alternative that could be very attractive given the right price point and convenience of use.

The Chebeague Transportation Company (CTC) currently operates a shuttle bus between a satellite parking lot on Route 1 in Cumberland and the CTC ferry terminal in Yarmouth. Our recommendation for the Casco Bay Ferry Terminal would work similarly, but replaces a shuttle bus with on-demand TNC service utilizing a smartphone app.

- The City could partner with a TNC to create a customized program for low-wage earners who are having difficulty finding affordable parking options close to their employer. The City could manage membership to such a program by requiring applicants already meet the requirements of another existing income restricted program. The program would allow low-wage earners to use a coupon code or custom app to use TNC travel between their employer and another location such as a park and ride lot or a transit center during defined working hours. The City could share the cost of this program with the employee on a per-ride basis, a one-time annual fee, or another means.
- The City could partner with a TNC to coordinate a well-publicized option for peak season visitors to park remotely at an underutilized lot, perhaps a distant lot with good highway access, and use TNC services to ride to and from the study area, particularly those traveling to the Old Port, Waterfront, and Casco Bay Islands. The lot could offer day and multi-day pricing that together with the cost of the TNC ride could be comparable to what would be paid for off-street parking in the study area. We do not necessarily suggest the City play a role in cost sharing for visitor rides, but rather set the cost of parking in the remote lot intentionally to make the program viable.

K.2.3 Expand Specific Island Resident Parking Programs

Expand island resident parking programs to include a program where island residents may remit a resident parking permit in exchange for ridesharing subsidy or stipend to use as they see fit. This is like the suggestion above, but could be less programmatic and may not include a designated off-site lot. The City could also explore the possibility of allowing island residents to park in another residential zone that has surplus on-street parking and use ridesharing or transit to reach the Ferry terminal.

K.2.4 Pilot Test Higher Cost On-Street Parking in High Demand Areas

One of the main findings of the study was that on-street parking is at or over capacity during weekday evenings and during most observed hours on Saturday. One side effect of over capacity on-street parking for businesses is lower customer turnover. Residents, employers, and their visitors may experience more difficulty finding short term on-street

parking, and a higher incidence of double parking for pickup and drop-off activities. Stakeholders will need to define what an acceptable level of on-street parking occupancy is, we suggest 85 percent, and if it is acceptable to use meter pricing as a mechanism of influencing turnover and on-street occupancy levels.

If higher turnover is defined as a goal, one way to increase parking turnover would be to pilot test higher on-street parking rates and extended meter hours to 8pm in high demand areas such as Commercial St. A pilot test would mean a short-term experiment with a known end that is followed by an assessment of the results. The goal of the pilot would be to determine if Portland parking users respond to the price increase with higher turnover rates and whether stakeholders decide the higher turnover rate was beneficial.

K.2.5 Extend On-Street Meter Hours to 8pm City Wide

The on-street occupancy data shows that occupancy levels rise above capacity on weekends beginning near 4pm when a user would be able to pay for two-hours of on-street parking and leave a vehicle for the remainder of the evening. If stakeholders decide that maintaining a two-hour turnover up until 6pm is beneficial, which it may be for some stakeholders such as restaurants, the meters could be extended until 8pm so that cars cannot be left on the street for the evening with a two-hour payment until 6pm. Additional outreach would be necessary before any such change could be implemented.

K.2.6 Improve Parking Management and Technology

It is recommended that parking operators continue to utilize the latest technology in operating their parking supply including sharing pricing, hours, and even real-time occupancy data with customers via smartphone apps. The more customers know about where parking is available and at what price before departure or en route, the better the parking experience and more efficient use of available space study area wide.

To address the issue of overcrowding of on-street parking during evenings and weekends while off-street parking is underutilized, parking managers could consider offering more competitive pricing with on-street rates during the first one or two hours of stay.

More operators might consider offering evenings only monthly passes that might attract evening shift workers who would otherwise avoid higher priced hourly parking close to their employer.

Implement Transportation Systems Management (TSM) practices to better utilize existing parking supplies. One of the challenges associated with parking in Portland is knowing where to park. There are several approaches to addressing this problem. First, we recommend the review and implementation of any remaining initiatives identified in the 2013 Portland Peninsula Vehicular Wayfinding Plan specifically related to parking signage and wayfinding in the Old Port, Waterfront, Arts District, and Eastern Waterfront. If recommendations in the plan are found to be out of date, we recommend a new City led effort to study how parking wayfinding can be optimized through signage and technology.

Technology is the wayfinding of the future. Encourage maximum use of technological tools that guide the public to available parking spaces at known prices. Smartphone apps can market and incentivize the use of existing parking by allowing users to price compare, reserve, purchase, and way find with one tool. Such programs maximize the efficiency of existing parking while reducing congestion and vehicle miles traveled.

K.2.7 Change Parking Requirements and Regulations

Manage parking demand by reducing parking requirements for residential units in the urban core to less than 1 space per unit, while slightly increasing parking requirements for office from one space per 400sqft to one per 300sqft. The projected parking demand suggests that weekday mid-day parking will be over effective capacity. Increasing office parking requirements slightly will relieve part of this demand gap. However, we do not recommend closing the new gap entirely with new parking supply. Some of this parking supply gap should be closed through better management of citywide parking supplies. We suggest targeting 50% of the parking supply gap to be closed through parking requirements for land use approvals, while closing the balance through parking management strategies.

Any increased structured parking supply should be specifically designed to be repurposed as retail space, due to the widely anticipated likelihood that structured parking demand will decrease substantially with the advent of the autonomous vehicle. While some believe that wide adoption of autonomous vehicles is many years in the future, it is important to note that structured parking costs are routinely amortized over 30 or more years. Based on current studies, it is highly likely that autonomous vehicles will result in a substantial reduction in parking demand, thereby undermining the financial models that allow for commercial parking garage developments. Many underwriters are already questioning the validity of parking garage pro formas in dense urban environments.

K.2.8 Improve Parking Policies in the Context of Land Uses Permits

As part of the city's upcoming land use code rewrite, consider requiring additional parking data and or trip or parking generation studies as a component of all site plan review. Requesting that developments provide parking and trip generation information on a periodic basis will help the city calibrate its parking policies to reflect actual demand and allow for more informed policy decisions. This data collection effort should include pricing information (if applicable) for spaces that are sold or rented to tenants.

In addition, strengthen the policy of allowing fees-in-lieu. If the current \$5,000 minimum per space program has had low participation, the problem could be uncertainty about how the City's Sustainable Transportation Fund will benefit development. Contributors to the fund must understand how the funds will be used. This is critical to lenders and investors looking to underwrite land development projects so the payment is viewed having a benefit for the project. The City should consider more marketing or public engagement related to the annual Sustainable Transportation Fund Appropriations Schedule. The City could use a variety of platforms to state how the Sustainable Transportation Fund is being used, follow through on the plan, and then let constituents know via social media or other means the results of the investment.

K.2.9 Increase Car Sharing Use

Facilitate car sharing through parking strategies. The use of U-Car and other car share opportunities can have a significant benefit for islanders and residents of the study area if made convenient enough. Car sharing can reduce demand for a landside car, while facilitating travel on the Peninsula for routine trips. One or more shared cars should frequently be accessible from the Casco Bay Lines Ferry Terminal, in the parking garage or via a short trip either by foot or using a ridesharing app.

Additionally, new peer to peer car sharing apps, e.g. Getaround or a similar company, could allow residents of the study area to rent their personal vehicles to islanders or vice versa. A resident who lives and works in the study area may have a vehicle that is parked at home during the work day which an islander could rent. An islander who keeps a vehicle on the mainland but does not use it daily could rent it to residents of the study area on a short-term basis. The apps simplify the coordination and transactions necessary to rent. The companies provide special insurance, and allow the car owner to choose renters with favorable feedback ratings.

K.2.10 Continue Implementation of TDM Recommendations from the 2008 Peninsula Transit Study

Continue to pursue the adoption of multiple strategies for single occupancy vehicle parking demand reduction through travel demand management (TDM) in the study area as recommended in the 2008 Portland Peninsula Transit Study. The study outlined TDM strategies, some of which have been implemented, e.g. fee-in-lieu payments as part city's zoning code and the creation of the Sustainable Transportation Fund. However, unimplemented strategies remain. TDM strategies that could address the Study Area's parking challenges include:

- Requiring new development in the study area become a member of the new transportation association and require the implementation of TDM ordinances such as:
 - Appointing a mobility coordinator for the development to interact with the transportation association.
 - Provide a car share space on-site.
 - Offer employees the option to purchase a pre-tax monthly transit pass.
 - Create incentives and educate employers on parking cash-out programs where employees may forgo an employee provided parking spot for a one-time payment.
 - The unbundling of parking and residential units so a resident is not obligated to take a parking space if they do not want one or own a car.

The Peninsula Transit Study also made a number of detailed transit service recommendations that have yet to be achieved. We recommend continued pursuance of the following goals:

- Increase the peak period frequency of key Peninsula routes to 10-20 min headways
- Provide a direct link between the Portland Transportation Center and Downtown/ Waterfront. As development on the Eastern Waterfront progresses, service should extend there as well.
- Use signal prioritization and other techniques (e.g. queue jump lane) to help move buses through congested areas.

K.2.11 Additional Transit Recommendations

Additionally, we recommend the consideration of a downtown circulator route specifically meant to transport riders between the Waterfront and Cumberland Ave in a loop. There is a need to make available parking uphill from the Waterfront more attractive to better distribute parking demand within the study area.

The introduction of GPS enabled bus arrival tracking in Portland during 2016 is an important advancement. The City should encourage the creation of additional smartphone apps that utilize the open-source bus location data. The City could organize a hack-a-thon, a contest, or another incentive to spur user engagement with the new information technology.

K.2.12 Bicycle Infrastructure

It is encouraging that the final design for the Franklin Ave reconstruction will include new bike lanes to both cross Franklin Ave and travel along it. The eventual realization of that project should help raise the bicycle commute share to the study area. If the City can raise the bicycle commute share during the peak summer season especially, it could play a role in managing peak parking demand.

Additional investment in bikeways, bike lanes, bike paths, and byways to improve bicycle access from off-peninsula is needed to raise the bicycle mode share of travel to the study area.

The City will have the opportunity to observe the new bike sharing initiative to be launched in Portland in 2018. We recommend the City support additional bike share infrastructure should the pilot program prove successful. Bike sharing could be part of a mobility strategy between outlying parking areas or transit hubs and high-demand destinations.

K.2.13 Convert Unrestricted Parking

If further study shows unrestricted on-street parking within walking distance to the study area is over capacity and is being used for longer duration parking than desired by stakeholders. Conversion of unrestricted spaces to time limited zones or metered spaces is recommended. It is recommended that this be carried out gradually so that the effects of parking demand on the study area can be monitored for adverse impacts should significant new parking demand be forced into the study area. The unrestricted spaces on Commercial St west of the study area could potentially be converted to metered spaces if a successful low-wage earner remote parking program were implemented as described in Section K.2.2, since those spaces are intended to provide at least some no-cost parking near the study area.

K.2.14 Marketing and Advertising

The City could continue to support a marketing and advertising campaign to raise awareness and improve perception about multi-modal access to the study area; including parking strategies, smartphone apps, and parking prices. Campaigns should also highlight transit and bicycle commuting opportunities.

K.2.15 Additional Data Collection

We recommend periodic data collection on parking demand, particularly during the peak season since this effort collected data during the winter season. Also recommended is data collection that would measure public knowledge about multi-modal access to the study area and willingness to pay for transportation and parking services. Establishing baseline data on these topics will greatly help to develop performance measures for any solutions the City pursues. Having high quality measures of effectiveness can be key to attracting state and federal funding.

K.2.16 Construct Additional Structured Public Use Parking Supply

If stakeholders decide that additional parking capacity is a necessary component to the City's overall parking demand management strategy. The construction of up to approximately 500 to 750 new structured parking spaces for public use by travelers to the study area could be explored. We recommend the consideration of repurposeable parking structure design to allow for the possibility of a change in use over the design life of the structure.

L. Implementation and Funding

This section identifies potential local, state, and federal funding sources applicable to the recommendations in Chapter K. First, a short description of potential funding sources, then Table 54 summarizes each recommendation from Chapter K with applicable funding sources.

L.1 Local Funding Suggestions

A Development Impact Fee

The proposed fee is a transportation impact fee scaled to the size, intensity, and or land use type of new development in the study area for funding travel demand management, workforce mobility, or parking demand management related initiatives. This fee would be separate from the existing optional parking in-lieu of fee in the City's Land Use Code.

A Special Purpose On-Street Parking Meter Rate Increase

The proposed meter rate increase is for high-demand locations, such as Commercial St, Exchange St, and Middle St. It is suggested that the collected revenue be used specifically for mobility initiatives for low-wage earners and island resident commuters having trouble parking in the high-demand areas. It is also proposed that the purpose of the meter rate increase be clearly communicated to the public and the programs funded by the new revenue be clearly explained.

L.2 State Funding

The State of Maine collects revenue from gasoline tax and other transportation related user fees into a State Highway Fund. State Highway Fund expenditures are primarily allocated to road and bridge improvements, supporting traffic law enforcement, safety, and ferry passenger service operations. Funding for transit and other mobility programs is comparatively small and has not grown significantly in recent years. It doesn't seem probable that tax and user fee revenue collected by the State will be a major source of funding for new mobility initiatives in the study area surrounding Downtown Portland. However, a mobility initiative with regional appeal or one that can be replicated elsewhere in the State should at least request a State contribution toward a local match requirement needed to leverage federal funding assistance.

L.3 Federal Funding

There are a several federal funding programs administered by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) that are applicable to the mobility recommendations in Chapter K. What follows is a brief description of relevant federal transportation grant programs, made law under the most recent federal transportation bill, the Fixing America's Surface Transportation (FAST) Act of 2015, which authorized federal transportation funding through federal fiscal year 2020.

L.3.1 Formula Grant Programs

A number of federal transportation grant programs are administered jointly by the FHWA and FTA as formula programs. This means that a formula defined during the writing of the transportation bill reauthorization is used to allocate federal

funds to states on an annual basis considering factors such as population, federal fuel taxes paid, transit revenue miles, etc. Each grant program may use a different formula. After funding is allocated to the states, a second formula then applies for allocating funds within each state between state departments of transportation (DOTs) and regional metropolitan planning organizations (MPOs). The City of Portland and other eligible agencies may then apply for federal grants through either a regional MPO or the DOT in a competitive annual process. Eligible projects in most cases should be included in a regional long-range plan (LRP), state implementation plan (STIP), and a regional transportation improvement plan (TIP) where applicable. With some exceptions, the federal grant programs typically offer funding assistance of up to 80 percent of project cost requiring a 20 percent local match at minimum. Four examples of formula grant programs are described below.

L.3.1.1 Surface Transportation Block Grant Program

The Surface Transportation Block Grant Program (STBG) is the most flexible of the federal transportation grant programs covering a wide variety of eligible projects related to surface transportation including capital investments, planning, design, asset management, research, and training to name a few.

L.3.1.2 Transportation Alternatives Program

The Transportation Alternatives (TA) program is a subset of the STBG program meant for projects pertaining to alternatives to vehicular transportation such as bicycle and pedestrian facilities on and off road including recreational trail projects.

L.3.1.3 Congestion Mitigation Air Quality Program

The Congestion Mitigation Air Quality Program (CMAQ) is a grant program meant to provide assistance in funding transportation projects that help meet or maintain compliance with the Clean Air Act. Although Maine is currently in attainment of federal air quality standards, the State still receives a minimum apportionment of CMAQ funding for projects that improve or maintain air quality. CMAQ funds are provided on a reimbursement basis, meaning funds are not provided until work is completed.

L.3.1.4 Urbanized Area Formula Funding Program, Section 5307

The FTA administers an Urbanized Area Formula Funding Program, also known as Section 5307. Eligible activities include a variety of transit planning, engineering, design, capital investment, and related communications technology. Some activities related to mobility management programs are also eligible under the program. Urbanized areas with a population over 200,000 are usually not allowed to use Section 5307 grant funding for transit operating expenses, however, a Special Rule exists allowing some urban areas to do so. The Portland, ME urbanized area is currently allowed to use a limited amount of Section 5307 funds for transit operating expenses.

L.3.2 Competitive Grant Programs

There are also grant programs administered by FHWA and FTA that are allocated through competitive processes at the federal level. Eligible applicants apply directly for the grants through one of the federal agencies and awarded funds do not count against the formula grant funds received by the states. The grant programs typically offer funding assistance at a maximum of 80 percent of project cost, though applicants are encouraged to apply for less to better the odds of receiving funding. Two examples of competitive grant programs are described below.

L.3.2.1 Passenger Ferry Grant Program

The Passenger Ferry Grant Program is a competitive grant program administered by FTA for projects related to passenger ferry systems in urbanized areas. In addition to directly supporting capital expenses related to ferry boat service, eligible projects include enhancements to terminals and connectivity to other modes of transportation.

L.3.2.2 Mobility on Demand Sandbox Demonstration Program

The Mobility on Demand (MOD) Sandbox Demonstration Program was the first program of its kind created by the FTA in 2016. The MOD program is part of a broader long-range policy visioning effort at the USDOT called Beyond Traffic. Although the MOD program has already fully allocated its budget of \$8 million in awards, future programs funding MOD demonstrations will likely follow in years to come. The MOD program funded innovative pilot projects in communities seeking to integrate mobility on demand services such as bike sharing, car sharing, and demand-responsive buses and vans with traditional transit services. The integration of smart phone technology across MOD services and transit was also a key component of many awarded programs. Eleven grants were awarded including one to The Vermont Agency of Transportation which received \$480,000 to create a statewide transit trip planner that will attempt to enable various non-fixed route mobility services to be integrated with fixed route transit services using smartphone technology.

L.4 Conclusion

This chapter offered ideas for funding sources to support the recommendations made in Chapter K to reduce parking demand in Downtown Portland, The Waterfront, and The Eastern Waterfront over the next ten years. In Table 54, each recommendation from Chapter K is listed with the relevant funding sources described here in Chapter L.

Table 54: Suggested Funding Sources for Recommendations

Recommendation	Suggested Initiation Timeframe	Suggested Local Funding Sources	Suggested Federal Funding Assistance
K.2.1 Explore the Formation of a Non-Profit Transportation Association			
Feasibility study	1 year	Contributions from the private sector to an existing association or to the City to manage the procurement of a feasibility study.	STBG Program has eligibility for planning projects.
Incorporation and startup	2 years	Membership dues. Some transportation associations also provide services for fees.	CMAQ program. The Association would need to demonstrate a mission that will result in air quality improvement. Transportation Management Associations, for example, are eligible for federal assistance under the CMAQ program with startup funding assistance and up to 3 years of operating assistance spread out over a maximum of 5 years.
K.2.2 Partner with Transportation Network Companies to Address Specific Parking Challenges			
Meet with TNC providers to discuss partnership and service	1 year	N/A	N/A
Develop a custom program for island residents	2 years	City funding, user fees, development impact fee, Special purpose on-street meter rate increase.	Park and ride lot projects are eligible under the STBG program, however use of federal funds for remote parking facilities and programs would preclude the City from collecting user fees beyond operation and maintenance of the parking lot. Park and Ride lot projects using federal funds must accommodate transit service and or traditional carpool/vanpool programs.
Develop a custom program for low-wage earners	2 years	City funding, user fees, development impact fee, Special purpose on-street meter rate increase.	
Develop a remote park and ride lot strategy for visitors	3 years	City funding, user fees, development impact fee.	

