

WATERFRONT SEATTLE

INITIAL OPERATIONS & MAINTENANCE REPORT

NOVEMBER 2015

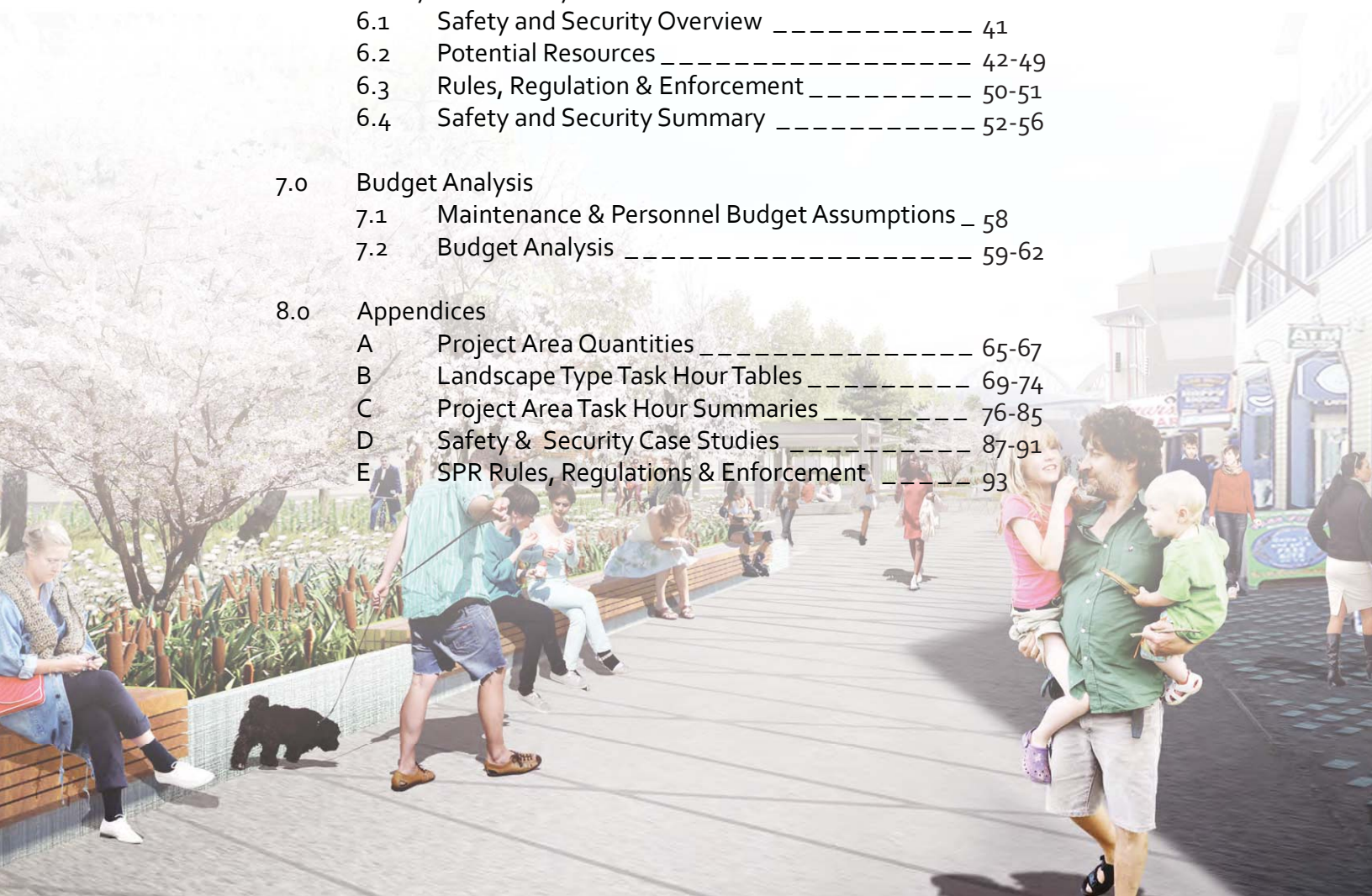
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SECTION 1.0

INTRODUCTION



1.0 Introduction

The purpose of this report is to provide an estimate of maintenance expenses and to identify the resources necessary for maintenance and operations of the Waterfront Seattle project. This report is the first in a series of steps that will ultimately result in an Operations and Maintenance Plan for the Waterfront.

ETM Associates (ETM) worked closely with the Office of the Waterfront to determine the project scope and evaluate the project components to define the various landscape types that will be found within the Waterfront Seattle project and to understand the maintenance needs for each. The design development drawings (30% and 60% DD, January -September 2104) upon which this Maintenance Report is based were provided by James Corner Field Operations (JCFO).

The document carefully considers each landscape type in the current Waterfront Seattle program design and the maintenance tasks, hours, personnel, materials, and supplies necessary to maintain the site. In developing the budget estimate, ETM accounted for standard maintenance practices (mowing, tree care, etc.) as well as site specific requirements and Seattle's unique environment. Considerations have also been provided for safety, security, and facility needs to support Waterfront operations and maintenance. This report provides a detailed assessment of operations and maintenance costs that reflect the current level of program design and can help to inform decision making as the project design develops. A preferred operating model, specific roles and responsibilities have not been finalized at the time of this report submission and will be finalized in the future. The findings in this report should be updated to reflect design revisions as the program reaches final design.