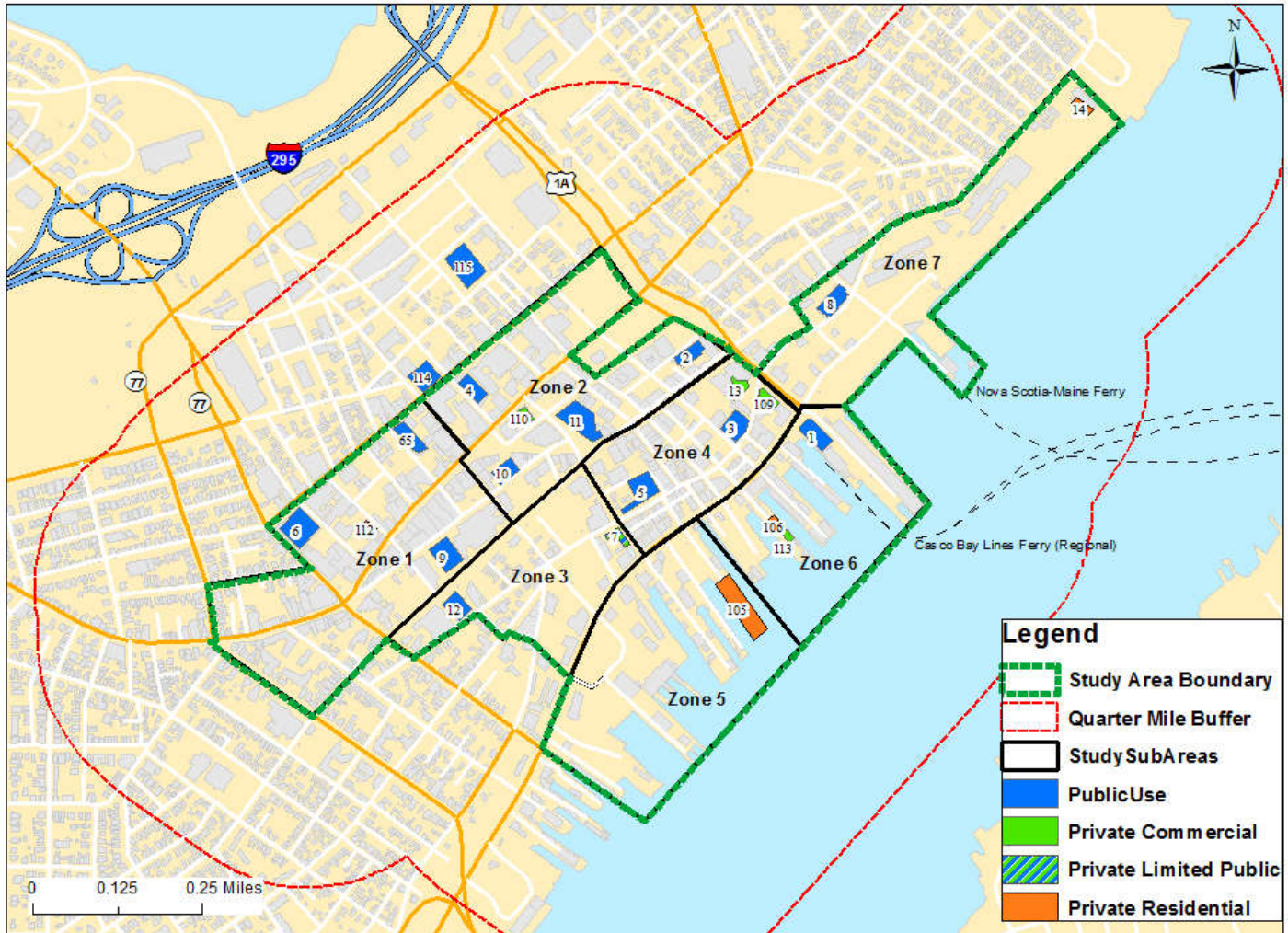
Recommendation	Suggested Initiation Timeframe	Suggested Local Funding Sources	Suggested Federal Funding Assistance
K.2.3	Expand Specific Island Resident Parking Permit Programs		
	1-2 years	City Funding. Funding for this recommendation could help offset future loss of revenue associated with the additional conversion of on-street spaces to unmetered hourly zones.	N/A
K.2.4	Pilot Test Higher Cost On-Street Parking in High Demand Areas		
Design Pilot Study	1 year	City Funding	N/A
Implement Pilot Study	2 years	City Funding	N/A
K.2.5	Extend On-Street Meter Hours to 8pm City Wide		
	2 years	City Funding for changes in signage, public awareness.	N/A
K.2.6	Improve Parking Management and Technology		
	1 year -ongoing	Continued private operator investment	The City could apply for wayfinding project grant under the CMAQ program. The project would need to demonstrate air quality benefits from improved wayfinding, e.g., decreased vehicular trip lengths.
K.2.7	Change Parking Requirements and Regulations		
	1 year	This recommendation could be reviewed during the upcoming re-write of the City's Land Use Code, already budgeted for FY2018.	N/A
K.2.8	Improve Parking Policies in the Context of Land Uses Permits		
	1 year	This recommendation could be reviewed during the upcoming re-write of the City's Land Use Code, already budgeted for FY2018.	N/A

Recommendation	Suggested Initiation Timeframe	Suggested Local Funding Sources	Suggested Federal Funding Assistance
K.2.9	Increase Car Sharing Use		
	1 year-ongoing	The City could review additional requirements in the Land Use Code for the creation of designated parking spaces for car sharing vehicles as part of future private developments.	While federal public transportation law does not consider car sharing as a form of public transportation, capital expenses related to the creation of parking spaces for car sharing programs at transit stops, transit centers, or passenger ferry terminals may be eligible for funding through the Urbanized Area Formula Grants Section 5307 or the Passenger Ferry Grant Program.
K.2.10	Continue Implementation of TDM Recommendations from the 2008 Peninsula Transit Study		
Additional TDM requirements for development	1 year-ongoing	This recommendation could be reviewed during the upcoming re-write of the City's Land Use Code, already budgeted for FY2018.	N/A
Transit Service Enhancements and Upgrades	3-5 years	City funding, development impact fee	STBG program, Section 5307
K.2.11	Additional Transit Recommendations		
Hack-a-thon, contest, or another incentive to engage users with the invention of new Portland area bus location smartphone apps.	1 year	City funding, private donations	N/A
Downtown circulator bus route	3-5 years	Development impact fee	STBG program, Section 5307
K.2.12	Bicycle Infrastructure		
	1 year-ongoing	City funding, development impact fee	STBG program, TA program. Bicycle infrastructure upgrades to ferry terminals may be eligible under the Passenger Ferry Program. A successor to the 2016 MOD program may present Portland with an opportunity to create a program to integrate

Recommendation	Suggested Initiation Timeframe	Suggested Local Funding Sources	Suggested Federal Funding Assistance
			bike sharing and bus or passenger ferry service while incorporating smartphone technology.
K.2.13	Convert Unrestricted Parking		
	3-5 years	City funding.	N/A
K.2.14	Marketing and Advertising		
	1 year-ongoing	City funding, Private/nonprofit funds/partnerships	N/A
K.2.15	Additional Data Collection		
	2 years	City funding, private donations	Data collection as part of planning activities could be eligible under the STBG program.
K.2.16	Construct New Structured Public Parking Supply		
	Depending on development. 3-7 years.	Private financing	N/A

M. Appendix A: Structured and Surface Lot Parking Inventory with Numbered Maps

Structured Parking Map with Numbered Index

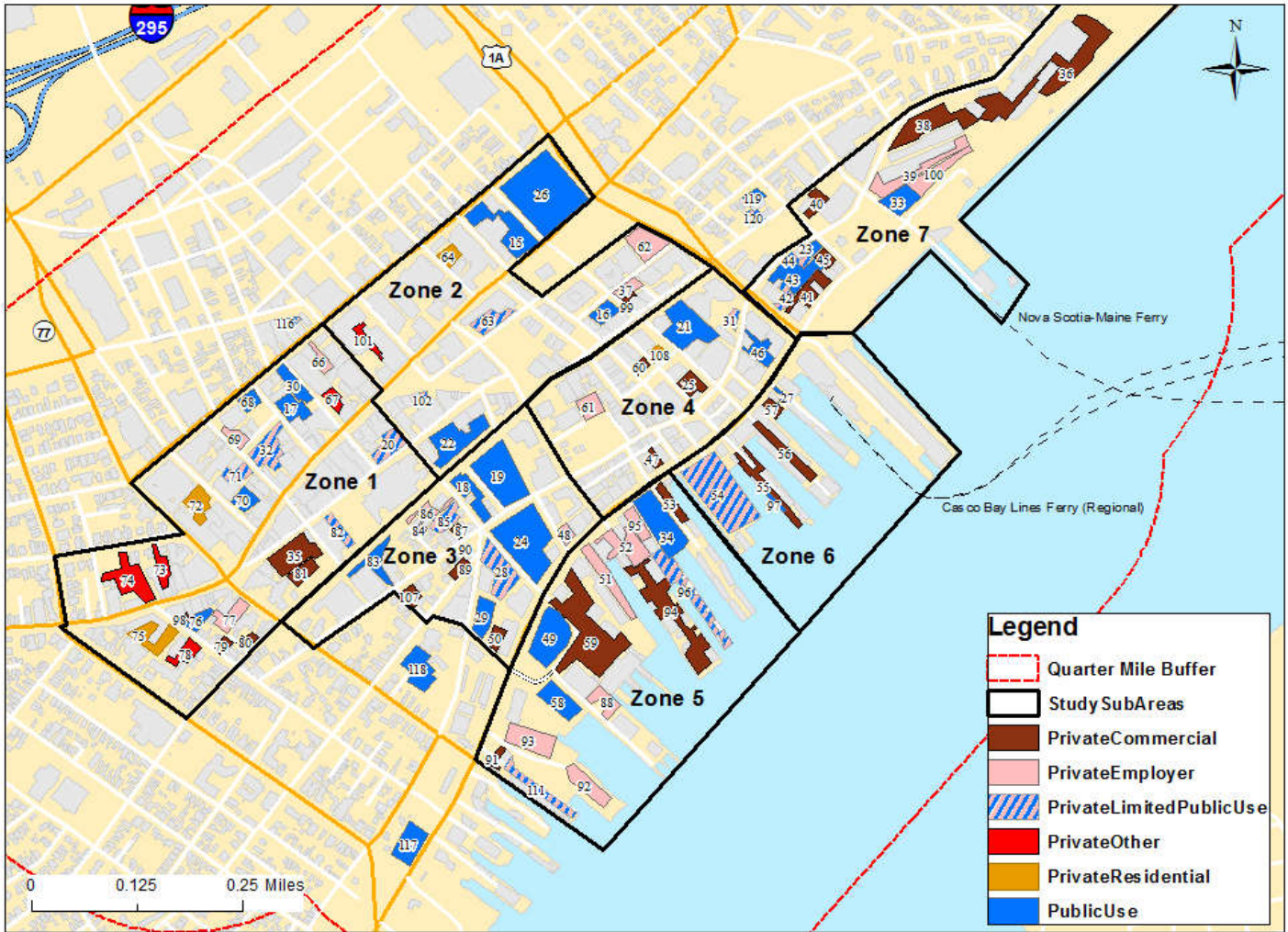


Capacity count methodology: For surface lots and structured parking included in the City’s seasonal parking inventory, the published total of spaces were used. All remaining surface lots not included in the City inventory were manually counted using Google Earth aerial photography. For structured parking not included in the City inventory (which were typically private use garages), estimates were made using a combination of Google Earth aerial photography and Google Street View to determine the number of parking levels. The number of residential units associated with a private residential garage also informed private garage estimates.

Map Index for Structures

LOT_ID on Map	Name	Study Area Section	Spaces	Use Type	SubArea Zone
1	Casco Bay Parking Garage	Waterfront	418	Public Use	6
2	Cumberland County Courthouse Parking Garage	OldPort	328	Public Use	2
3	Custom House Parking Garage	OldPort	761	Public Use	4
4	Elm St Garage	OldPort	398	Public Use	2
5	Fore St. Parking Garage	OldPort	423	Public Use	4
6	Gateway Parking Garage	OldPort	655	Public Use	1
7	Portland Harbor Hotel Garage	OldPort	195	PrivateLimPub	3
8	Ocean Gateway Garage	EasternWaterfront	720	Public Use	7
9	Spring Street Garage	OldPort	565	Public Use	1
10	One City Center Garage	OldPort	600	Public Use	2
11	Temple Street Parking Garage	OldPort	620	Public Use	2
12	Holiday Inn by the Bay	OldPort	285	Public Use	3
13	Morgan Stanley_Citizens Bank Parking Garage	OldPort	200	Private Commercial	4
14	Portland House Parking Garage	Eastern Waterfront	111	Private Residential	7
65	Monument Square Garage	OldPort	340	Public Use	1
105	Chandlers Wharf	OldPort	150	Private Residential	5
106	Portland Pier Condos	OldPort	30	Private Residential	6
109	Bangor Savings Bank	Old Port	84	Private Commercial	4
110	2 Monument Way	OldPort	73	Private Commercial	2
112	Oak St Lofts	OldPort	37	Private Residential	1
113	Portland Pier Commercial Condos	Waterfront	20	Private Commercial	6
	Study Area Total		7,013		
	1/4 Mi Buffer Area				
114	Public Market Garage	1/4 mi Buffer Area	600	Public Use	
115	Chestnut St Garage	1/4 mi Buffer Area	450	Public Use	
	1/4 Mi Buffer Area		1,050		

Surface Lot Parking Map with Number Index



Map Index for Surface Lots

LOT_ID Map	NAME	Study Area Section	Spaces	Use Type	SubArea Zone
15	385 Congress St Lot	OldPort	130	PublicUse	2
16	66 Pearl St	OldPort	44	PublicUse	2
17	Casco St Lot	OldPort	25	PublicUse	1
18	Cotton & Center Parking Lot & Center St Par	OldPort	50	PublicUse	3
19	Portland Square Upper Visitor Lot	OldPort	237	PublicUse	3
20	J.B. Brown Parking Lot on Free St.	OldPort	44	PrivateLimPub	1
21	Middle & Pearl Parking Lot	OldPort	208	PublicUse	4
22	Midtown Parking Lot	OldPort	175	PublicUse	2
23	Omni Park System/Casa Parking Lot	Eastern Waterfront	20	PublicUse	7
24	Portland Square Lower Monthly Lot	OldPort	300	PublicUse	3
25	Regency Hotel Parking Lot	OldPort	45	Private Commercial	4
26	Top of the Old Port	OldPort	540	PublicUse	2
27	68 Commercial St	Waterfront	17	PublicUse	6
28	Baxter Place Lot	OldPort	100	PrivateLimPub	3
29	14 York St Parking Lot	OldPort	50	PublicUse	3
30	52 Brown St Lot	OldPort	69	PublicUse	1
31	Hub Furniture Lot	OldPort	32	PrivateLimPub	4
32	Sheply Lot	OldPort	59	PrivateLimPub	1
33	Thames St Hourly Lot	Eastern Waterfront	75	PublicUse	7
34	Fisherman's Wharf Parking Lot	Waterfront	250	PublicUse	5
35	Free St Parking Lot	OldPort	155	Private Commercial	1
36	58 Fore St Narrow Gauge RR	Eastern Waterfront	200	Private Commercial	7
37	198 Newbury St	OldPort	21	PrivateEmployer	2
38	100 Fore St	Eastern Waterfront	142	Private Commercial	7
39	144 Fore St	Eastern Waterfront	82	PrivateEmployer	7
40	Micucci Grocery Store	Eastern Waterfront	30	Private Commercial	7
41	19-39 Commercial St	Eastern Waterfront	66	Private Commercial	7
42	15 Franklin St	Eastern Waterfront	33	PrivateLimPub	7
43	Simba Parking	Eastern Waterfront	115	PublicUse	7

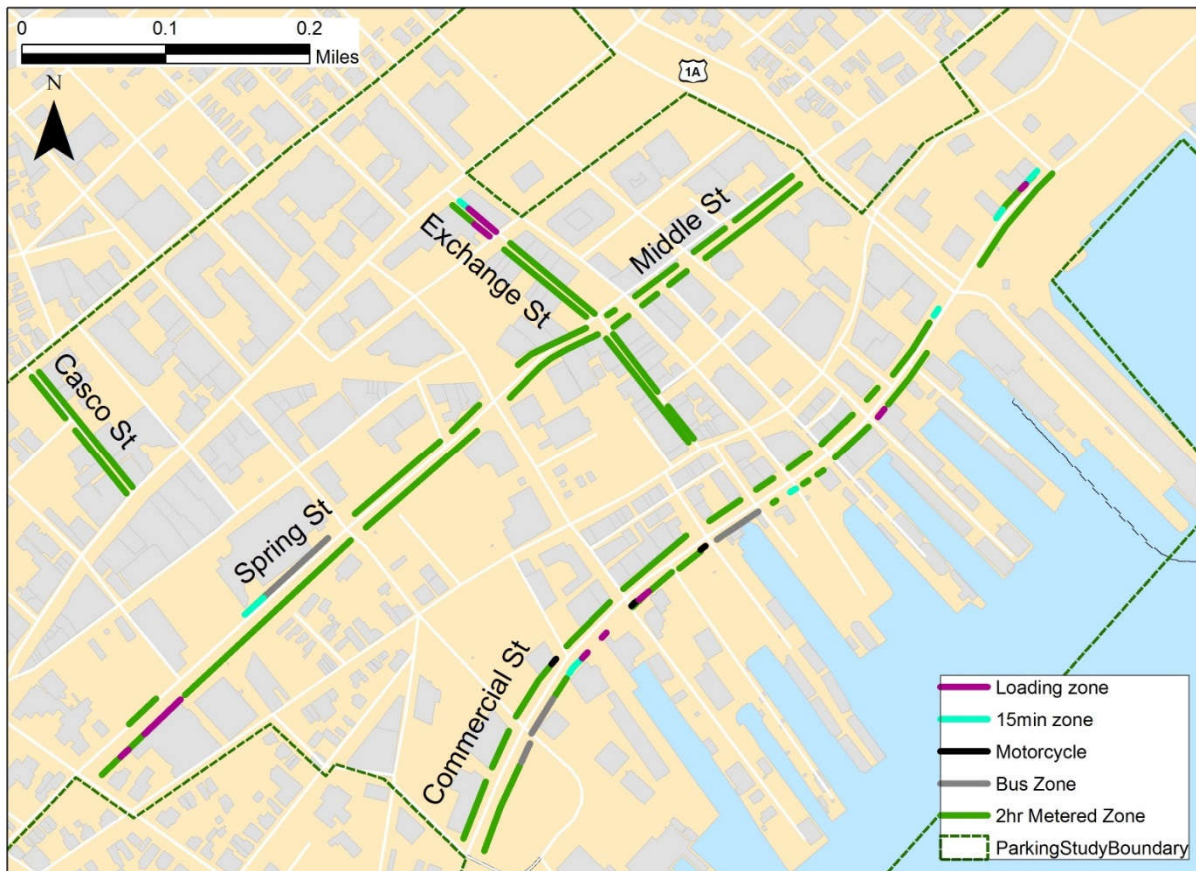
LOT_ID Map	NAME	Study Area Section	Spaces	Use Type	SubArea Zone
44	208 Fore St	Eastern Waterfront	23	PrivateLimPub	7
45	1 Commercial St	Eastern Waterfront	26	Private Commercial	7
46	East Brown Cow Lot 75 Commercial St	OldPort	46	PublicUse	4
47	185 Commercial St	OldPort	20	Private Commercial	4
48	Memic Lot	OldPort	20	PrivateEmployer	3
49	Portland Fish Pier Front Lot	Waterfront	165	PublicUse	5
50	Courtyard Portland Lot	OldPort	22	Private Commercial	3
51	254 Commercial St Wharf	Waterfront	72	PrivateEmployer	5
52	36 Union Wharf	Waterfront	60	PrivateEmployer	5
53	2-422 Chandler's Wharf	Waterfront	46	Private Commercial	5
54	DiMillo's Parking Lot (Long Wharf)	Waterfront	317	PrivateLimPub	6
55	Portland Pier Private Parking	Waterfront	38	Private Commercial	6
56	Custom House Wharf	Waterfront	70	Private Commercial	6
57	90 Commercial St	Waterfront	25	Private Commercial	6
58	Portland Fish Pier Back Lot	Waterfront	105	PublicUse	5
59	6 Portland Fish Pier	Waterfront	100	Private Commercial	5
60	99 Silver St	OldPort	25	Private Commercial	4
61	11 Patton Court Lot	OldPort	35	PrivateEmployer	4
62	Cumberland Register of Probate Lot	OldPort	44	PrivateEmployer	2
63	400 Congress St	OldPort	36	PrivateLimPub	2
64	Chestnut St Lofts Lot	OldPort	37	Private Residential	2
66	340 Cumberland Ave	OldPort	35	PrivateEmployer	1
67	Maine Historical Society	OldPort	37	PrivateOther	1
68	380 Cumberland Ave Lot	OldPort	26	PublicUse	1
69	Fairpoint Communications Lot	OldPort	19	PrivateEmployer	1
70	Venture (VIP) Parking Lot	OldPort	48	PublicUse	1
71	84 Oak St	OldPort	35	PrivateLimPub	1
72	Congress Square Apartments	OldPort	48	Private Residential	1
73	12 Deering Place	OldPort	35	PrivateOther	1
74	645 Congress Lot	OldPort	76	PrivateOther	1
75	Lafayette Square Lot	OldPort	82	Private Residential	1

LOT_ID Map	NAME	Study Area Section	Spaces	Use Type	SubArea Zone
76	622 Congress St	OldPort	40	PublicUse	1
77	WCSH 6	OldPort	82	PrivateEmployer	1
78	Episcopal Church Lot	OldPort	40	PrivateOther	1
79	125 Park St	OldPort	25	Private Commercial	1
80	127 Spring St	OldPort	26	Private Commercial	1
81	87 Spring St	OldPort	44	Private Commercial	1
82	Maine Health Lot	OldPort	37	PrivateLimPub	1
83	Holiday Inn by the Bay Lot	OldPort	35	PublicUse	3
84	17 south St	OldPort	23	PrivateEmployer	3
85	52 Center St Parking Lot	OldPort	63	PrivateLimPub	3
86	70 Center St	OldPort	31	PrivateEmployer	3
87	9 Pleasant St	OldPort	22	Private Commercial	3
88	Portland Fish Pier Employee Lot	Waterfront	37	PrivateEmployer	5
89	Yosaku Restaurant Lot	OldPort	30	Private Commercial	3
90	10 Pleasant St	OldPort	6	Private Residential	3
91	Hobson's Pier	Waterfront	25	Private Commercial	5
92	US Coast Guard	Waterfront	50	PrivateEmployer	5
93	Gulf of Maine Research Inst.	Waterfront	82	PrivateEmployer	5
94	48 Union Wharf	Waterfront	90	Private Commercial	5
95	13 Widgery Wharf	Waterfront	60	PrivateEmployer	5
96	1-39 Widgery Wharf	Waterfront	75	PrivateLimPub	5
97	Portland Pier Public Parking	Waterfront	15	PublicUse	6
98	626 Congress St	OldPort	11	Private Commercial	1
99	Church St Lot	OldPort	6	Private Commercial	2
100	Thames St Permit Lot	Eastern Waterfront	200	PrivateEmployer	7
101	465 Congress St	OldPort	15	PrivateOther	2
102	6 Monument Sq	OldPort	31	PrivateLimPub	2
107	58 Pleasant St	OldPort	40	Private Commercial	3
108	Storer Condos	OldPort	27	Private Residential	4
111	254 Commercial St	Waterfront	50	PrivateLimPub	5
	Total		6,405		

LOT_ID Map	NAME	Study Area Section	Spaces	Use Type	SubArea Zone
	Buffer Area				
116	Maria's Ristorante	1/4 mi Buffer Area	25	PrivateLimPublic	
117	Angelo's Acre	1/4 mi Buffer Area	65	PublicUse	
118	52 Danforth	1/4 mi Buffer Area	100	PublicUse	
119	62 India St	1/4 mi Buffer Area	47	PublicUse	
120	59 Middle St	1/4 mi Buffer Area	20	PrivateLimPublic	
	Total		257		

N. Appendix B: On-Street Parking Observed Data Maps and Charts

The On-Street Parking Observed Sample Coverage Locations

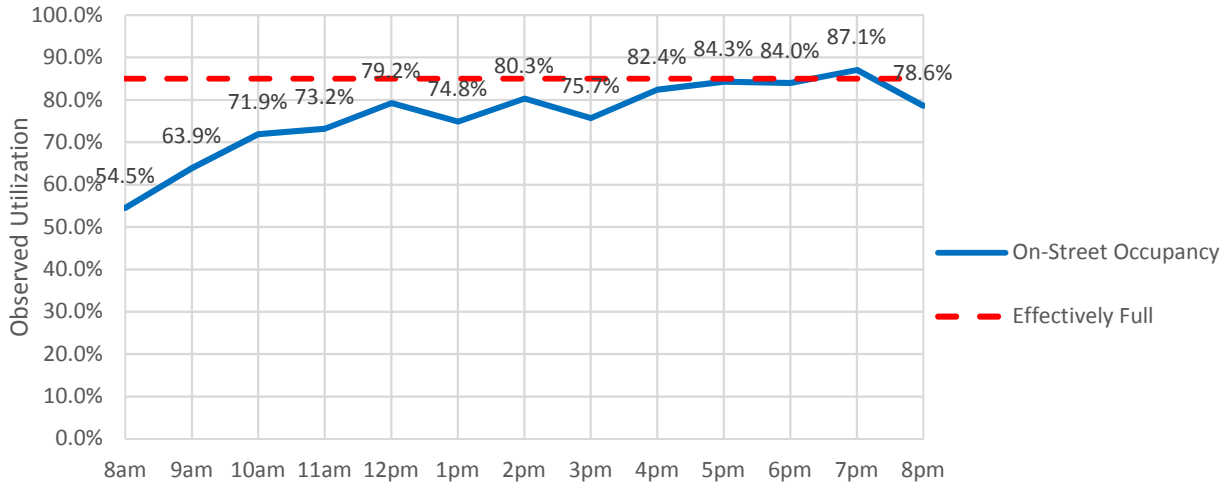


On-street parking supply for the street block faces designated above were counted manually in the field. Five observers were assigned individual data collection routes. Parking occupancy was collected by recording the last three digits of parked vehicle license plates hourly between 8am and 8pm on a Thursday, December 1, 2017 and between 10am and 8pm on a Saturday, December 3, 2016.

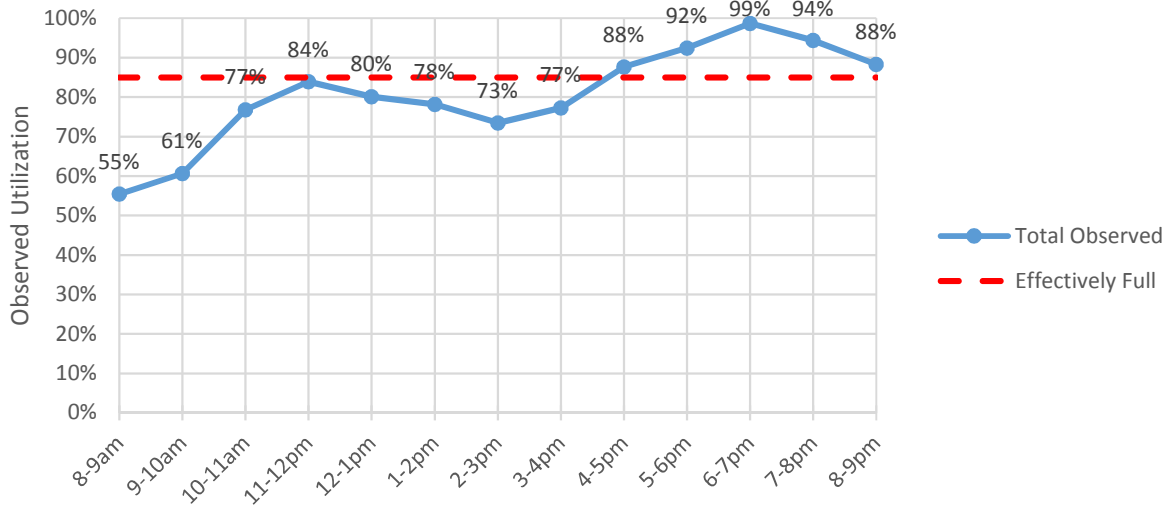
Total on-street parking capacity for the remainder of the study area was counted manually using Google Street View with edits from the City on the recently developed Eastern Waterfront.

Charts of Thursday 12/01/16 On-Street Parking Occupancy Observed Sample Results

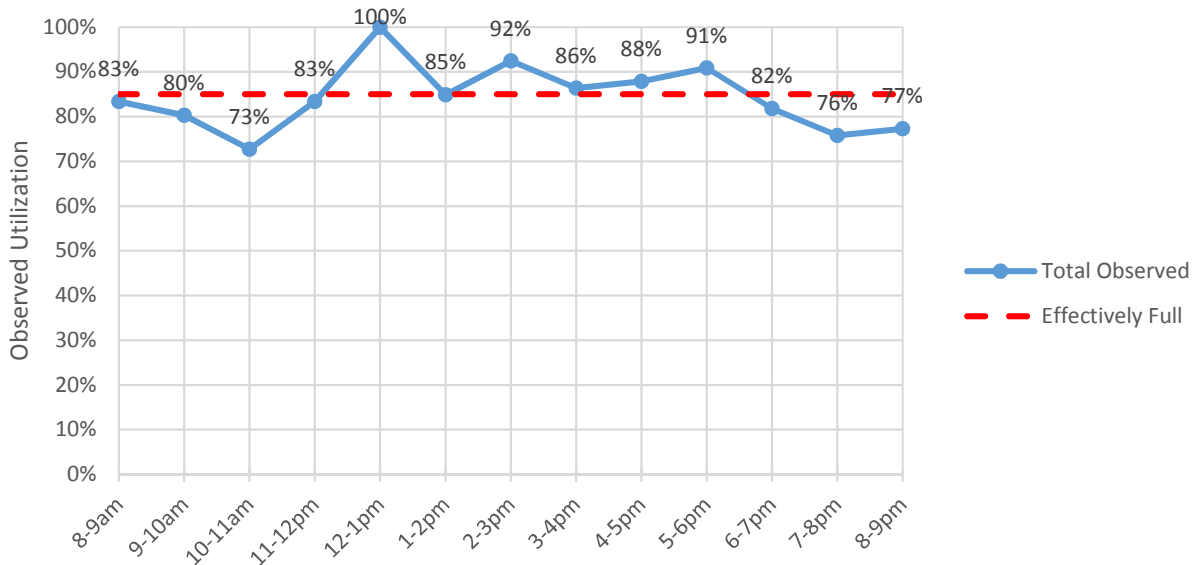
Overall Thursday Results: Parking Occupancy on All Streets Combined



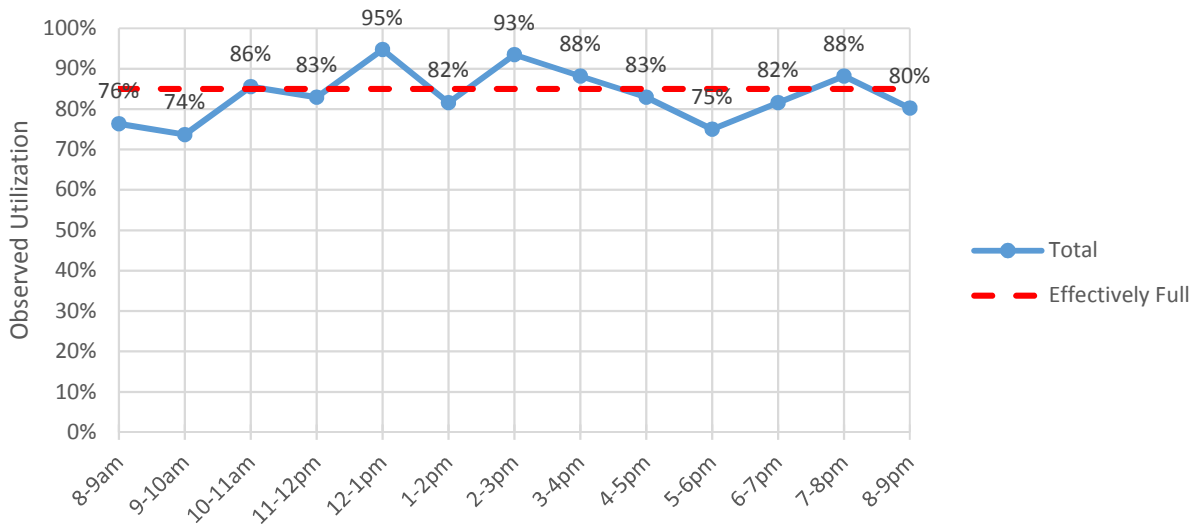
Commercial St: Thursday Parking Occupancy



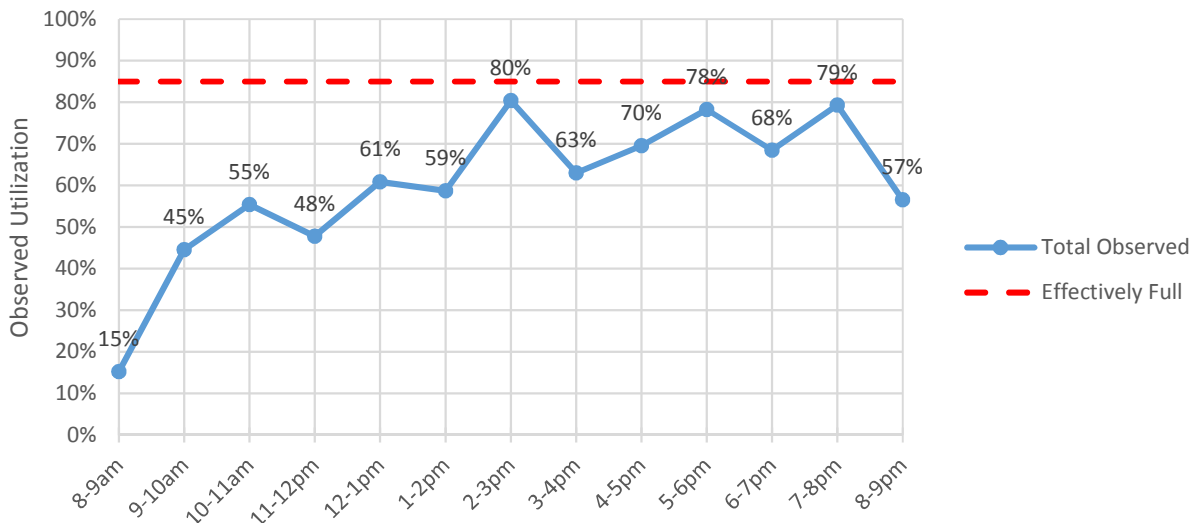
Exchange St: Thursday Parking Occupancy



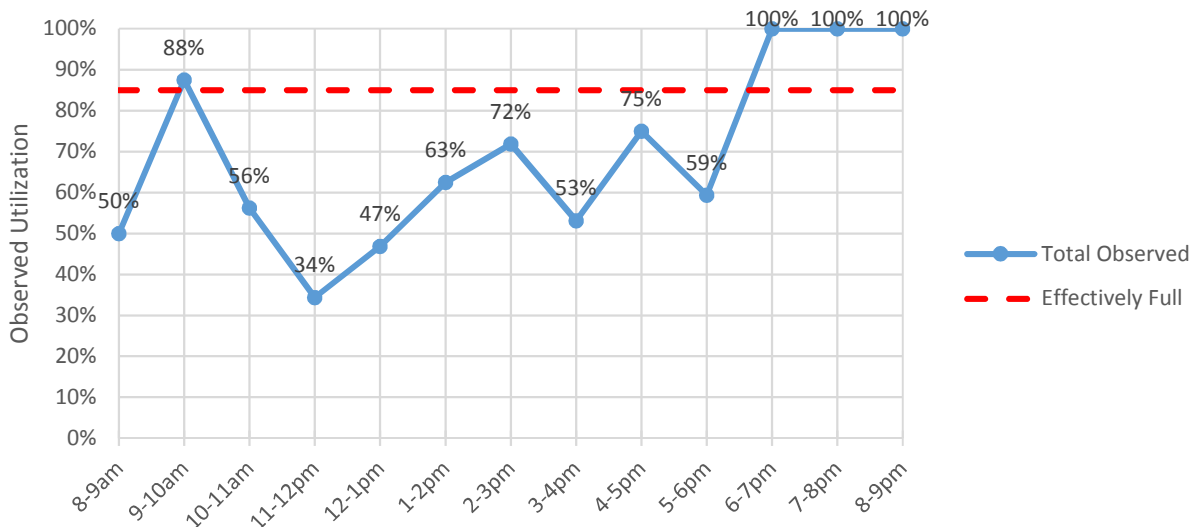
Middle St: Thursday Parking Occupancy



Spring St: Thursday Parking Occupancy

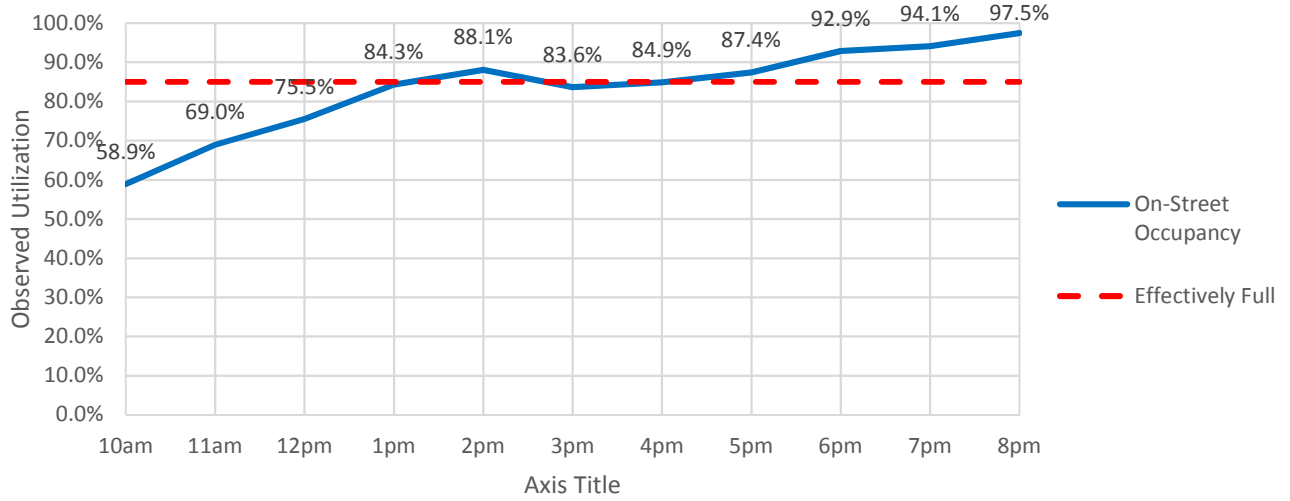


Casco St: Thursday Parking Occupancy

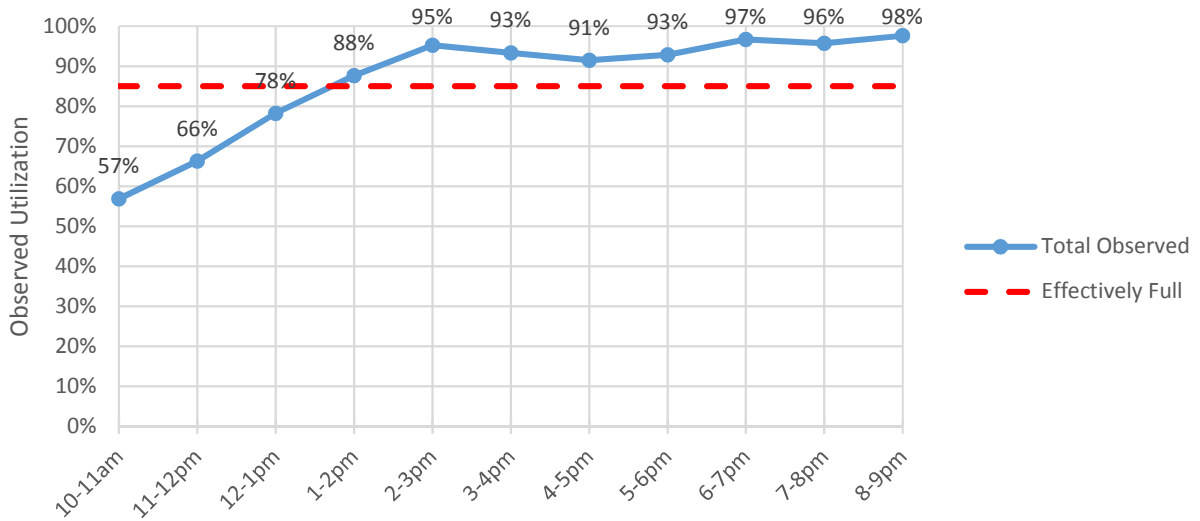


Charts of Saturday 12/03/16 On-Street Parking Occupancy Observed Sample Results

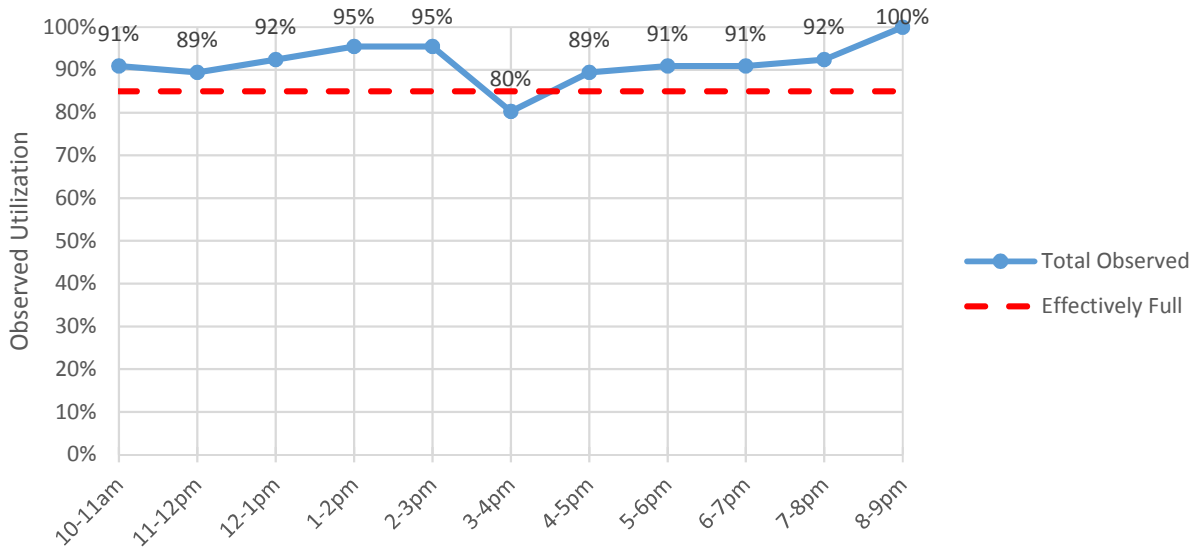
Overall Saturday Results: Parking Occupancy on All Streets Combined



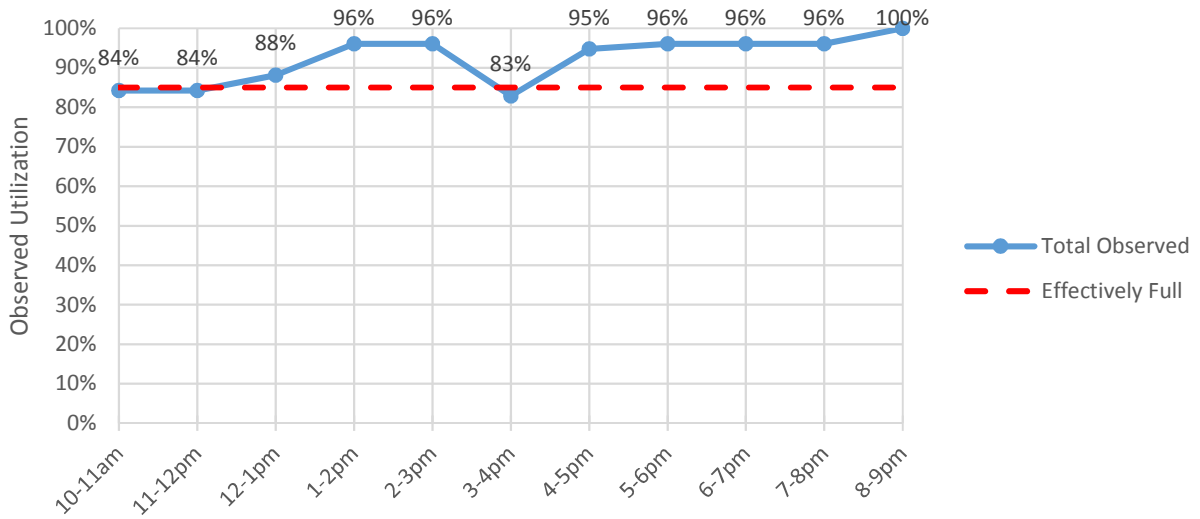
Commercial St: Saturday Parking Occupancy