The Operations & Maintenance Report is organized into the following sections:

Section 2: **Maintenance Framework** defines the extent of the Seattle Waterfront project, landscape categories and describes the typical landscape types throughout the project area.

Section 3: **Maintenance Tasks and Standards** of care identifies key assumptions and decisions that influence maintenance costs. Maintenance standards have been developed for the landscape types in order to estimate time required to maintain the project areas.

Section 4: **Maintenance Equipment & Materials** discusses equipment and material needs.

Section 5: **Maintenance & Operations Facilities** provides potential facility locations and space needs to accommodate multiple scenarios of daily operations.

Section 6: **Safety and Security** discusses potential staffing, technology & programming resources, case studies of Seattle public space security programs, and initial safety & security recommendations.

Section 7: **Budget Analysis** provides an operations and maintenance budget for the completed Waterfront Seattle program based on the defined standards of care and operating assumptions.

SECTION 2.0

MAINTENANCE FRAMEWORK

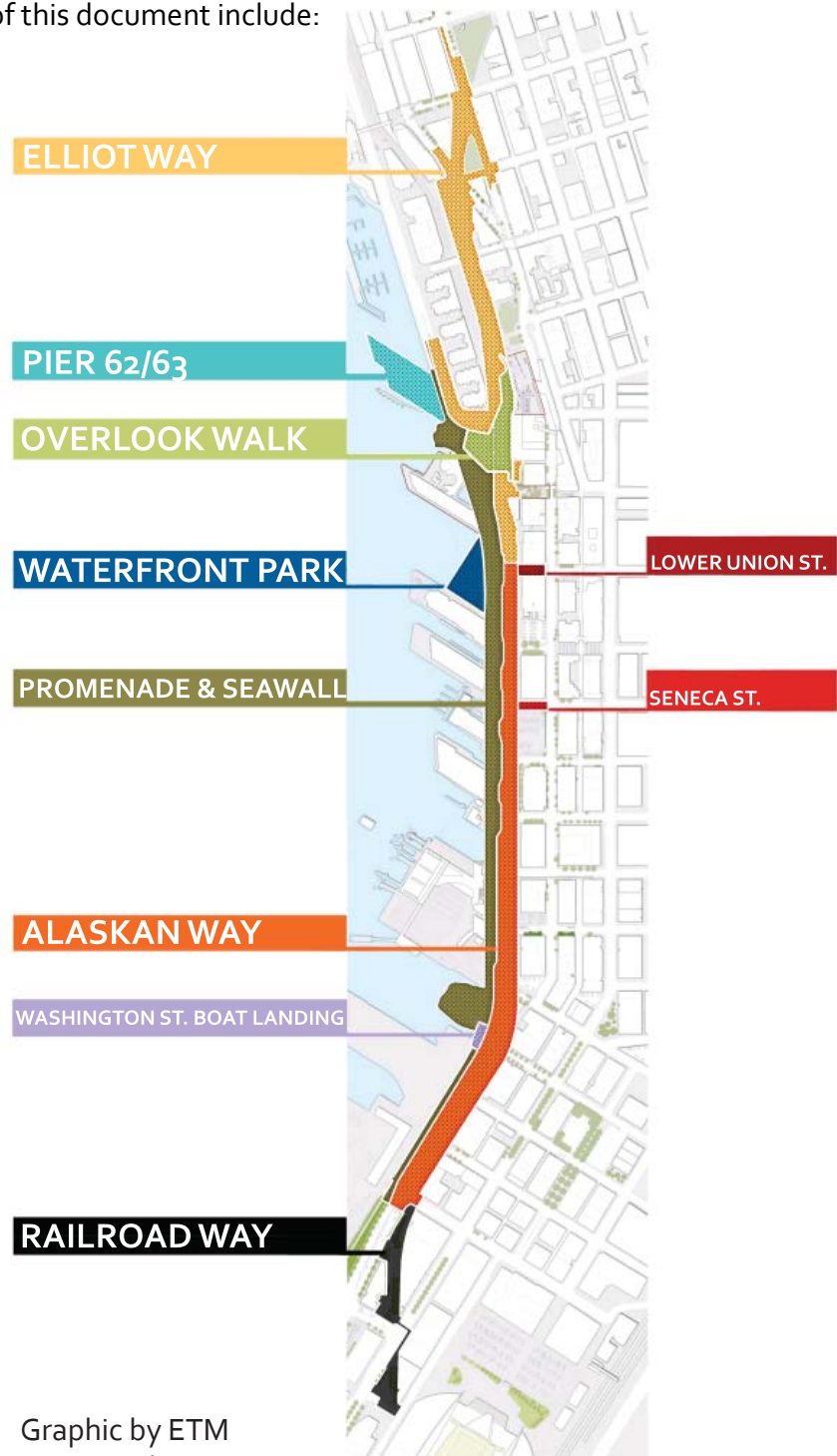


2.1 Scope & Individual Project Areas

The project spans the Waterfront from Railroad Way along Alaskan Way/Elliott Way north to Battery Street. It includes the rebuilt Elliott Bay Seawall, over eight acres of new and improved public open space, improved connections between center city neighborhoods and Elliott Bay, critical utility infrastructure, and new Alaskan Way and Elliott Way surface streets to serve all modes of travel.