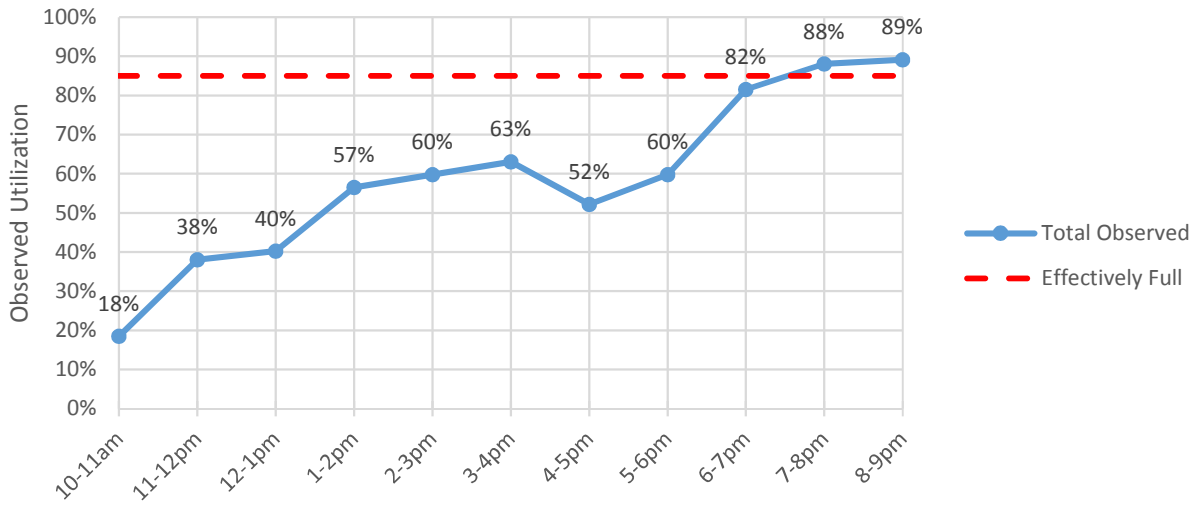
Exchange St: Saturday Parking Occupancy



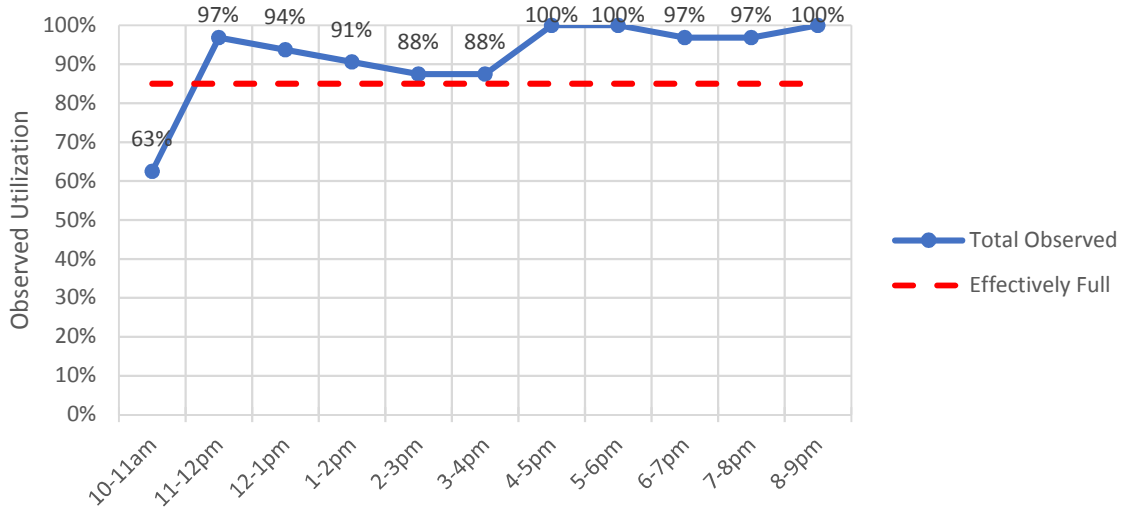
Middle St: Saturday Parking Occupancy



Spring St: Saturday Parking Occupancy

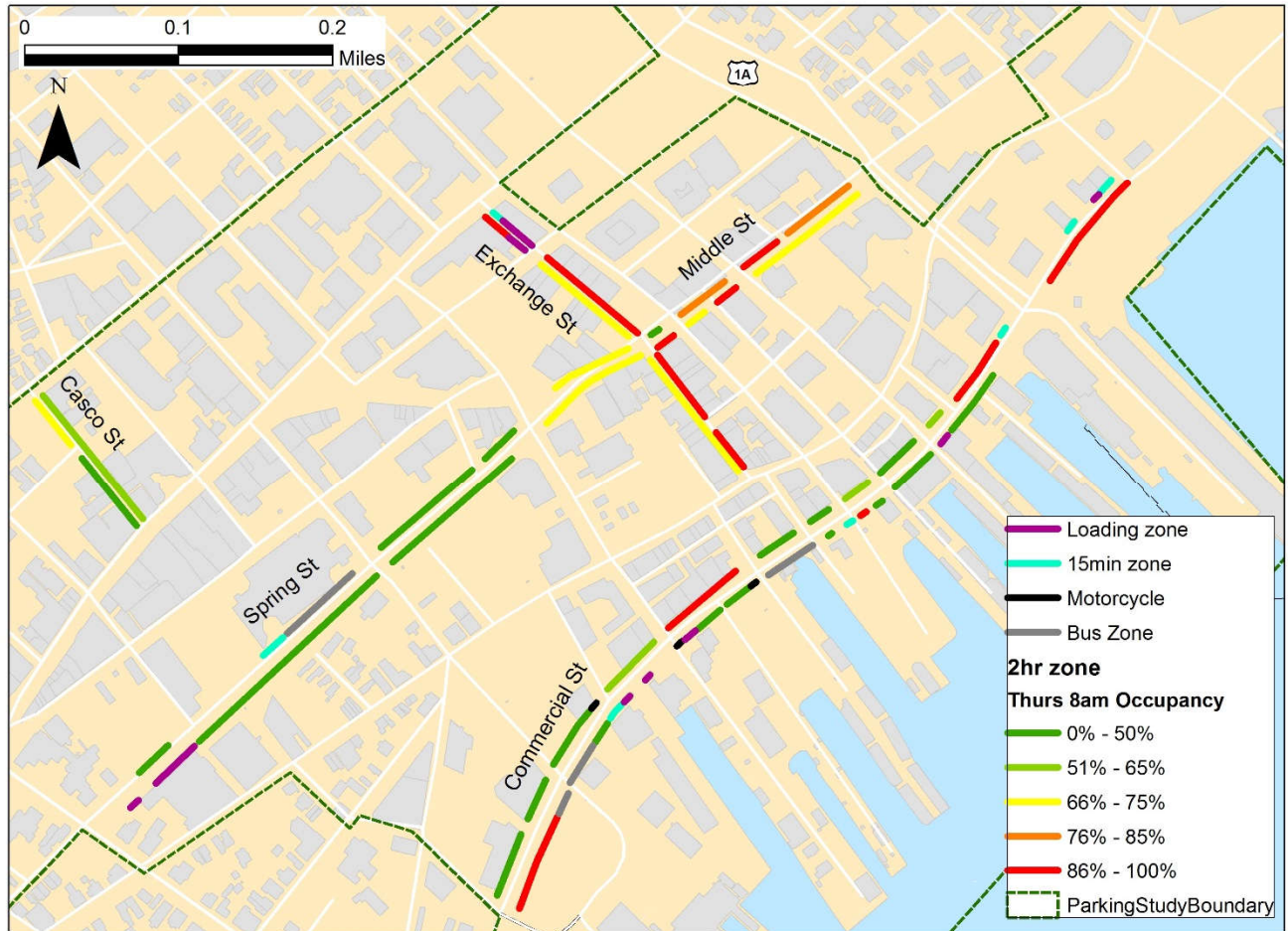


Casco St: Saturday Parking Occupancy

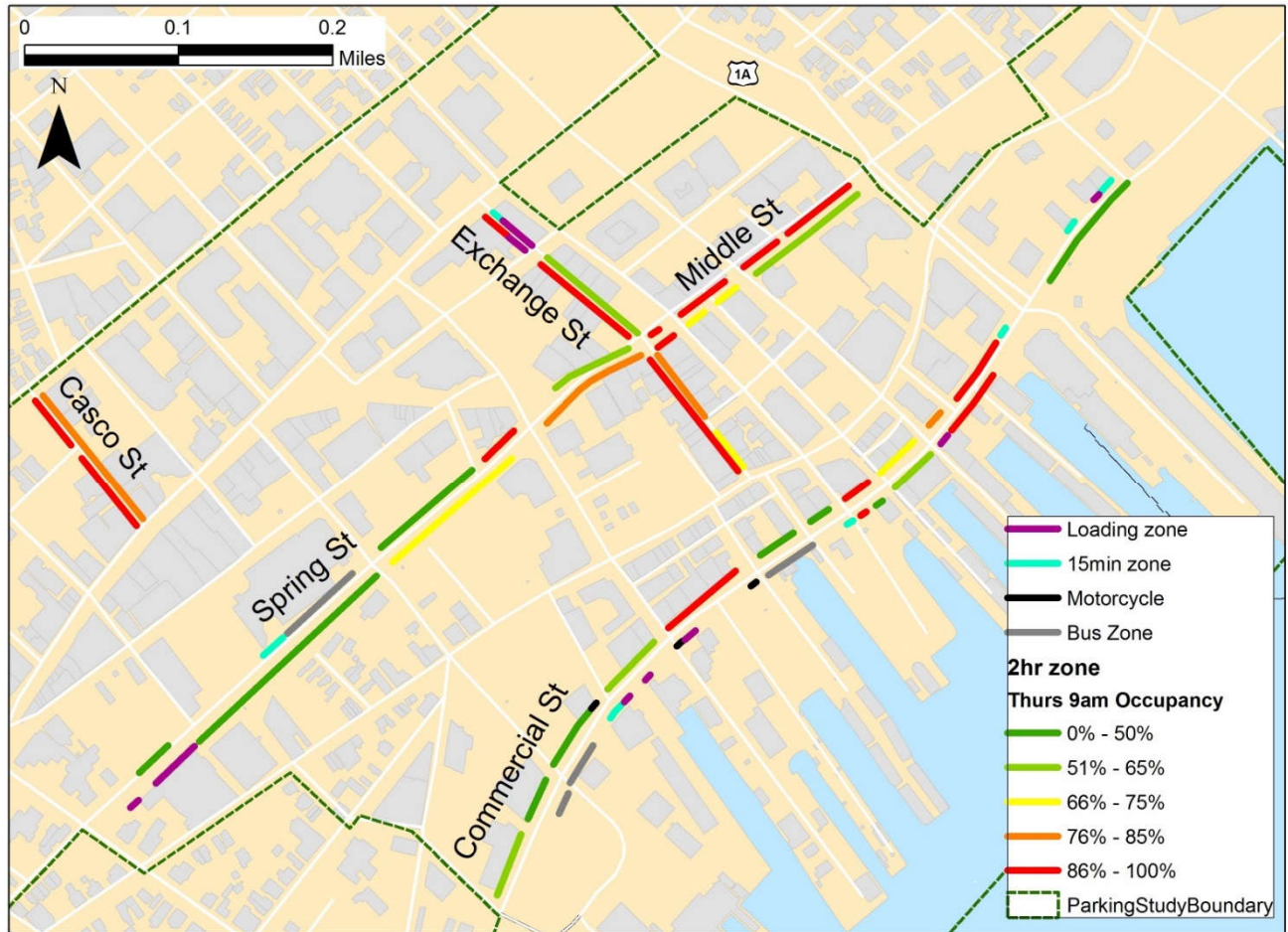


Maps of Thursday 12/01/16 On-Street Parking Occupancy Observed Sample Results

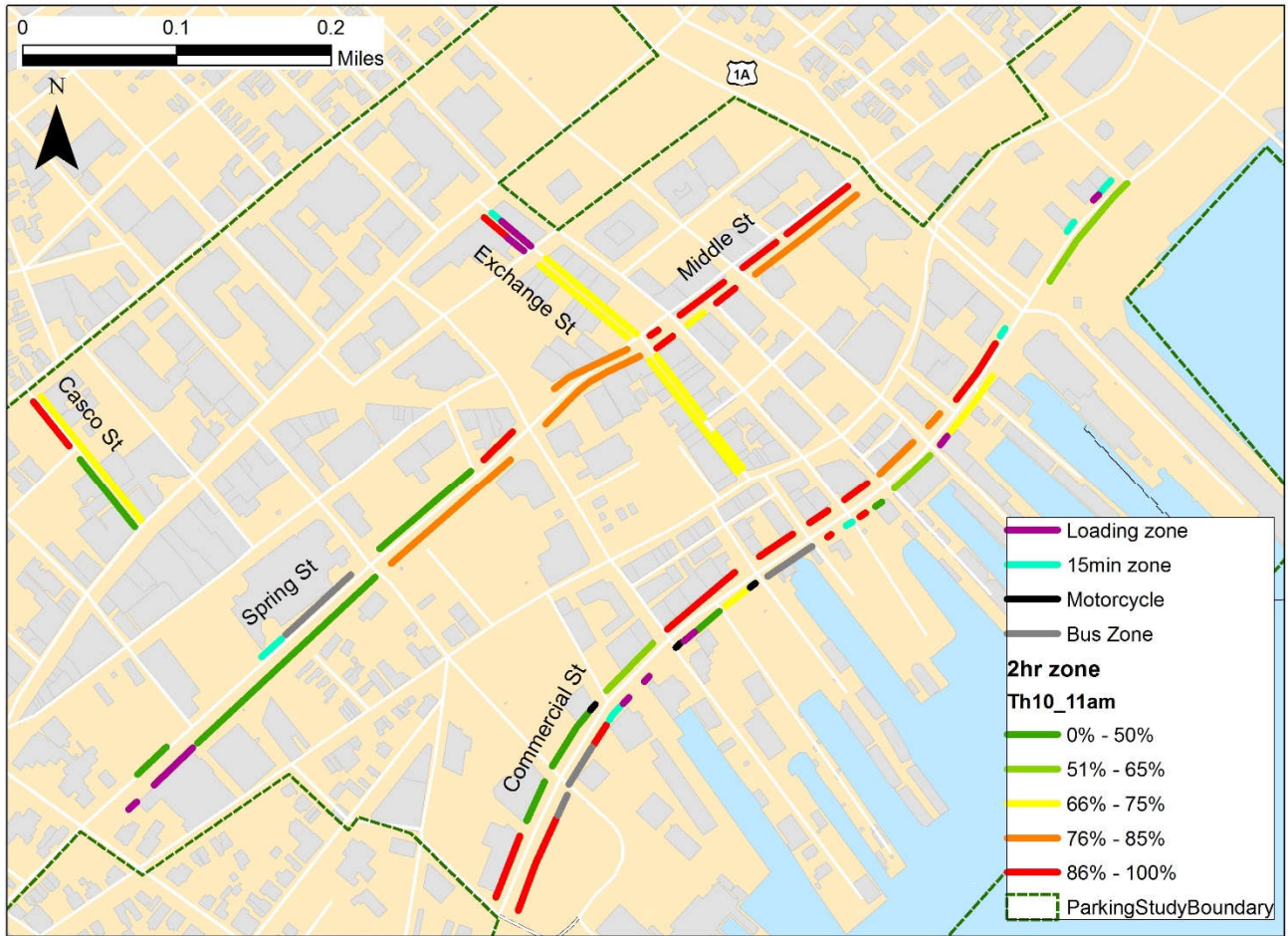
Thursday 8am Parking Occupancy in Metered Zones



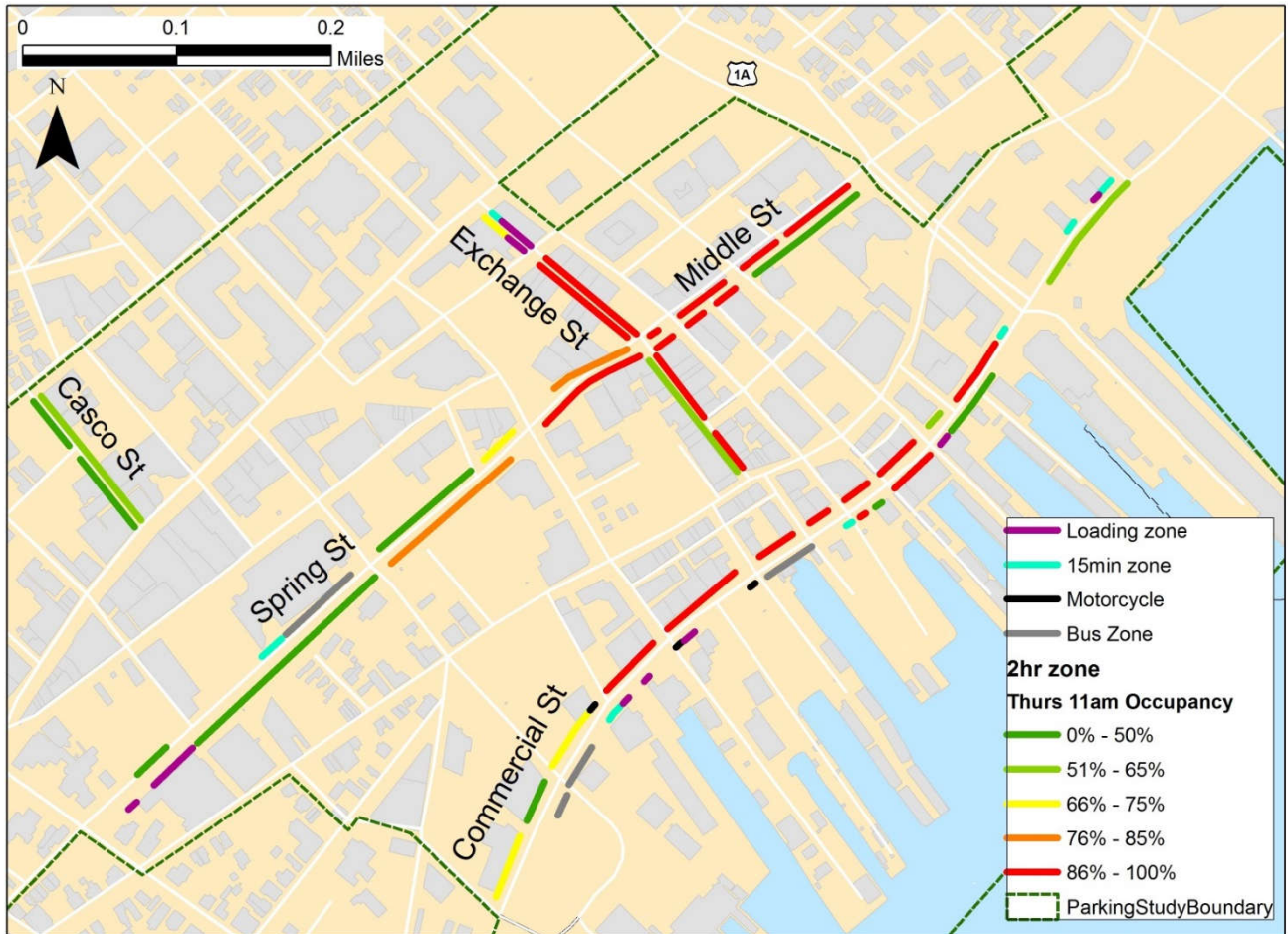
Thursday 9am Parking Occupancy in Metered Zones