The project areas within the scope of this document include:

- Promenade
- Alaskan Way
- Elliott Way
- Lower Union Street
- Overlook Walk
- Waterfront Park
- Railroad Way
- Seneca Street
- Pier 62/63
- Washington Street Boat Landing



Graphic by ETM
Basemap by JCFO

2.2 Methodology

The first critical step in defining a maintenance plan is to create a framework tailored specifically to the project design and intent. For the purposes of this report, ETM and the Office of the Waterfront defined several landscape categories to be maintained each with a sub-set of landscape types, such as paving areas and planting beds, which are used as the basis for estimating annual maintenance costs.

Annual maintenance tasks were developed for each landscape type along with an estimated number of hours needed for maintenance of one (1) unit of each landscape type. The hours per unit were then multiplied by the total number of units of each landscape type. This enabled ETM to determine an estimated total number of hours needed for annual maintenance of the Waterfront project. The hours were then used as the basis for determining annual personnel costs.

This report is based on JCFO's current level of design plans dated January thru September of 2014, with assumptions regarding materials and quantities based upon illustrative project drawings and basis of design reports. Detailed task summaries and estimated hours for each landscape type can be found in Appendix B.

2.3 Landscape Categories and Types

The Waterfront project lends itself to a classification of six (6) broad landscape categories which are listed below:

- Paved Areas (P)
- Planting (PL)
- Furnishing & Site Amenities (F)
- Play Areas (PA)
- Infrastructure (I)
- Structures/Building Space (S)

Each of the six (6) landscape categories are further divided into landscape types which account for all project components, yet simplify the complex project into clearly defined maintenance groups, each with specific maintenance tasks, frequencies and standards. A summary table of the individual landscape types is provided below in Figure 2.1. Detailed tables depicting all project design elements and their respective landscape types are provided in Appendix A.

Paved Areas P1 - Asphalt & Concrete Paving P2 - Mortar Set Inlay Paving P3 - Dry-Laid Paving P4 - Boardwalk	Furnishing & Site Amenities F1 - Furnishing F2 - Moveable Furnishing F3 - Trash & Recycling F4 - Railing, Fencing & Screens F5 - Planter Walls F6 - Signage and Wayfinding F7 - Artwork & Sculpture
Planting PL1 - Trees PL2 - Shrubs PL3 - Perennial Planting Areas PL4 - Groundcover Planting Areas PL5 - Vine Planting along Screen PL6 - Habitat Beach PL7 - Bioretention Cells PL8 - Lawn Areas	Play Areas PA1 - Sand Play Area PA2 - Rubber Surface Play Area
Structures/Building Spaces S1 - Kiosks S2 - Concrete Structures S3 - Maintenance Facilities S4 - Restrooms S5 - Restrooms (Attended) S6 - Elevators S7 - Building Maintenance	Infrastructure I1 - Irrigation I2 - Water Feature I3 - Site Drainage I4 - Storm Filter Catch basins I5 - Catch basins I6 - Pole Lighting I7 - Pedestrian Lighting

Figure 2.1 Summary table of landscape types

Paved Areas

Several types of paved surfaces will be located throughout the project areas including cast in place concrete, light penetrating surface (LPS) panels, asphalt bike paths, boardwalks, stone, brick, and metal inlay pavers, as well as pedestal paving on structures. Many of the surfaces will include epoxy or thermoplastic wayfinding graphics. Although often unnoticed by the average visitor, paving is a key element in urban landscapes.



Wood Boardwalks



Brick/Stone Inlay Paving



Steel Inlay Paving



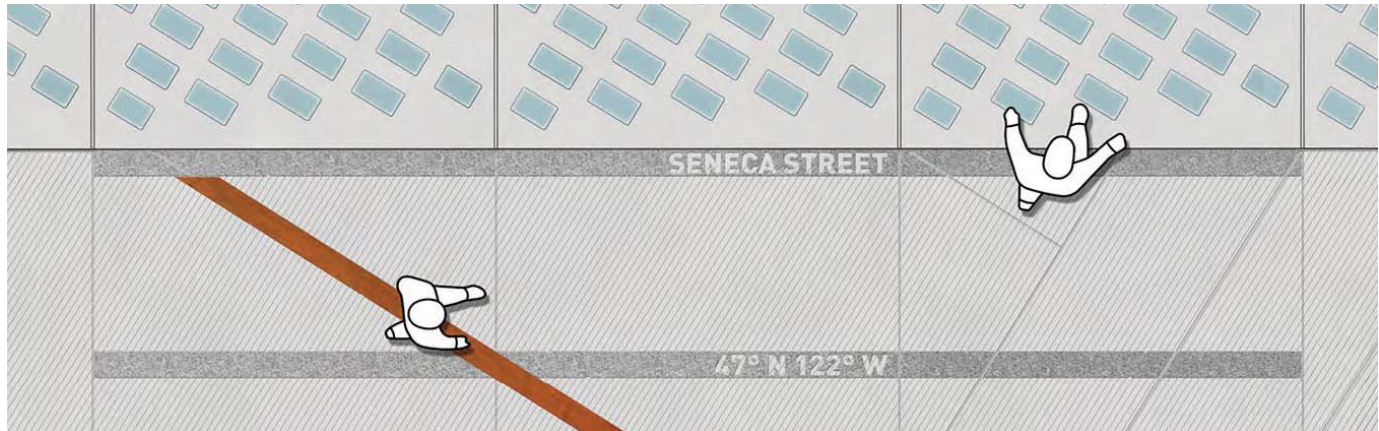
Light Penetrating Surface (LPS)



Pedestal Pavers



Cast in Place Concrete w/Grooving



Design rendering of Promenade paving, image by JCFO

Planting

The project area designs call for a broad array of mixed perennial planting beds, bioretention basins, groundcovers, a small coastal beach, tree and shrub plantings, vegetated slopes, lawn areas, and vegetated screens. Lawn areas will likely experience heavy use, and the plantings along roadway medians and sidewalks will endure significant abuse from road traffic, pedestrian traffic, and wet winter weather. Although carefully selected to withstand the harsh coastal environment of Elliott Bay, Waterfront plantings will have to endure strong winds, harsh sun and frequent rains. Plantings are particularly important for visitor perception of a clean, safe public space which is often attributed to the appearance of well-managed planting areas.