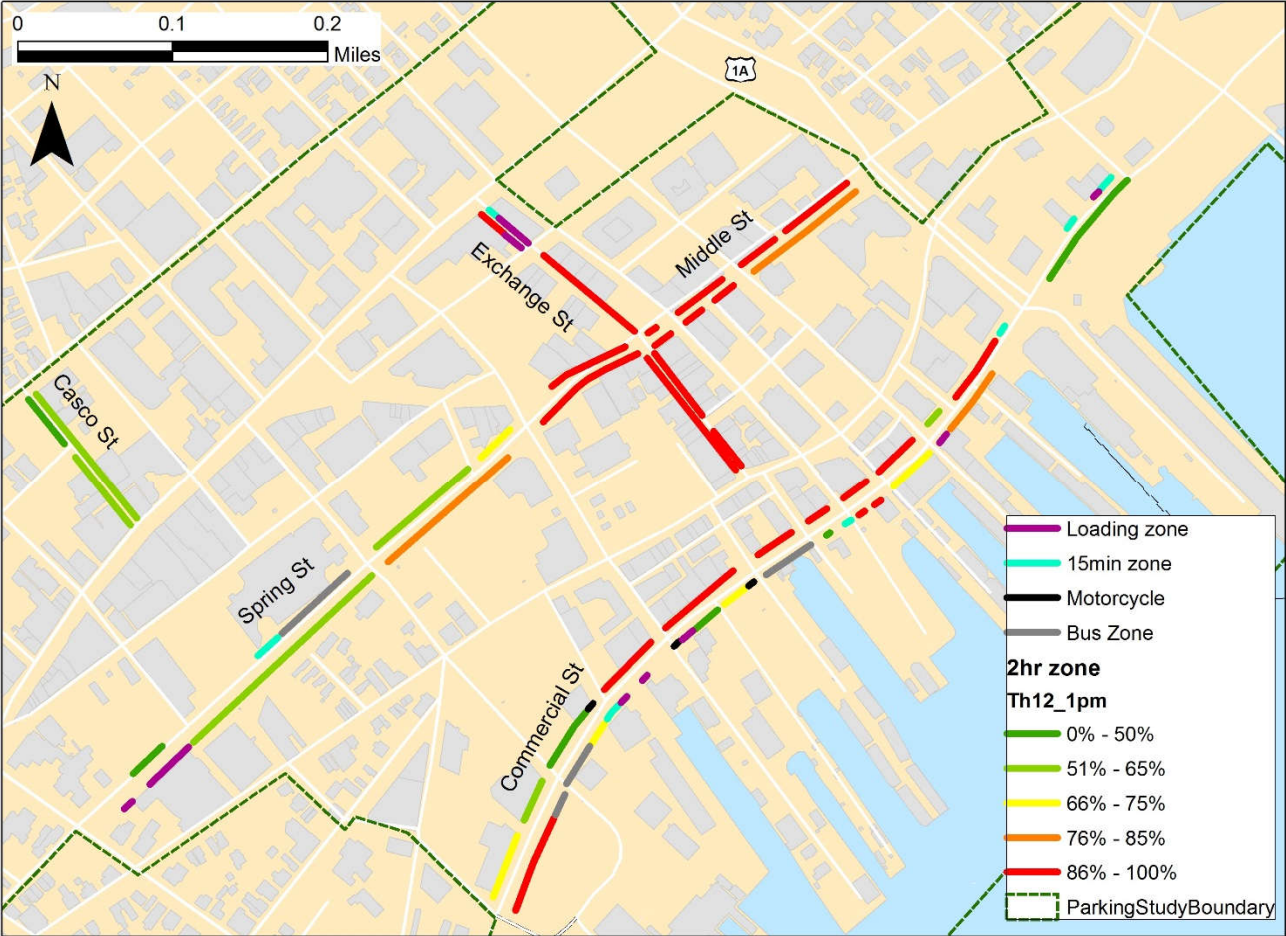
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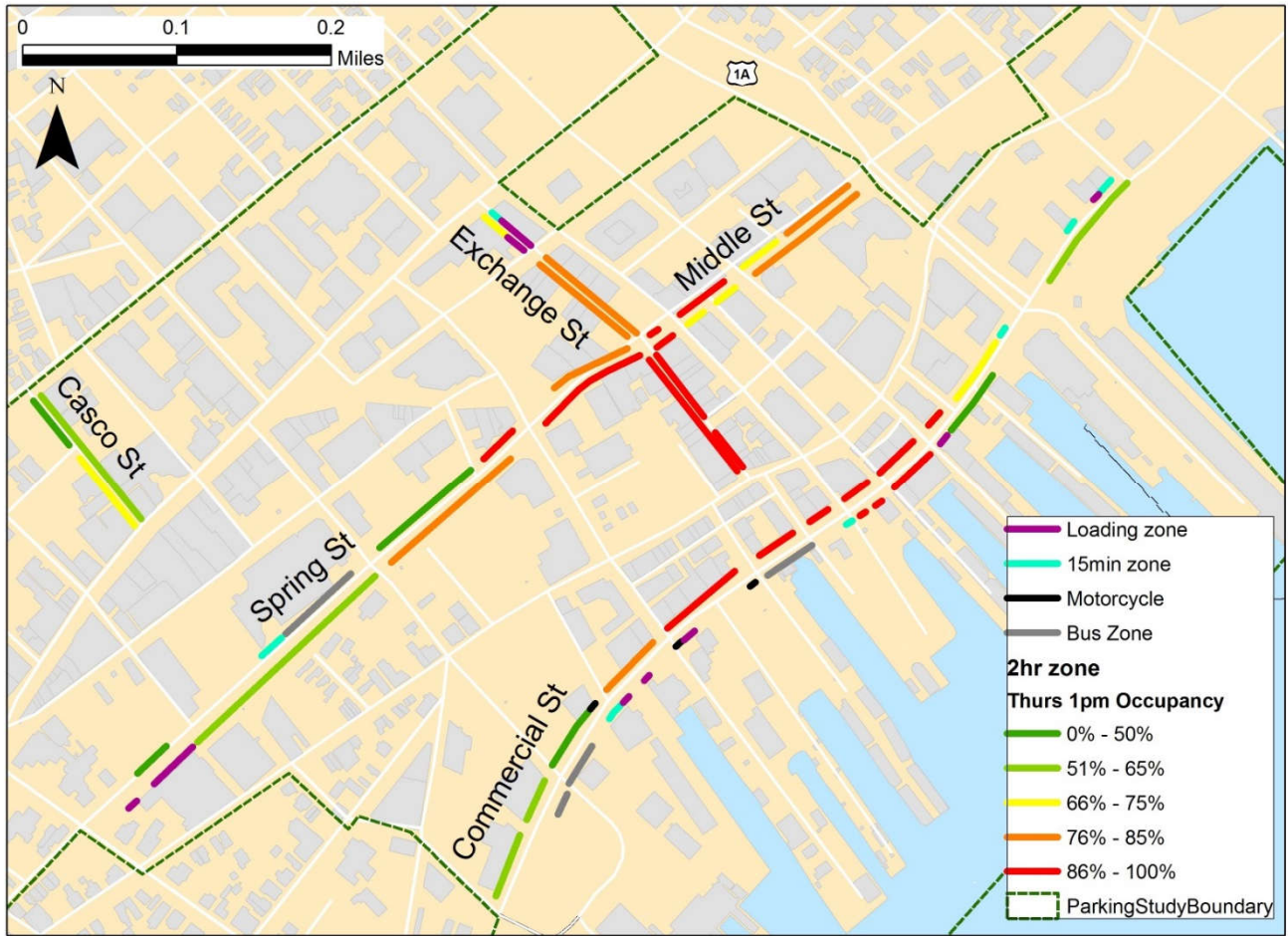
Thursday 11am Parking Occupancy in Metered Zones



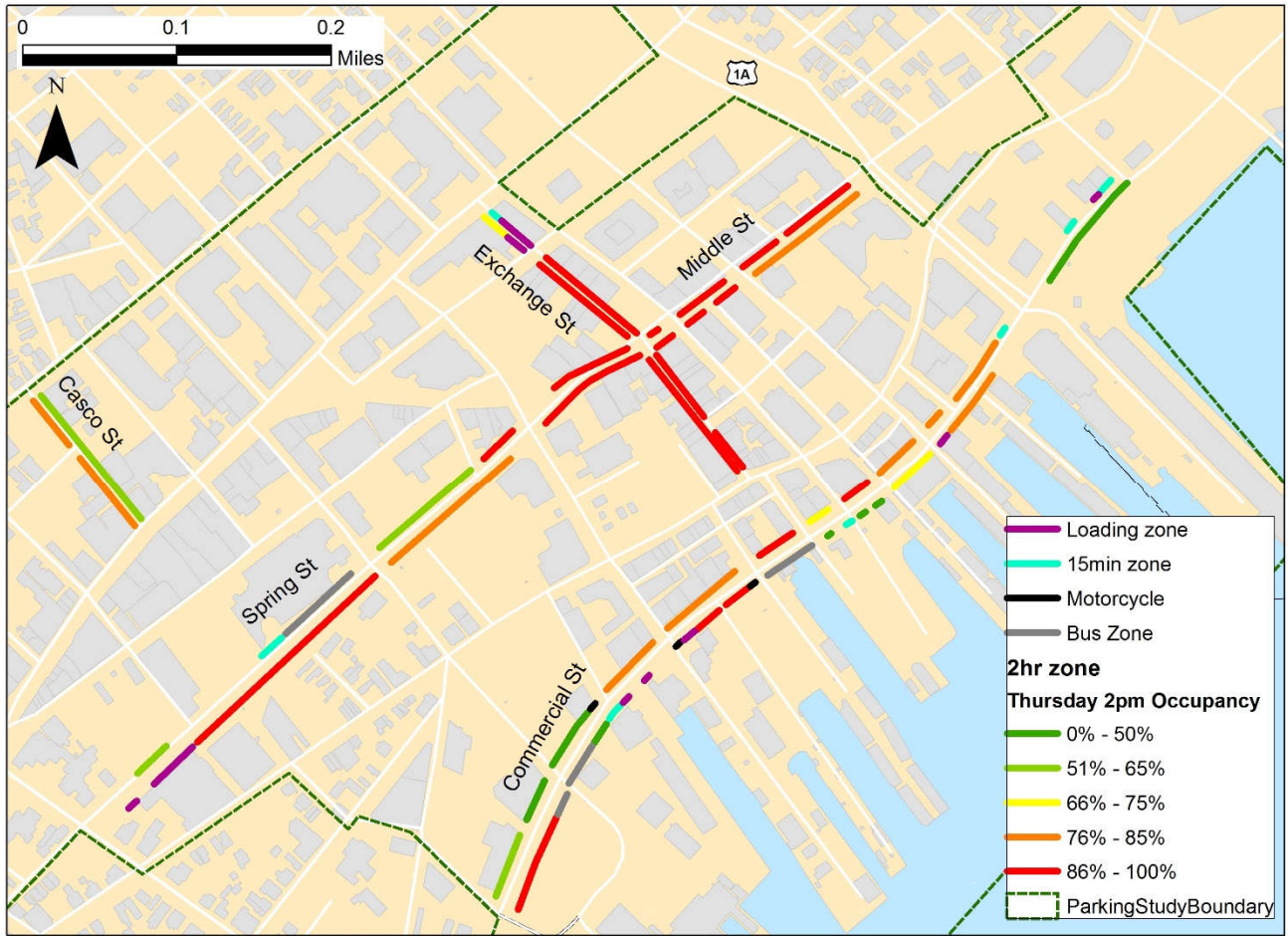
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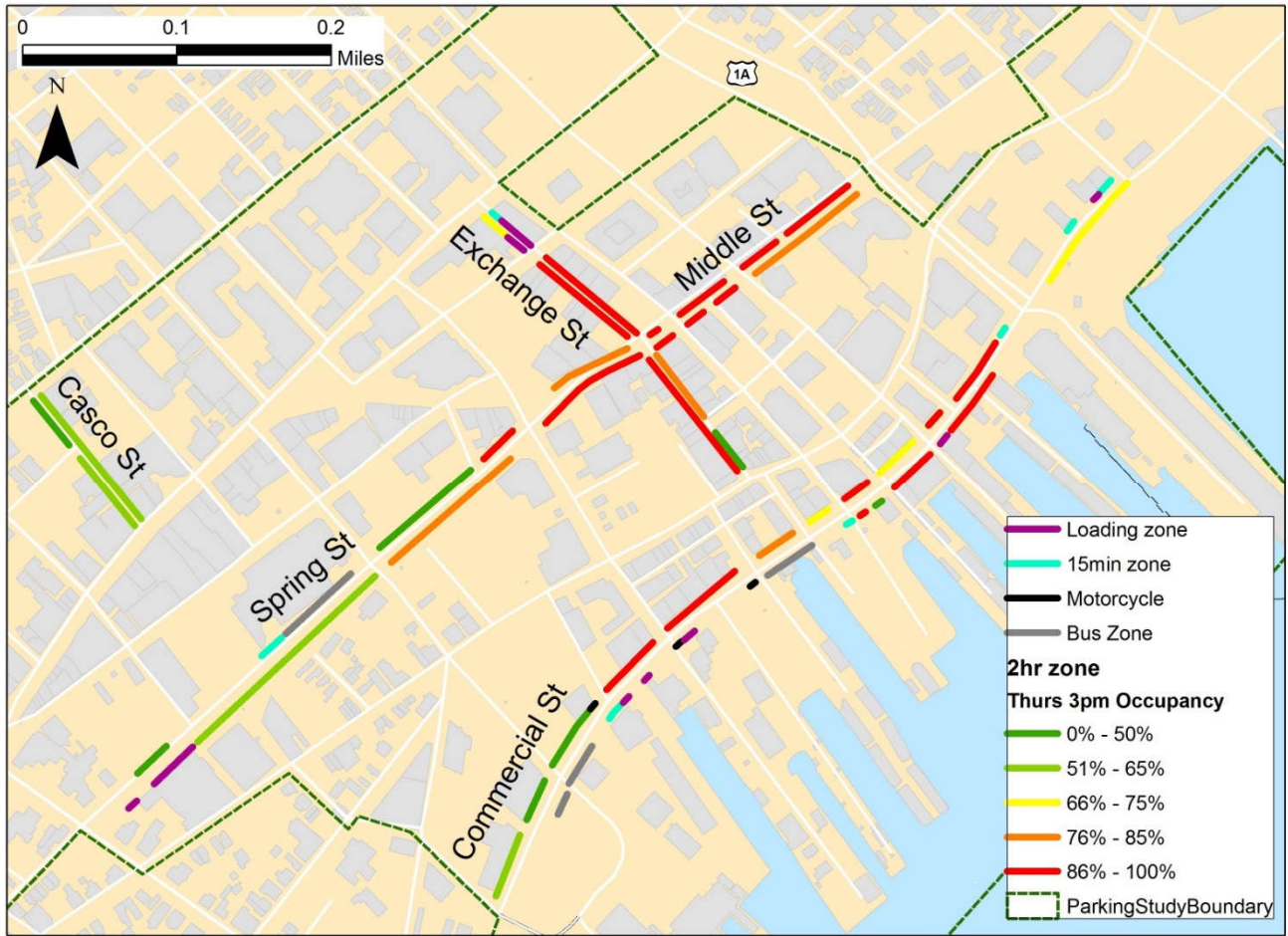
Thursday 1pm Parking Occupancy in Metered Zones



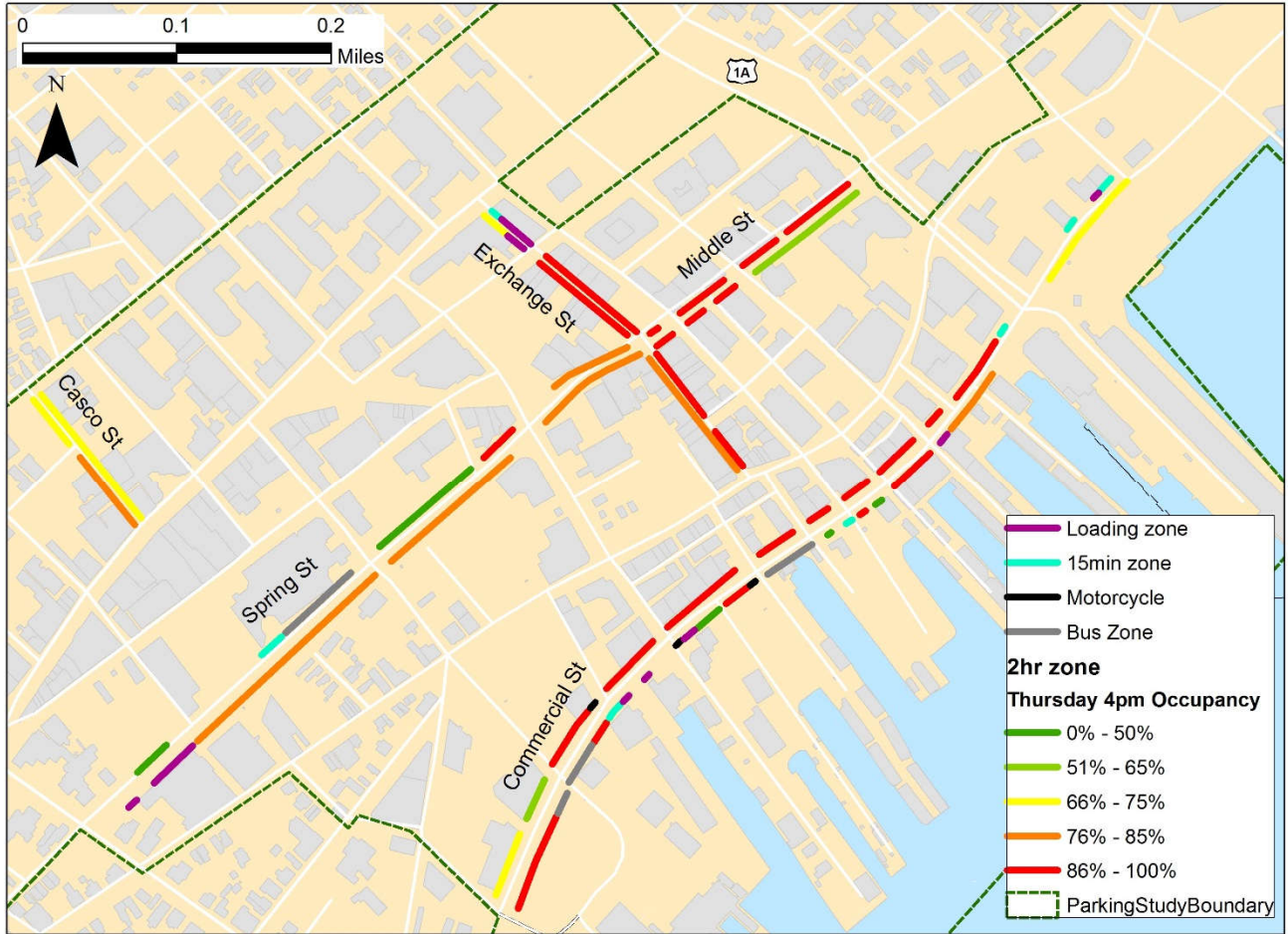
Thursday 2pm Parking Occupancy in Metered Zones



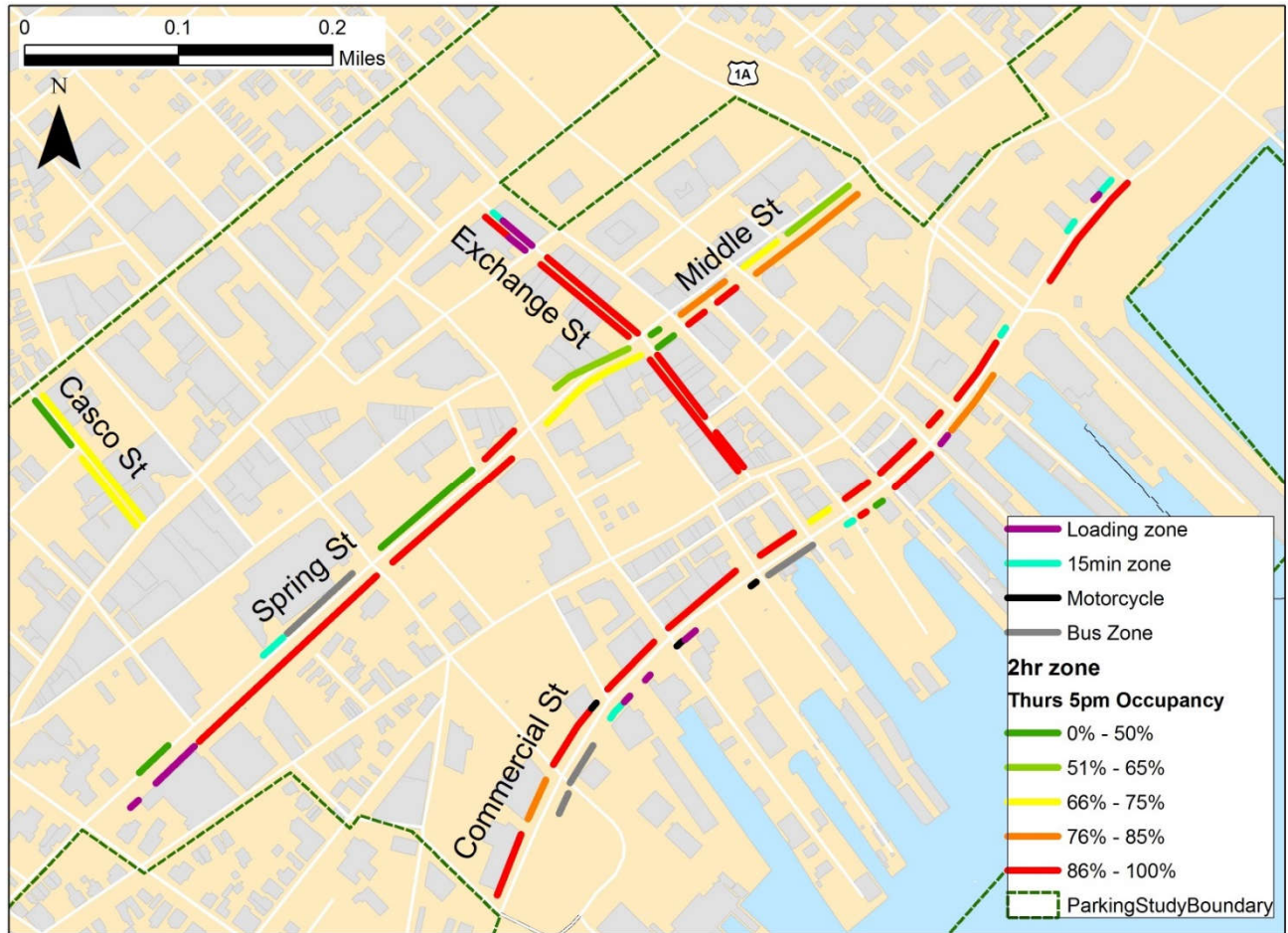
Thursday 3pm Parking Occupancy in Metered Zones