Groundcover Planting



Perennial Planting



Bioretention Planting



Shrubs



Trees



Vine Planting on Screen



Turf Lawn, rendering by JCFO



Habitat Beach, rendering by JCFO

Furnishing & Site Amenities

Furnishings and site amenities includes a diverse mix of site features including all site amenities (benches, drinking fountains, swings, bike racks, etc.), moveable seating, trash and recycling stations, railings, screens and fences, painted steel planter walls, wayfinding and signage, as well as artwork and sculpture. These elements are particularly important from a maintenance perspective as they are highly visible in the landscape and will receive a lot of use and abuse from visitors.



Railing



Bollard



Trash/Recycling



Bike Rack



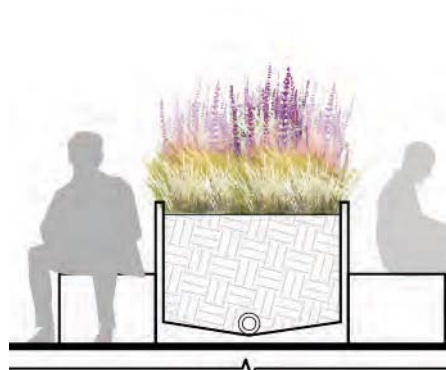
Drinking Fountain



Bench



Stone Seating
Graphics by JCFO



Steel Planter



Lawn Bench

Play Areas

Several small areas will be located throughout the main corridor which will include a number of play areas with either sand or rubber safety surfacing. Play features will include slides, small play objects, and a water pump play table. These play areas are located in areas of high visitor concentration and will experience frequent use.



Mud Table in Sand Play Area



Slides, rendering by JCFO

Infrastructure

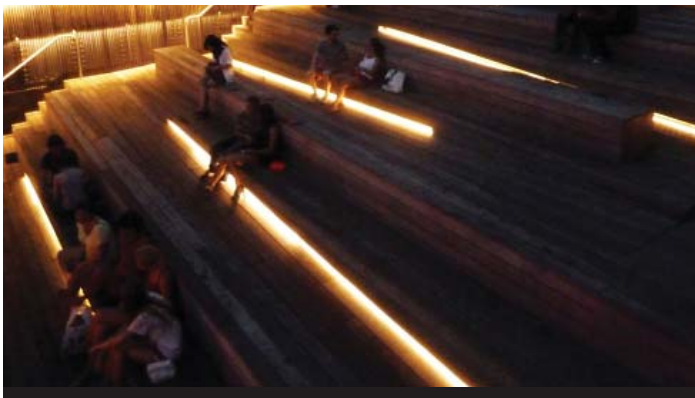
The Infrastructure category includes functional project elements such as irrigation, water feature, pedestrian and roadway drainage, as well as pedestrian lighting. These components are vital to maintaining a safe, healthy landscape and must be regularly inspected and maintained.



Irrigation



Water Feature



Strip Lighting



Site Drainage

Structures & Building Spaces

This category includes several freestanding structures, facilities within larger buildings, as well as entire buildings that will need to be cleaned, maintained and repaired. These structures include the promenade kiosks, elevator enclosures at Lower Union and the Overlook Walk, concrete pedestrian structures, as well as buildings B & C at the Overlook Walk.



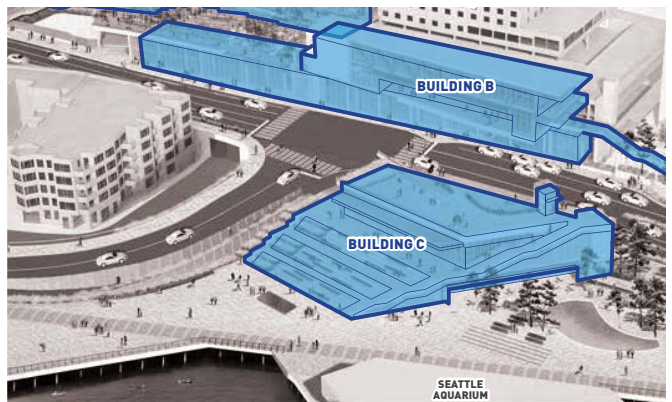
Elevators



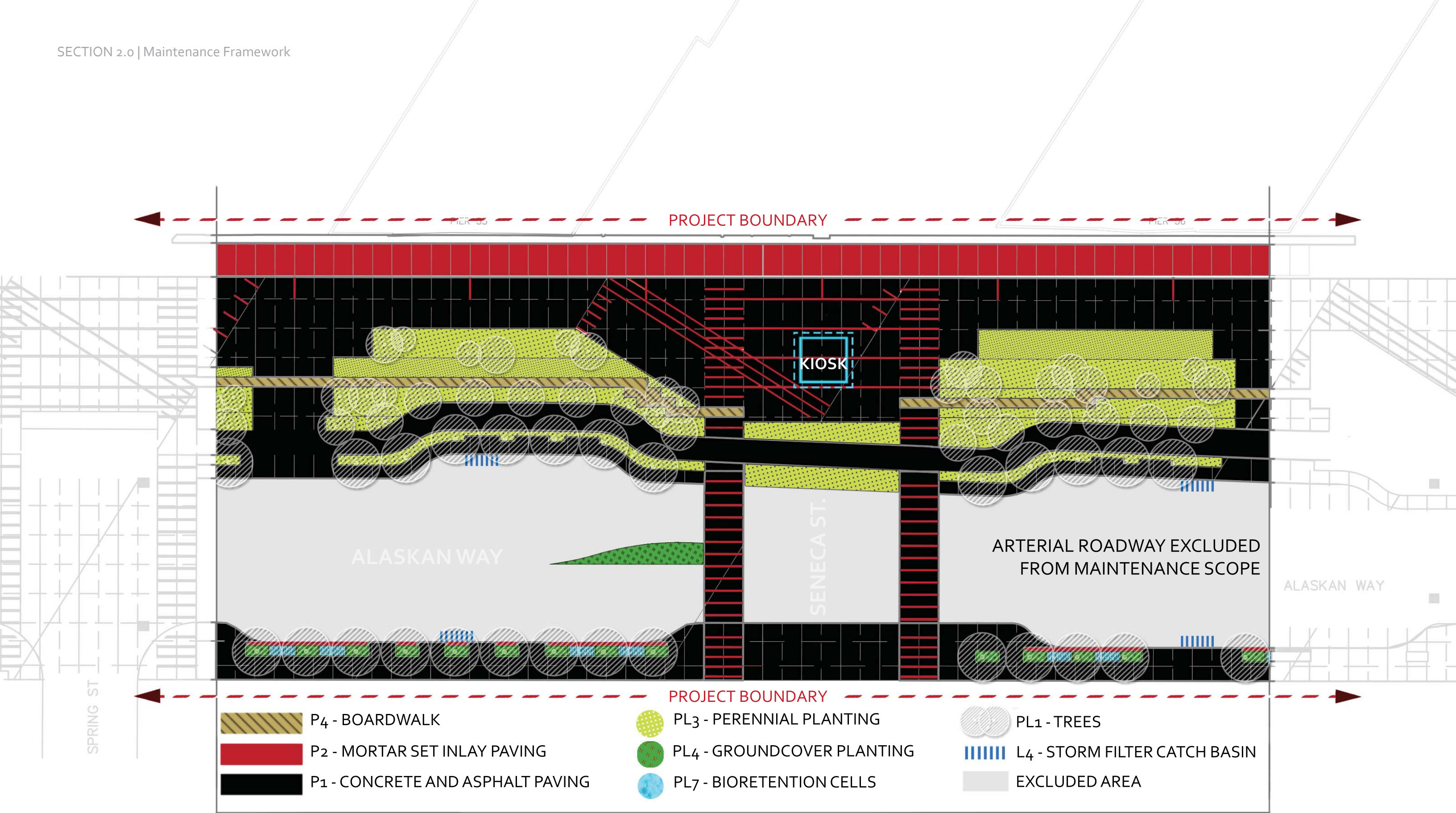
Promenade Kiosks, rendering by nARCHITECTS



Union Street Overpass, rendering by JCFO



Buildings B & C, rendering by JCFO



2.4 Maintenance Scope & Exclusion Areas

Several areas, elements, or specific maintenance responsibilities are not included within the maintenance scope for the following reasons:

- The O&M Report seeks to create a clearly defined area for Waterfront Seattle operations and maintenance activities.
- Some assets are excluded where existing agencies have clear, strong competencies – such as signals, bridge structures and arterial asphalt.
- The defined area for Waterfront Seattle operations and maintenance activities acknowledges integration with existing neighborhoods and parks.

The areas or elements excluded from the scope of this maintenance report include:

- Roadway or vehicle parking area maintenance and cleaning (other than E/W pedestrian crossings with inlay pavers)
- Roadway curbing maintenance and cleaning
- Traffic signal maintenance
- Roadway signage maintenance
- Underground electrical utilities
- Roadway and cycle track lighting fixtures (pole lighting)
- Inspection and maintenance of pier structure (pier decking and pedestrian amenities only)
- Major maintenance of concrete structures (pedestrian overpass, stairs)
- Maintenance and cleaning of interior vendor spaces of the Promenade kiosks

Note: The above are not included in ongoing (annual) maintenance estimates or long-term life-cycle replacement cost estimates. Maintenance and repair of these elements/features will not be the responsibility of Waterfront Seattle managers and will be performed by City of Seattle operating departments or other entities.

Project Area Exclusions

Bell Street: The Waterfront program's Bell Street project is contiguous with the Bell Street Park and is a natural fit to become a part of the existing park, consistent with SDOT and Parks partnership agreement.

Lenora Street Bridge: The Waterfront program will design and build the Lenora Street Bridge project, but will be owned and maintained by the Port of Seattle.

Columbia Street: Columbia Street project improvements will establish an important transit hub connected with the wider Colman Dock Transportation Hub at this location. As such, the focus of improvements is providing transit facilities and basic street improvements to be managed by King County Metro and SDOT.

Main and Washington Streets: These project improvements stretch deep into the Pioneer Square neighborhood and are limited in scope and consistent with its historic character. Therefore, care of these elements is best overseen by local stakeholders, such as the Alliance for Pioneer Square, and in line with treatment for the rest of the neighborhood.