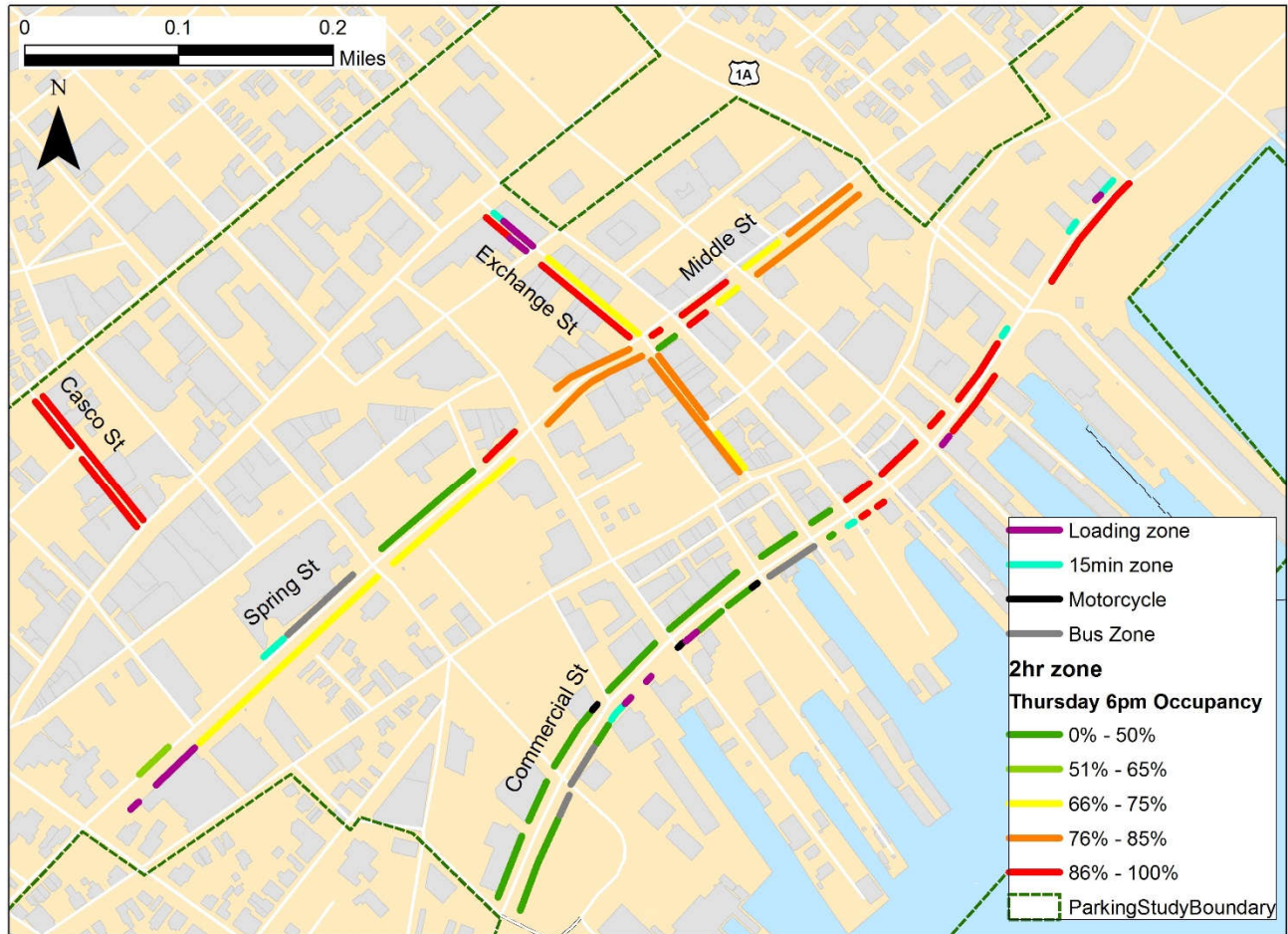
Thursday 4pm Parking Occupancy in Metered Zones



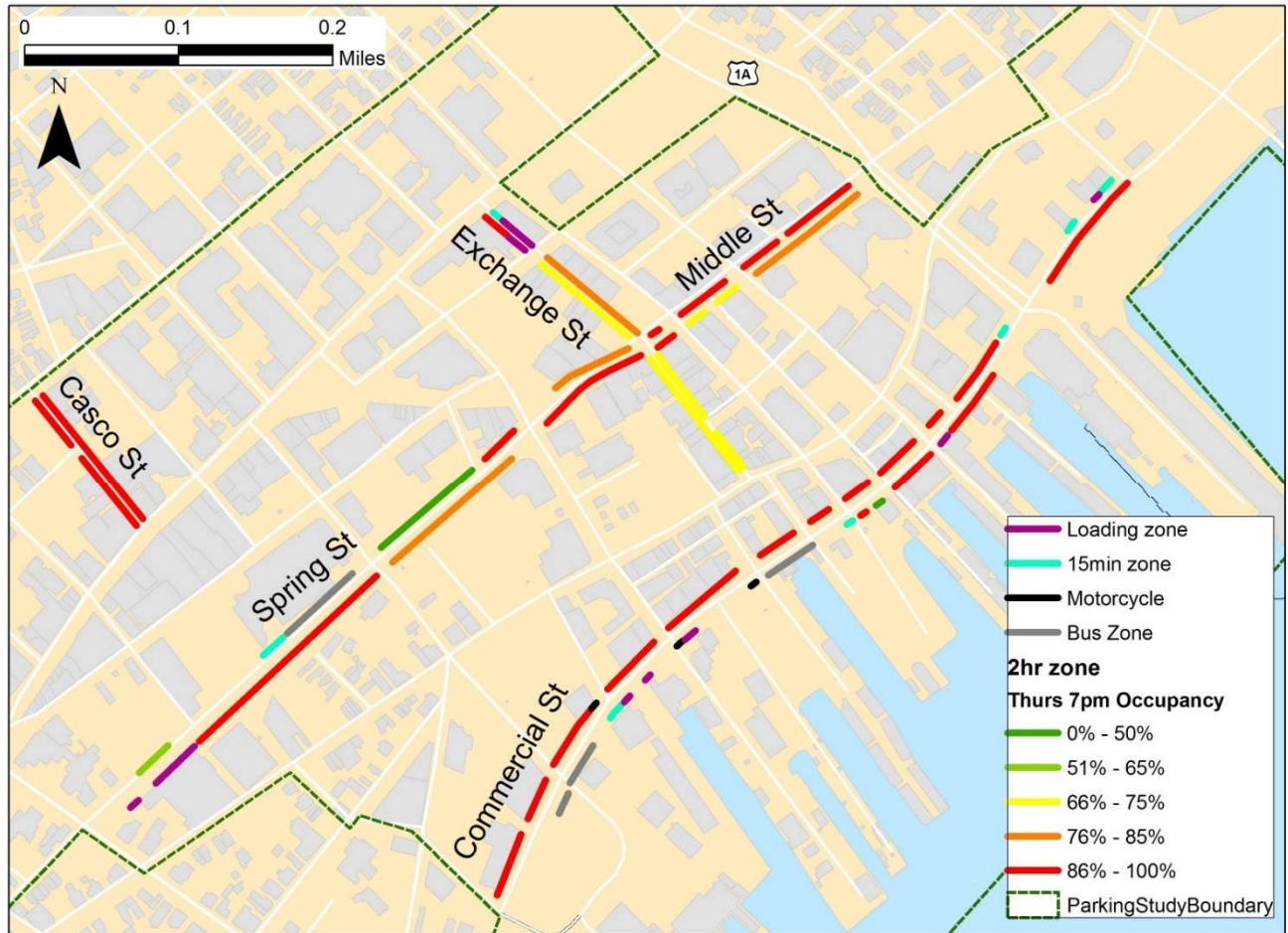
Thursday 5pm Parking Occupancy in Metered Zones



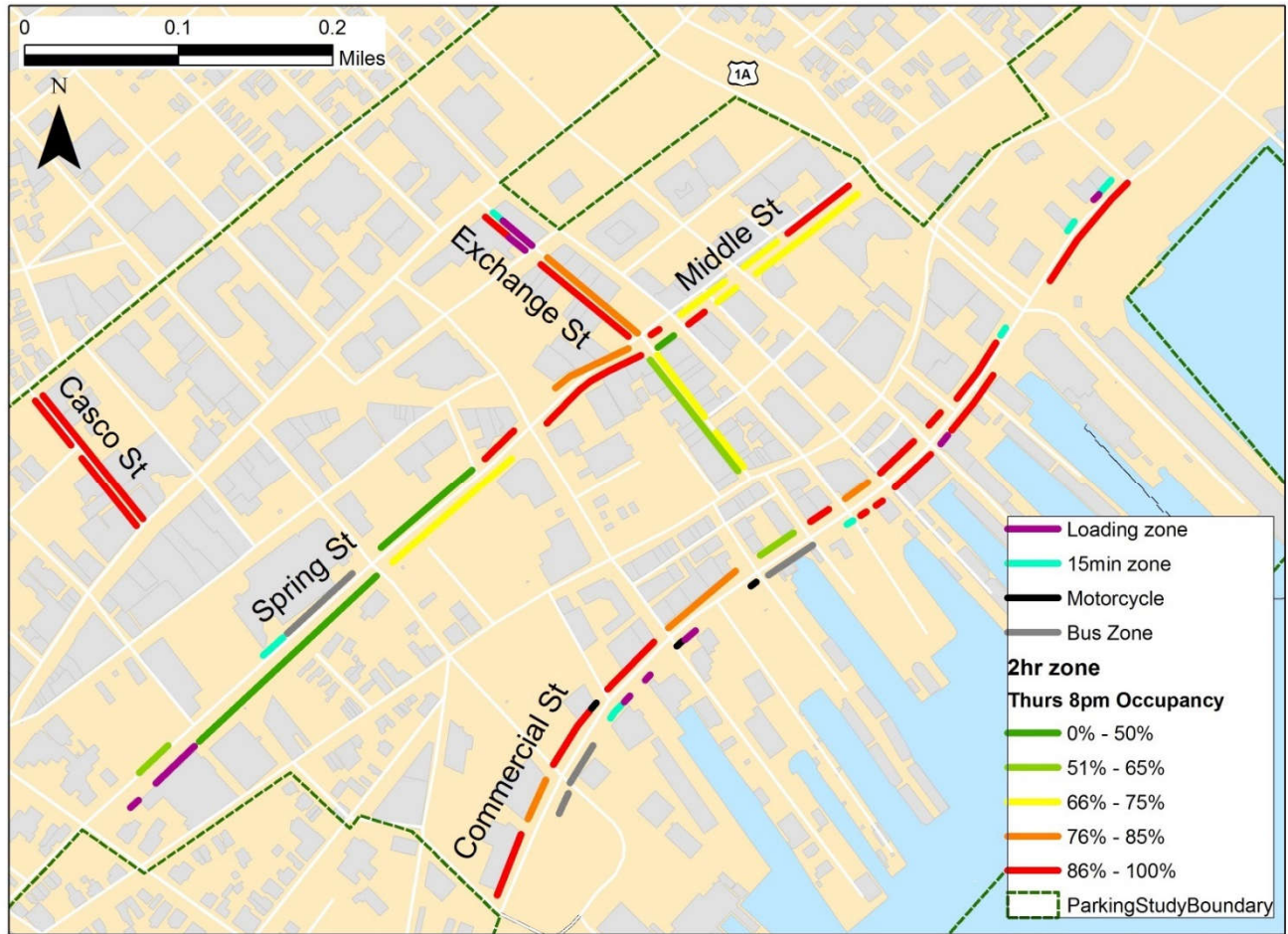
Thursday 6pm Parking Occupancy in Metered Zones



Thursday 7pm Parking Occupancy in Metered Zones

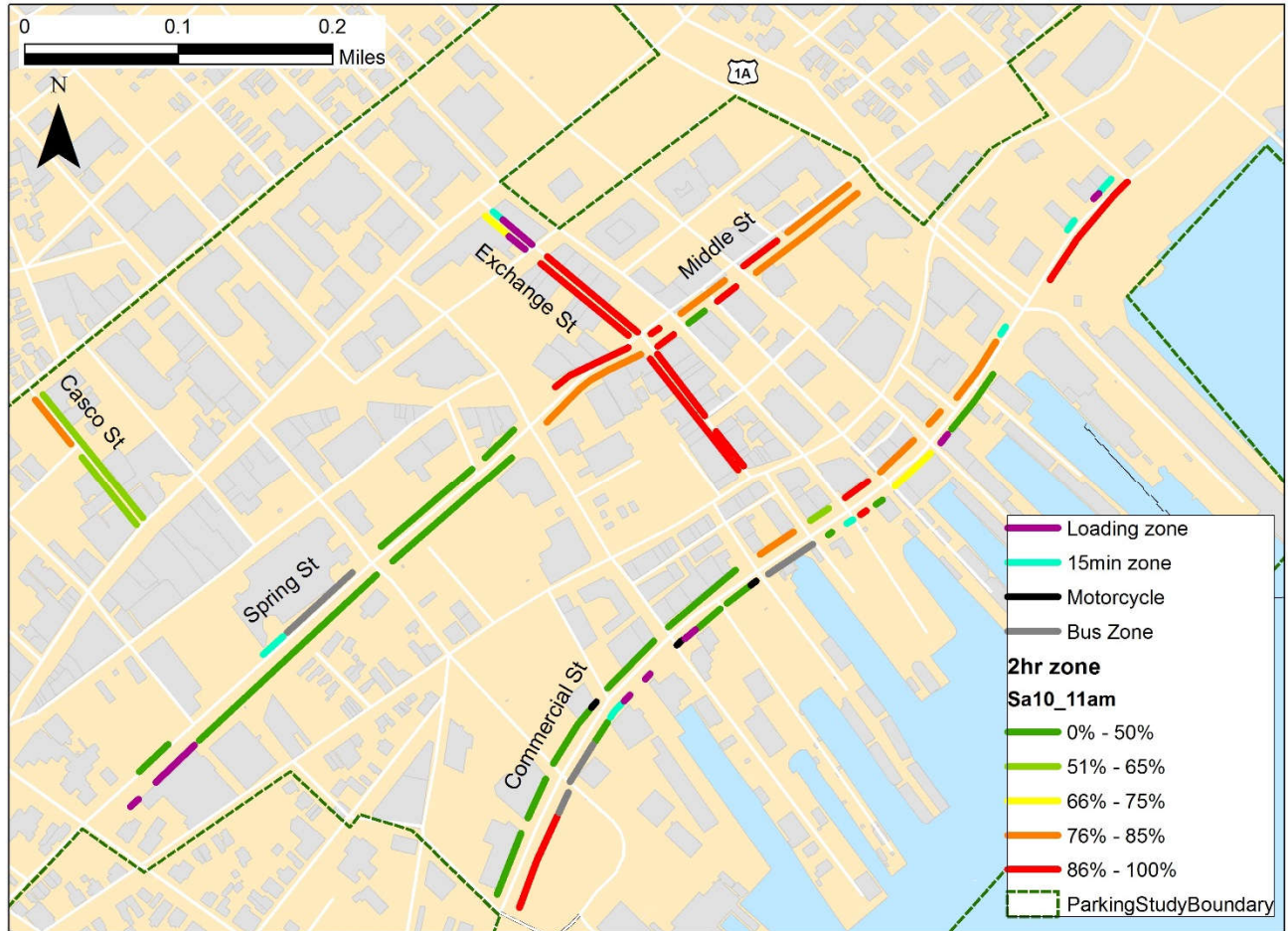


Thursday 8pm Parking Occupancy in Metered Zones

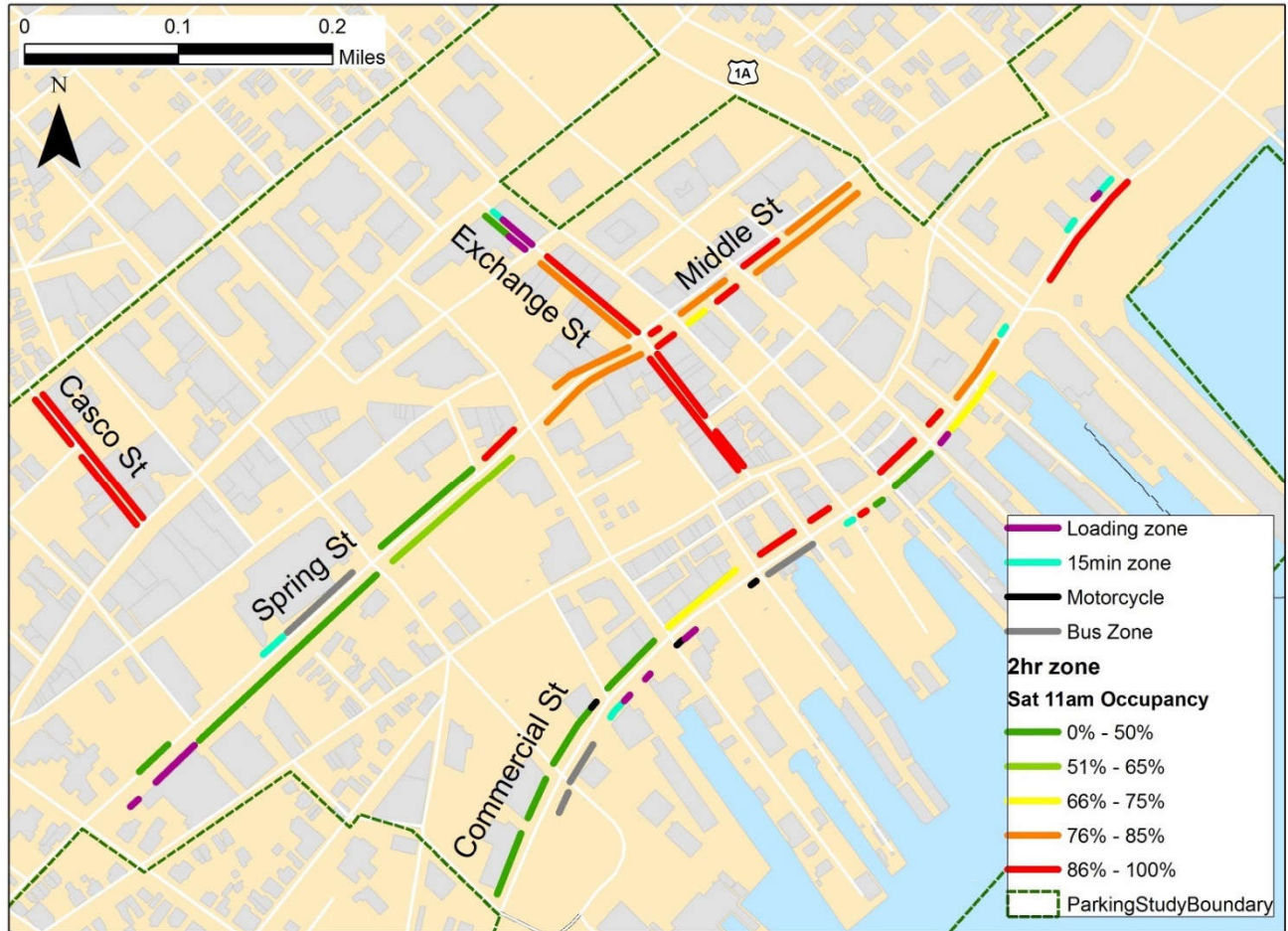


Maps of Saturday 12/01/16 On-Street Parking Occupancy Observed Sample Results

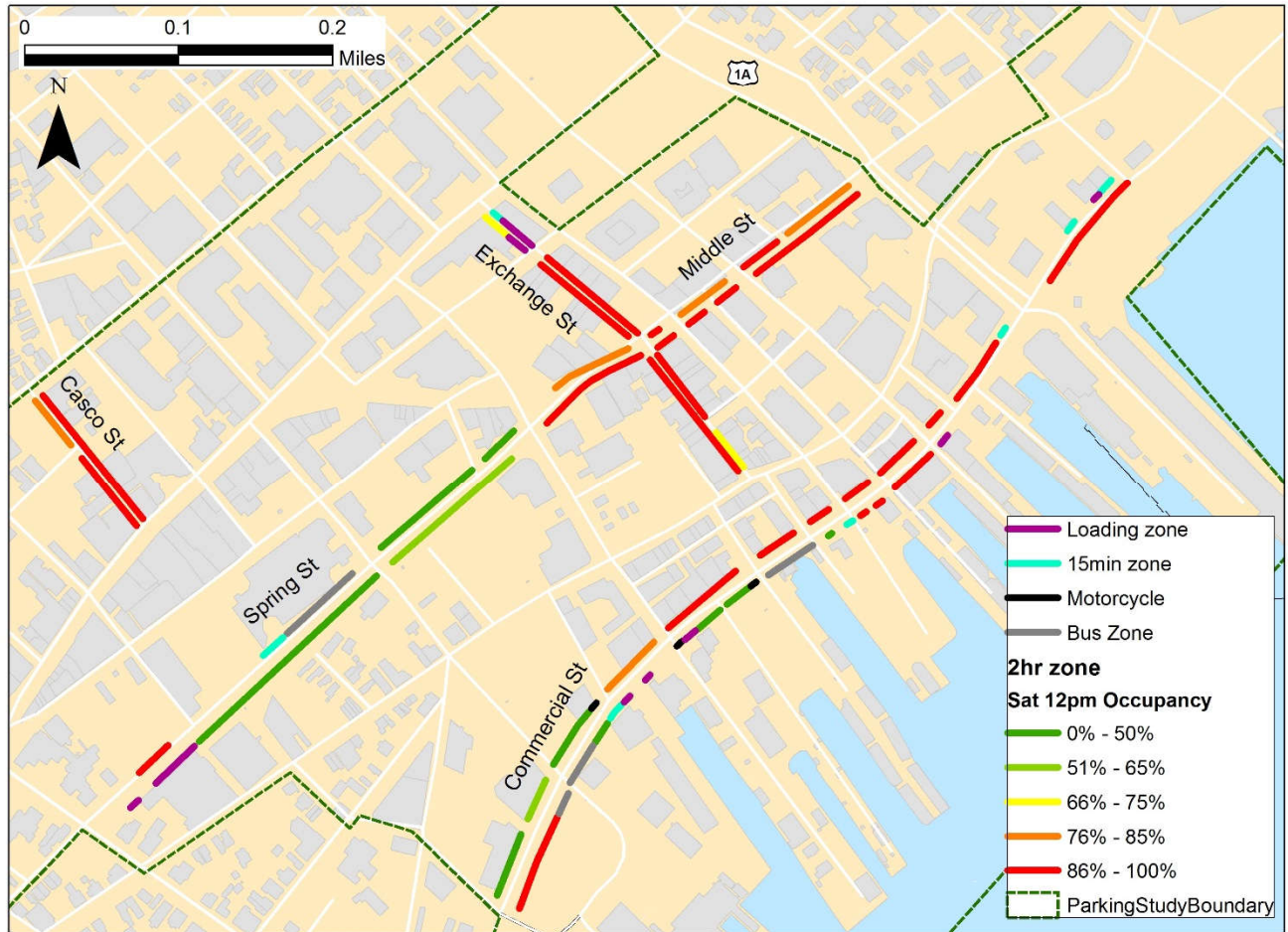
Saturday 10am Parking Occupancy in Metered Zones