Note: The above maintenance scope assumptions have been evaluated and defined by the SDOT and the Office of the Waterfront.

SECTION 3.0

MAINTENANCE TASKS AND STANDARDS OF CARE



3.1 Standards of Care Summary

The standards of care for maintenance of any public space directly affect the annual maintenance budget and also influence perceptions of safety and use. For example, a maintenance plan in which all tasks are carried out at or above recommended best maintenance practices may create a pristine landscape but may ultimately prove to be unsustainable due to cost. Alternatively, a maintenance plan in which tasks and repairs are carried out at minimal levels may reduce annual budgets, but will likely result in high capital costs required for replacement or repairs that could have been prevented with regular care. Low standards of care can also create an unsafe environment for users.

Intensity of use is another factor that influences the maintenance budget. In general, the greater number of visitors a public space receives, the greater the maintenance load. Similarly, areas with intensive use and higher concentrations of visitors, such as play areas and lawns, typically require greater maintenance. Directly related to this is the fact that the level of maintenance impacts park use. Simply stated, a well-maintained park attracts visitors, whereas a poorly maintained site discourages positive park visitorship and often invites misuse and vandalism. Given this relationship between maintenance and use and the aforementioned standards of care, it is important to develop a maintenance plan that balances fiscal considerations with maintenance needs in order to provide a sustainable, high-quality visitor experience.

General standards of care are based on the Operational Guidelines for Grounds Management, 2001, published by APPA, National Recreation and Park Association, and Professional Grounds Management Society, and adapted to the specific needs of the Waterfront project.

Further consideration was given to the standards of care for the Waterfront Seattle Program based on the vision of the design team and Guiding Principles defined by the Office of the Waterfront. The design team led by James Corner Field Operations (JCFO) has outlined a vision for “high quality levels of maintenance” throughout the project. Furthermore, the Office of the Waterfront has defined the Guiding Principles for Operations and Maintenance to “proactively manage new waterfront parks and public spaces to create Seattle’s cleanest and safest public space, with high quality operations, maintenance, programming and security”.

ETM worked with the SDOT Office of the Waterfront and Seattle Parks and Recreation to select levels of care that meet the maintenance needs of the Waterfront project features, while also creating a responsible maintenance budget. The standards of care for the landscape types are summarized in the following section.

3.1.1 Defining Maintenance Work

Despite the complexity of measuring maintenance work, the process is essential. A good classification system lends itself to the application of standards, as it supports management decision-making (e.g. deploying personnel and equipment), and is based on an understanding and nature of the maintenance work.

Three critical variables condition maintenance work:

- The nature of the task
- The skill levels of those performing the task
- The physical setting

For example, cleaning a paved surface is different from maintaining street tree plantings, both in type of equipment required and in the time it takes to perform the work, as well as the skill of staff performing the work.

The estimated hours for maintenance account for variation in frequency of tasks over the course of the growing season as well as use of the site. Some tasks, such as mowing, occur on a well-defined schedule that is associated with the growing season, while other tasks, such as litter removal are on-going and can be impacted by use of the site.

The estimated task hours were determined by using standard maintenance practices and time standards. Hours were determined and used to project staffing requirements and associated costs. This process was repeated for all maintenance tasks. Travel time has been considered in the setting of time standards and task frequencies.

3.2 Standards of Care

The standard of care summaries in this section define the general tasks and frequencies for all project area components and provide a benchmark for general care, functionality and appearance.

The table below shows a sample task hour standard for the Asphalt and Concrete Paving (P1) landscape type which defines the various required maintenance tasks, their frequencies, and the total number of hours required to perform each task for a typical unit of paving (in this case 10,000 SF).

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS
Paved Areas - HOURS/Unit								
P1 - Asphalt & Concrete Paving							36	Annual hours/10,000 SF
Clean paved surface	2	msf	5	10	0	52	9	20% of area ; with backpack blower
Power washing & permeable Asphalt Cleaning	2	msf	70	140	2	2	5	20% of area; clean stained/dirty areas with power washer & clean permeable asphalt areas with regenerative air sweeper or vacuum sweeper
Paving repair	1	csf	240	240	4	2	8	1% of area - repair pavement marking, cracks, spalling, settling, etc.
Graffiti removal		allow					5	Includes both gum and graffiti removal
Remove litter	0.5	msf	3	2	0	260	7	5% of area; 5x per week
Snow and ice management	10	msf	20	200	3	1	3	100% of an area - Includes snow removal, sand/salt spreading, etc. with vehicle and hand equipment

The estimated total annual hours required to maintain one unit (10,000 SF) of Asphalt and Concrete Paving is estimated to be 36 hours as shown in the above table. Task hour tables have been created for each landscape type and are summarized in the following section. Detailed task hour tables for each landscape type are provided in Appendix B along with a guide that outlines the methodology used to determine the task hour standards.

3.2.1 Paved Areas

Maintenance of all paved areas will include frequent litter removal (5x/week) and regular weekly cleaning with backpack blowers or brooms to provide a safe, clean, well-managed landscape . Any graffiti or vandalism is to be removed within 48 hours. All paved areas shall be cleaned with a power washer, firm bristle brush, or regenerative air sweeper (in the case of permeable asphalt on the Promenade). Paving inspections should be conducted during regularly scheduled cleanings/litter removals and any issues such as cracking, spalling, uneven settling, loose pavers/boards, or weed growth should be noted and addressed with repairs as needed. Additionally, snow and ice removal/management will be required during the winter season as needed in order to maintain safe pedestrian access.

It is estimated that the time required annually, on average, to maintain:

- 10,000 SF of Asphalt & Concrete Paving (P1) will be 36 hours
- 1,000 SF of Mortar Set Inlay Paving (P2) will be 11.5 hours
- 1,000 SF of Dry-Laid Paving (P3) will be 14 hours
- 1,000 SF of Boardwalk (P4) will be 6 hours

3.2.2 Planting

All plantings along the Waterfront must be maintained at a high standard of care. Tasks such as fertilizing, pruning/trimming and irrigating should be done on a regular schedule that adjusts for changes in weather, seasonality, and growing season. Groundcovers, trees/shrubs and perennial plantings should be kept free of disease, pests and dead or dying branches. All dead or dying plants should be removed and replaced promptly. All groundcover beds, bioretention cells, and perennial beds must be mulched and kept free of weeds and litter.

Bioretention cell plantings must be frequently inspected to ensure proper drainage, soil quality, and sediment levels. Debris and silt must be cleared from the presettling tank monthly. Mulch must be removed/replaced annually to maintain proper drainage and sediment capture. Plantings must be well-maintained and demonstrate vigorous plant growth in order to function optimally.

Vine plantings shall be trimmed or cut back as needed at least twice annually to maintain a manageable size. This is particularly important in the case of the chocolate vine, a vigorously growing plant.

The habitat beach area is planted with a blend of trees, shrubs, and groundcovers which will require less frequent care than perennial or groundcover beds. Monthly plant care should be performed including trimming, weeding and plant replacement. The beach is the only planting type that will not be irrigated and therefore may require some hand watering during extended periods without rain. Several objects used as soil stabilization and seating are located within the beach area and should be inspected and cleaned as needed. Wind blown litter and floating debris along the water’s edge should be removed weekly. Beach sand and rip-rap edge will need to be inspected and raked regularly and replenished as needed.

Lawn areas will require frequent, dedicated care in order to maintain a healthy stand of turf during the active growing and use season. A regular mowing schedule should be maintained with seasonal applications of fertilizer and pre-emergent weed preventer. In the case of heavy use, some lawn areas may need to be temporarily closed for overseeding, top dressing or major renovation.

It is estimated that the time required annually, on average, to maintain:

- 20 Trees (PL1) will be 12 hours
- 20 Shrubs (PL2) will be 11 hours
- 1,000 SF of Perennial Planting Areas (PL 3) will be 20 hours
- 1,000 SF Groundcover Planting Areas (PL4) will be 12 hours
- 100 LF of Vine Planting along Screen (PL5) will be 10 hours
- 25,000 SF of Habitat Beach (PL6) will be 72.5 hours
- One bioretention cell (PL7) will be 11 hours
- 1,000 SF of Lawn (PL8) will be 19 hours

3.2.3 Furnishing & Site Amenities

Numerous furnishings and site amenities have been specified for the Waterfront which will need to be rigorously maintained to keep up with use and abuse common to such a popular destination. All amenities should be kept clean, safe and functional. Regular cleaning and inspection should be conducted and any damage or graffiti should be reported and scheduled for repair or removal immediately.

As a precaution against theft, all moveable furnishing must be collected and secured each evening at a predetermined time and set up each morning before visitors arrive.

Trash and recycling receptacles must be emptied on a regular schedule depending on usage which can vary depending upon location, season, weather and event schedules. A peak, shoulder, and off-season schedule has been specified for this project which accounts for periods of high or low visitation.

Significant quantities of painted steel planter walls will be used throughout the project. These surfaces will require repainting and repair over time as damage occurs from vandalism, graffiti, accidents and general use. Repairs and repainting will need to be addressed quickly to prevent further enlarging of damaged or peeling areas. A four part Tnemec coating system is currently specified for all metal surfaces and may require several layer applications based upon the extent and depth of damage.

It is estimated that the time required annually, on average, to maintain:

- Ten Furnishing Items (F1) will be 15 hours
- Ten Moveable Furnishing Items (F2) will be 46 hours
- One Trash/Recycling Station (F3) will be 27 hours
- 50 LF of Railing, Fencing & Screens (F4) will be 6 hours
- 100 LF of Planter Walls (F5) will be 8 hours
- 10 Signage Elements (F6) will be 36 hours
- One Art Piece (F7) will be 13 hours

3.2.4 Play Areas

Play areas will receive a great deal of abuse from active children and must be frequently inspected and maintained at a high level of care to provide a safe, clean play environment. All play equipment must kept clean, functional and in good repair at all times. Safety surfacing must be kept free of litter and cleaned of any spills or accidents that may occur throughout the day. Additionally, safety surfacing may wear out prematurely in areas of high use and will need to be repaired or replaced as needed. Sand play areas will require frequent surface leveling, litter removal and cleaning due to frequent use. An annual replacement of all sand within play areas is recommended during the off-season.

It is estimated that the time required annually, on average, to maintain:

- 100 SF of Sand Play Area (PA1) will be 33 hours
- 100 SF of Rubber Surface Play Area (PA2) will be 31 hours

3.2.5 Infrastructure

Maintaining infrastructure is potentially the most important task within the Waterfront. Components such as lighting, drainage and irrigation must be well maintained to keep visitors and the landscape safe and healthy. All systems should be monitored on a regular schedule to ensure proper function, and any issues or failures must be identified and addressed quickly.