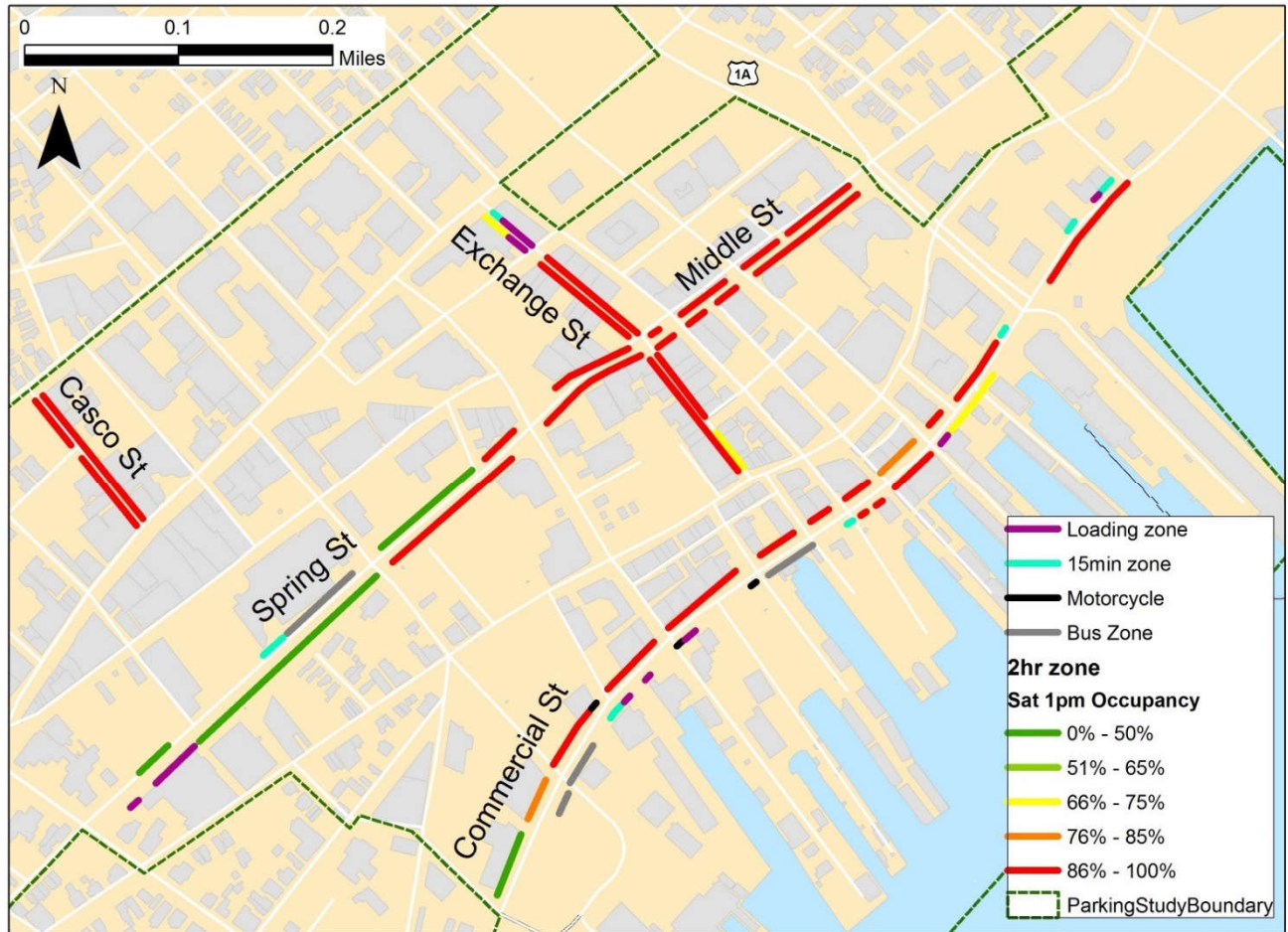
Saturday 11am Parking Occupancy in Metered Zones



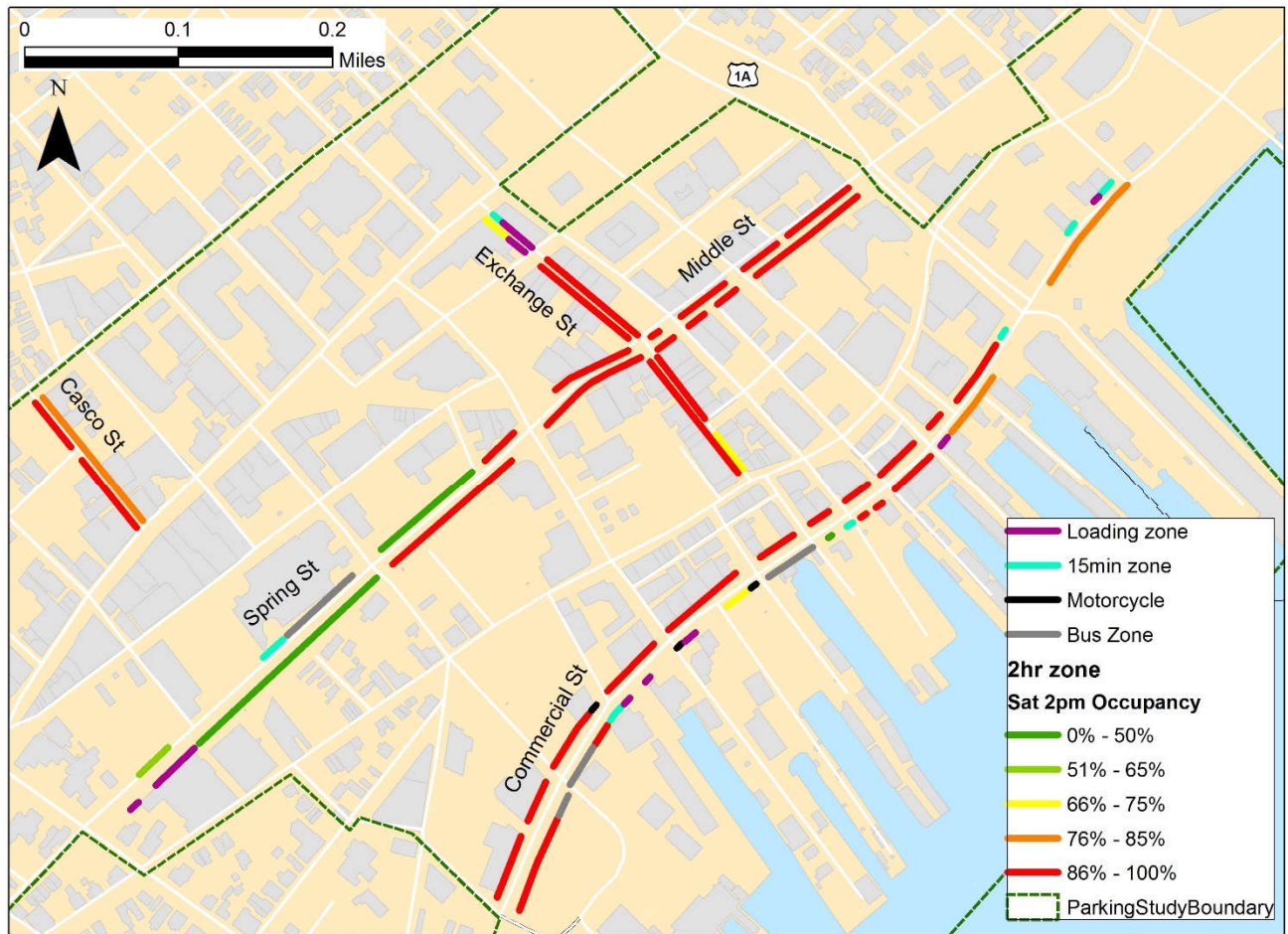
Saturday 12pm Parking Occupancy in Metered Zones



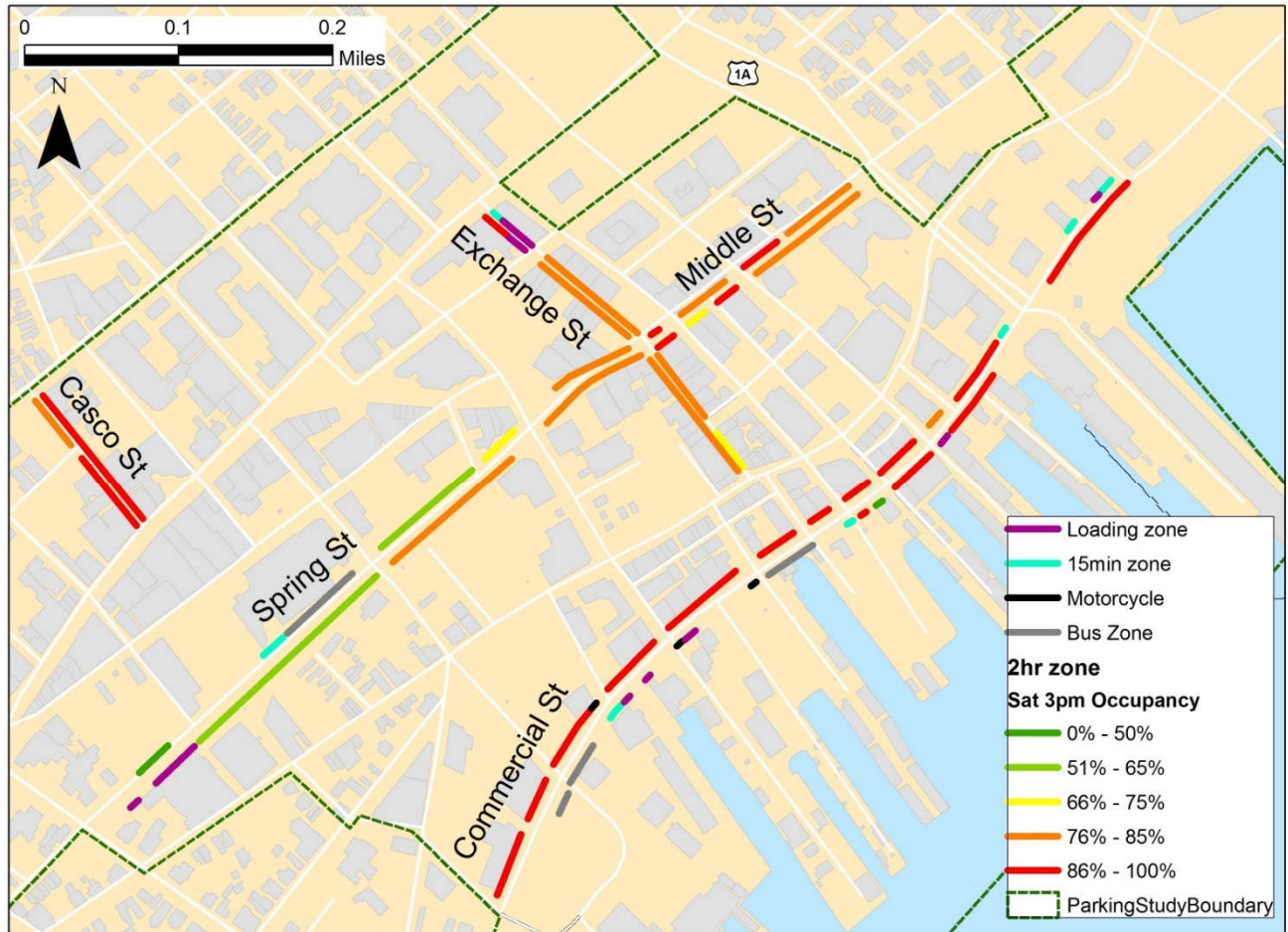
Saturday 1pm Parking Occupancy in Metered Zones



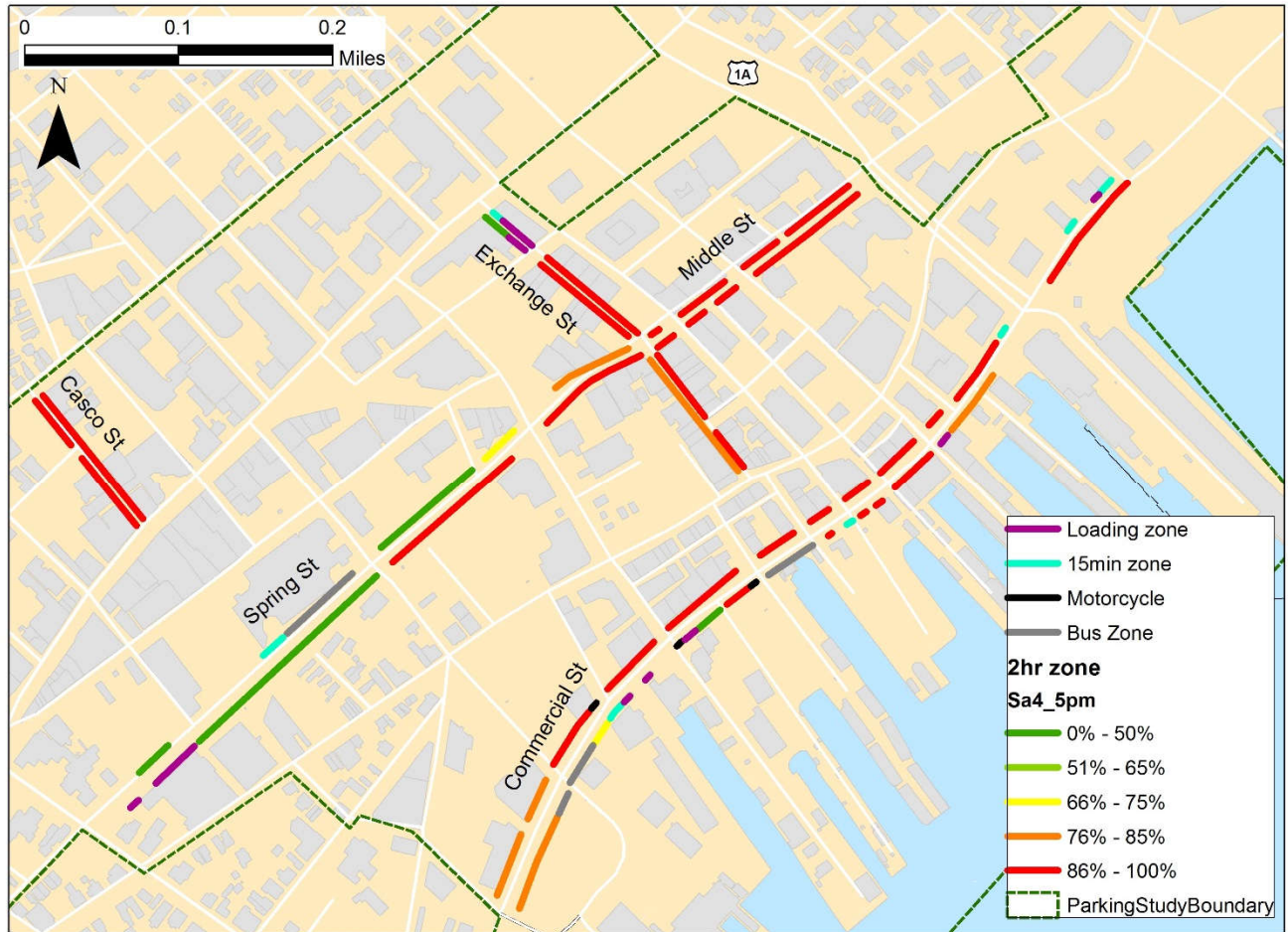
Saturday 2pm Parking Occupancy in Metered Zones



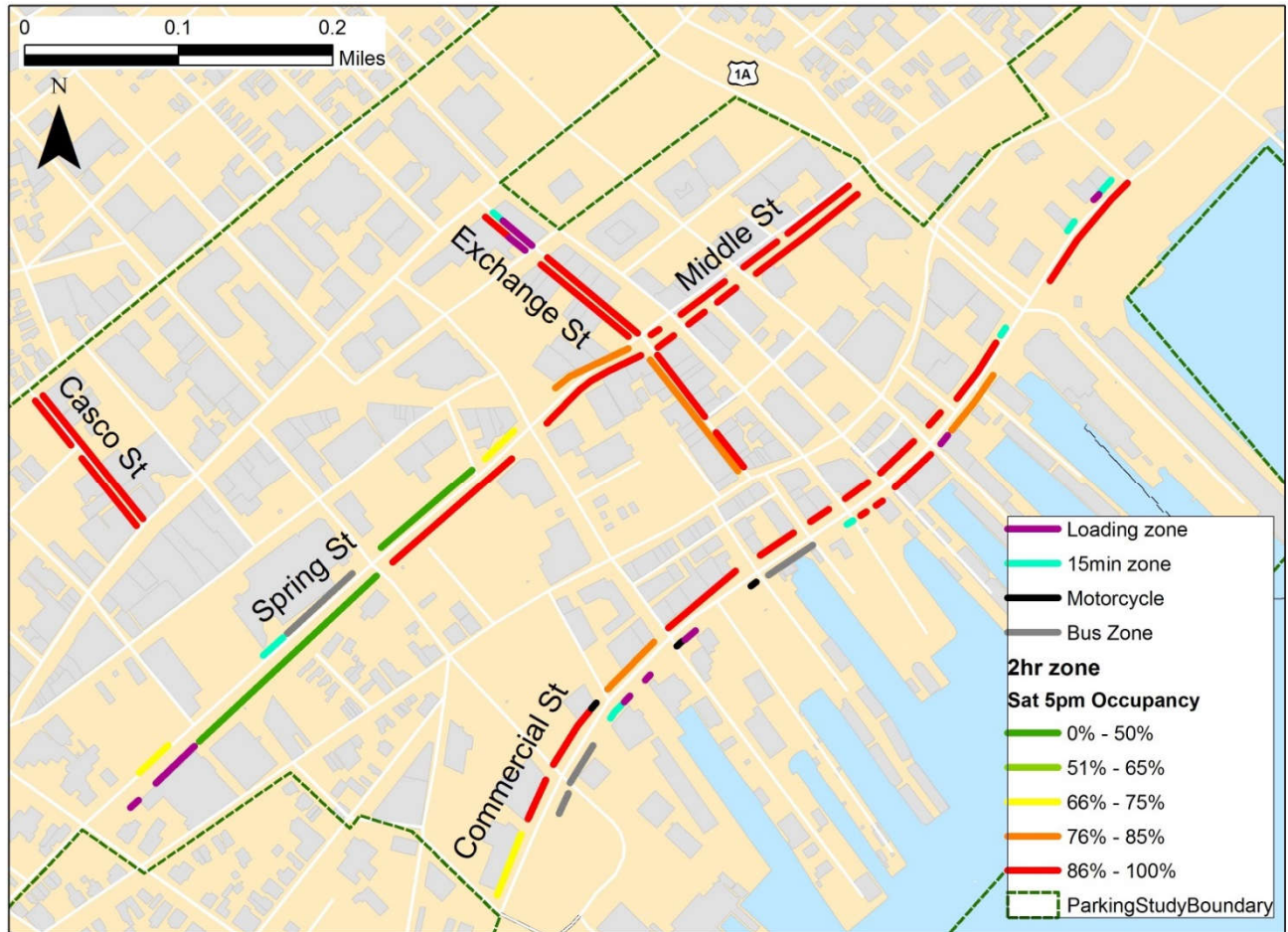
Saturday 3pm Parking Occupancy in Metered Zones



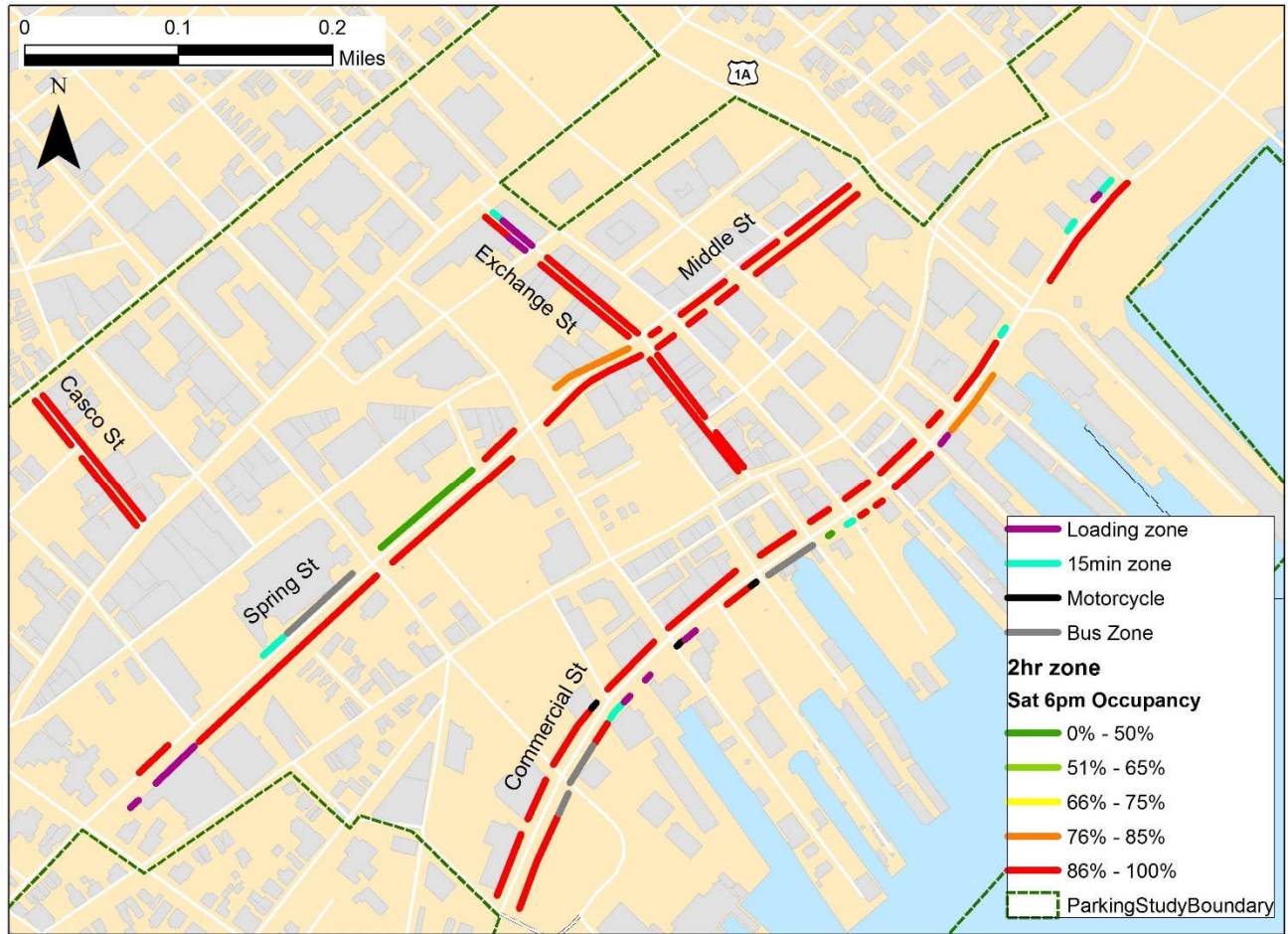
Saturday 4pm Parking Occupancy in Metered Zones



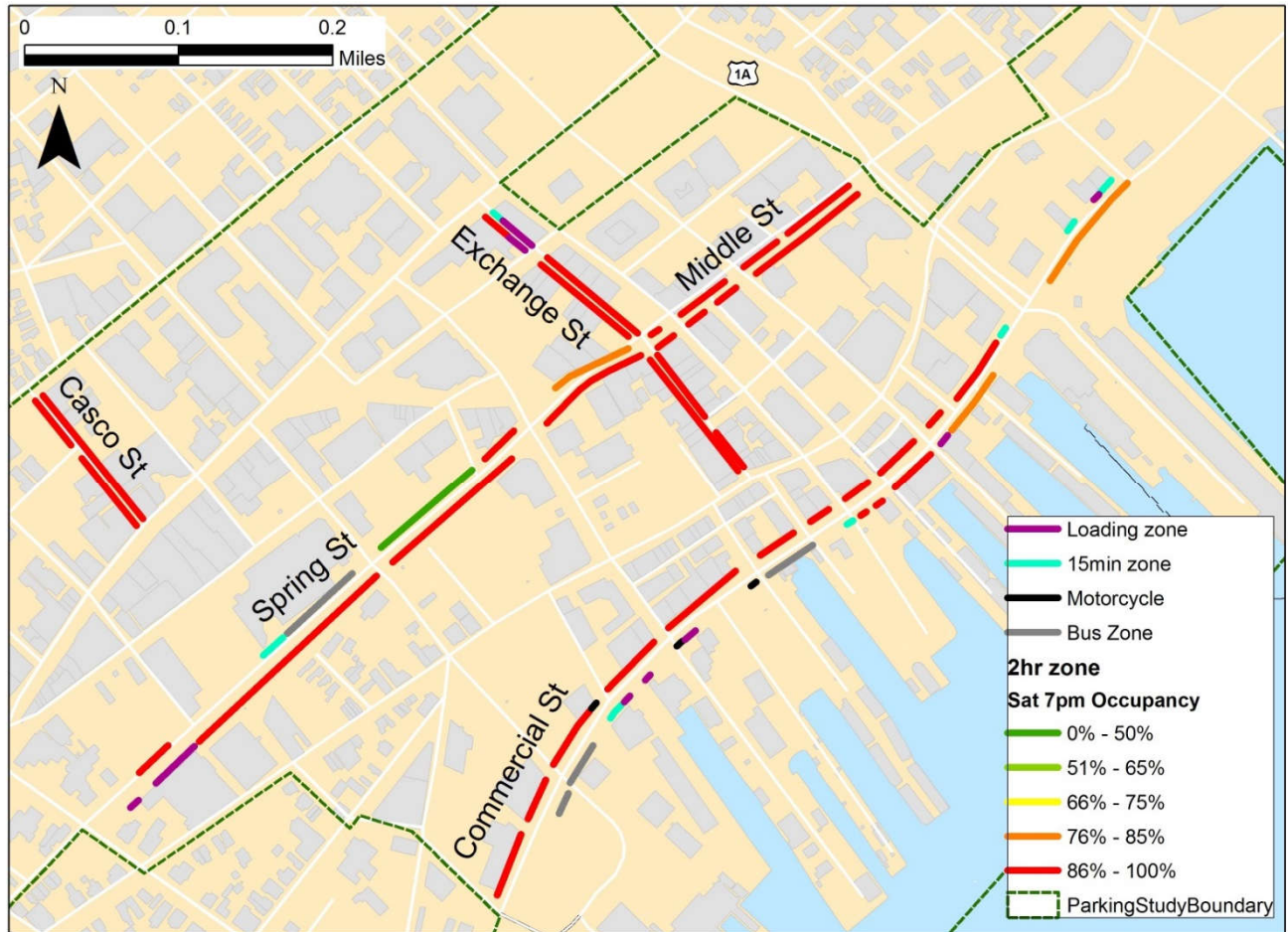
Saturday 5pm Parking Occupancy in Metered Zones



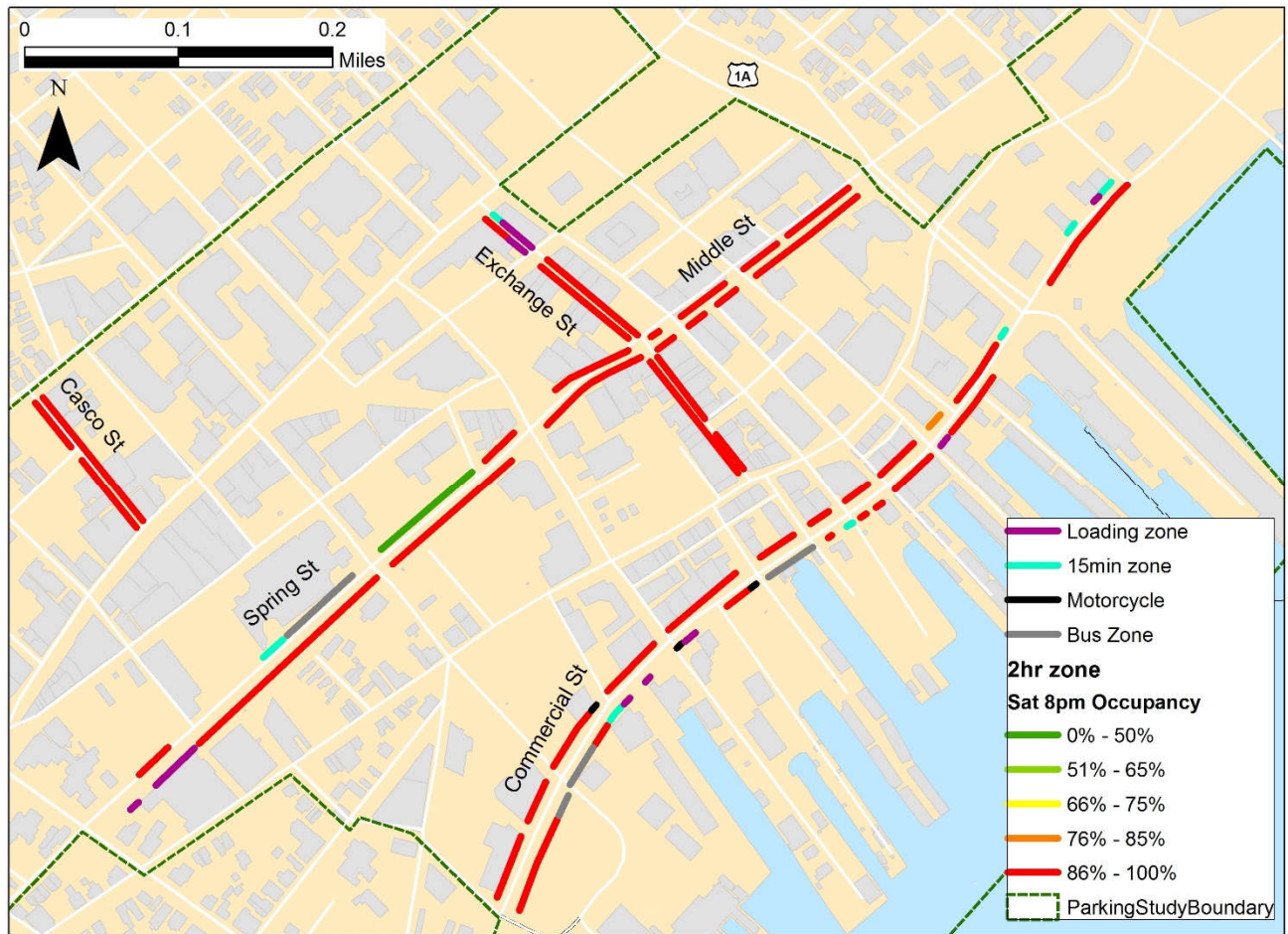
Saturday 6pm Parking Occupancy in Metered Zones



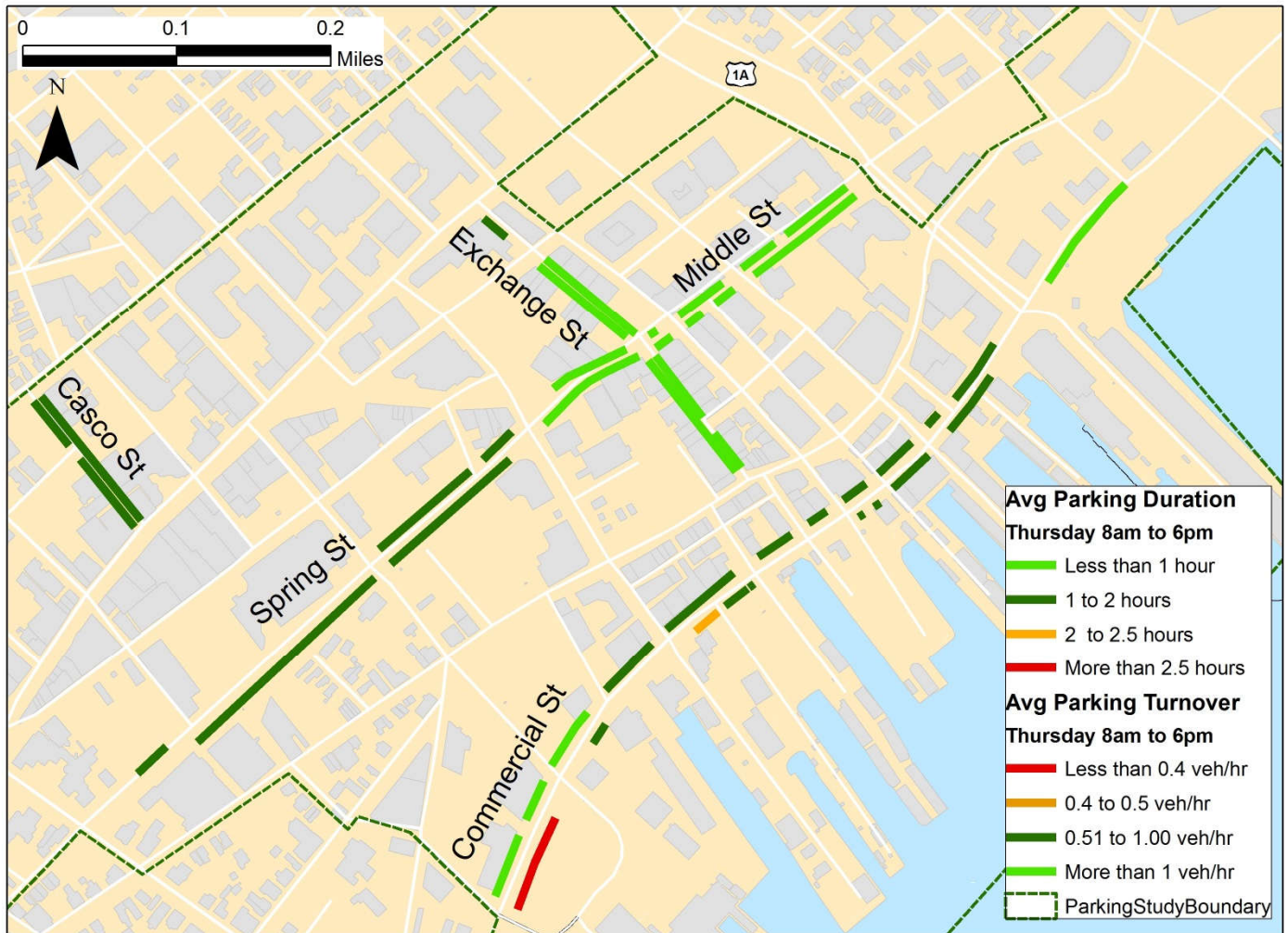
Saturday 7pm Parking Occupancy in Metered Zones



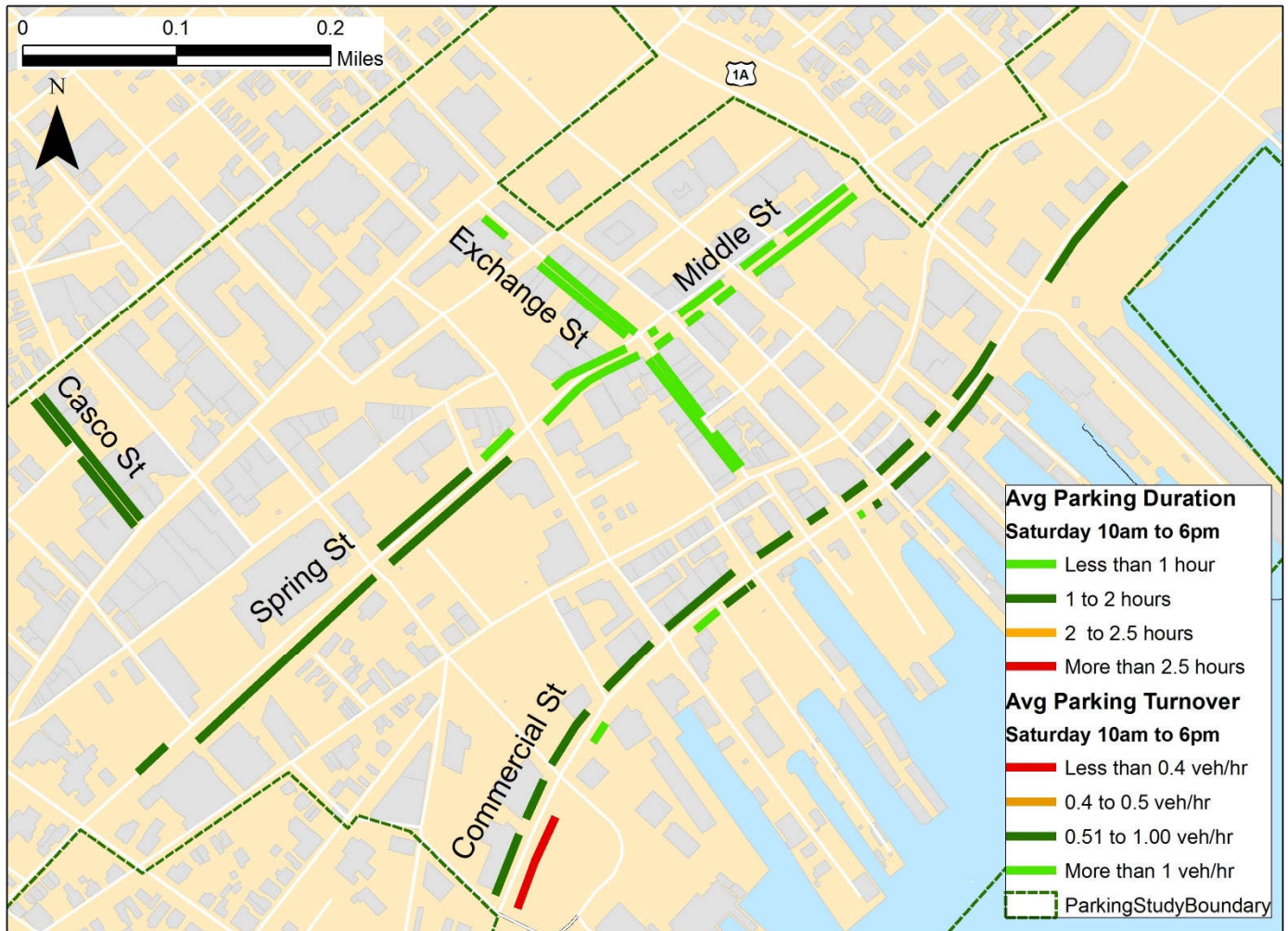
Saturday 8pm Parking Occupancy in Metered Zones

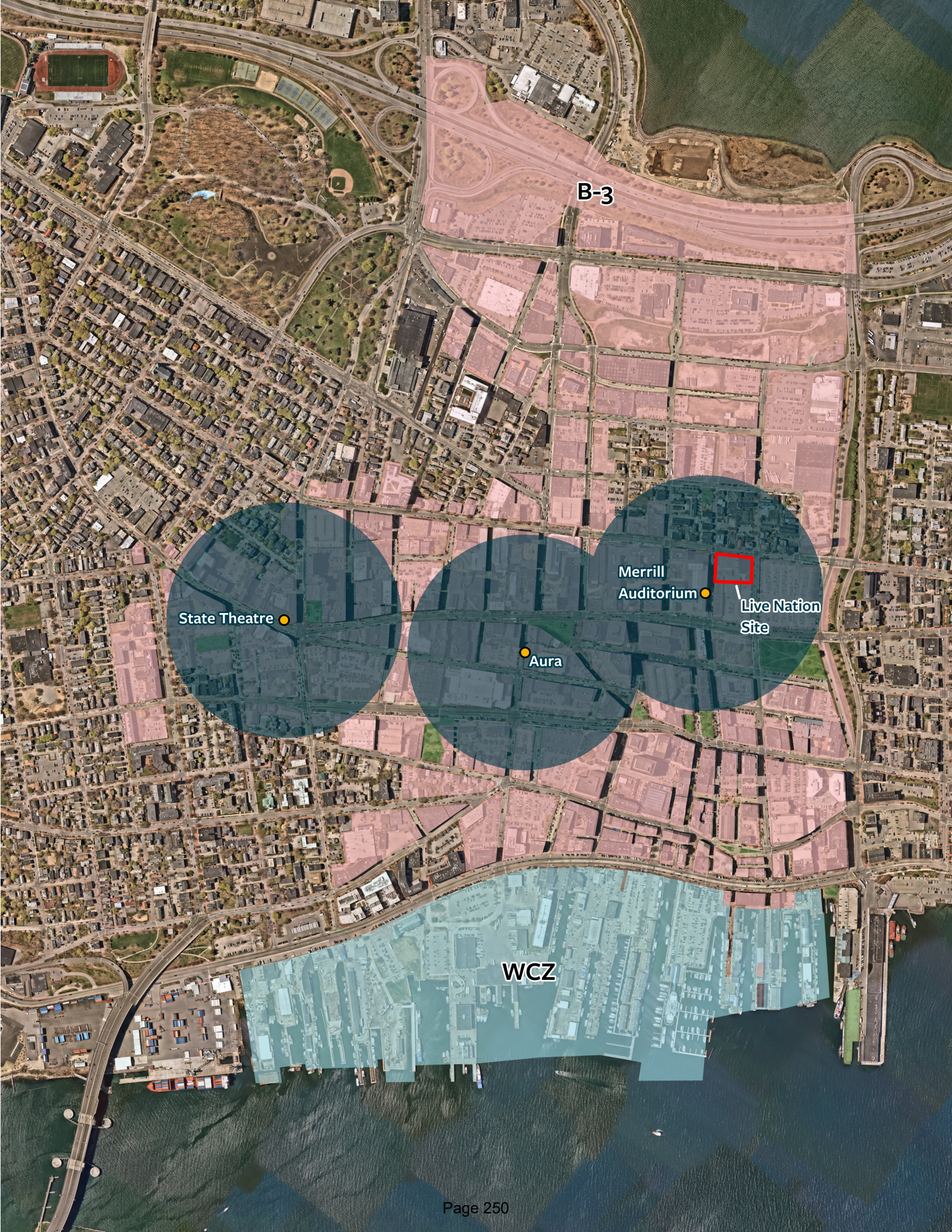


Map of Observed Average Parking Turnover Between 8am and 6pm Thursday 12/01/2016



Map of Observed Average Parking Turnover Between 8am and 6pm Saturday 12/03/2016





B-3

State Theatre

Aura

Merrill Auditorium

Live Nation Site

WCZ