Area and trench drains can easily clog with wind blown litter or fallen leaves, and all drainage infrastructure along pedestrian paved areas and planting beds must be monitored and kept free of any surface or sub-grade blockages at all times. Any repairs must be made immediately.

The water feature at Waterfront Park will consist of multiple fountain jets which can be set to produce a mist or spray, as well as a “water sheet” that will flow to a collection point at the west end of the plaza. Water feature maintenance require frequent cleaning, adjustment, and repair. All surfaces should be cleaned and scrubbed regularly to prevent any biological growth build-up. Daily inspections must be conducted during the operating season to check water quality and adjust chemical levels and filtration components. Strainers and grates must be cleaned weekly and filters must be backwashed. Any issues that prevent proper function must be evaluated immediately and repaired or temporarily closed until a necessary part is delivered. Winterization and spring start up will be required and should be conducted in line with the seasonal changes.

Irrigation is vital to maintaining the extensive plantings throughout the Waterfront. Any failures may result in the loss of plant material. Regular inspections should be performed to ensure adequate coverage and function of all above ground sprinklers/rotors and any underground bubble or drip irrigation through visual checks. Pop up rotors fail regularly and should be quickly replaced to avoid the need for hand watering which can very time consuming.

Catch basins and Storm Filter catch basins should be regularly monitored to ensure debris and silt build-up is not excessive and have not clogged any outfall drains. In the case of traditional catch basins, inspection should occur on a bimonthly schedule or after a series of heavy rain events. Storm Filter catch basins will require more care than a traditional catch basin as the filters can clog if siltation accumulates on the tank bottom or the outer filter surfaces. Storm Filter basins should be inspected monthly and cleared once every three months or after heavy rain events. Filter cartridges should be checked for proper function and may need to be changed yearly depending on frequency of storm events and maintenance standards of road surface cleaning.

Lighting elements will need to be kept clean and functional with repairs and “bulbs” replaced promptly as needed.

It is estimated that the time required annually, on average, to maintain:

- 1,000 SF of Irrigated Landscape (I1) will be 10 hours
- The Water Feature (I2) will be 431 hours
- 10,000 SF of Drainage Area (I 3) will be 10 hours
- One Storm Filter Catch Basin (I4) will be 4 hours
- One Catch Basin (I5) will be 1.5 hours
- 10 Pole Light Luminaires (I6) will be 5 hours
- 10 Pedestrian Lighting Fixtures (I7) will be 3 hours

3.2.6 Structures/Building Spaces

Structure and building maintenance will be a major component of Waterfront maintenance as these components provide important visitor amenities and services. All structures and buildings must be kept in good working order and appearance to effectively serve Waterfront users.

All freestanding structures including the Promenade kiosks and pedestrian overpass at Lower Union should be regularly cleaned and inspected for any damage or structural issues. In the case of the kiosks, all glass panels should be thoroughly cleaned bi-monthly.

All elevators must be kept in good working order, clean, and free of graffiti/vandalism. A weekly schedule of interior and glass cleaning should be maintained and monthly service of the mechanical elevator components must be performed. Regular inspections by a certified elevator inspector should be done per code or manufacturer’s recommendations. Any mechanical failures that may occur should be addressed immediately.

Restrooms must be regularly cleaned and well stocked with toiletries at all times. Visitation and restroom usage are tied to seasons and a recommended restroom cleaning schedule has been developed for the Waterfront which assumes twice daily cleanings during the peak season and once daily cleanings during shoulder and off seasons. It should be noted that these recommendations are subject to change if and when actual findings indicate a change in restroom facility maintenance scheduling needs. The primary restroom facility at the Overlook Walk will be staffed full-time with an attendant throughout the year (12 hours/day in summer and 8 hours/day in winter) and all single stall restroom facilities along Alaskan Way and the Promenade will be regularly checked and cleaned throughout the day.

Maintenance of Buildings B & C at the Overlook Walk is included in the scope of this maintenance report. Maintenance will include all exterior cleaning/maintenance such as roof repair, exterior walls, and gutters. Additionally, all utility components such as electrical, plumbing, and HVAC are included within the maintenance scope for the two buildings. All maintenance and repair work should be completed as needed.

It is estimated that the time required annually, on average, to maintain:

- One Kiosk (S1) will be 16 hours
- One Concrete Structure (S2) will be 9 hours
- 2,500 SF of Maintenance Area (S3) will be 32 hours
- One Single Toilet (S4) will be 205 hours
- Overlook Walk Restrooms (Attended) 3,778 hours
- One Elevator (S5) will be 169 hours
- 5,000 SF of Interior Building Space (S6) will be 49 hours

3.2.7 Landscape Type Standards Summary

The chart below provides a summary of all landscape types and their associated task hour standards.

Landscape Type Hours/Unit Summary	Unit	Hrs/Unit
Paved Areas		
P1 - Asphalt & Concrete Paving	10,000 SF (XSF)	36
P2 - Mortar Set Inlay Paving	1,000 SF (MSF)	12
P3 - Dry-Laid Paving	1,000 SF (MSF)	14
P4 - Boardwalk	1,000 SF (MSF)	6
Planting		
PL1 - Trees	20 Trees	12
PL2 - Shrubs	20 Shrubs	11
PL3 - Perennial Planting Areas	1,000 SF (MSF)	20
PL4 - Groundcover Planting Areas	1,000 SF (MSF)	12
PL5 - Vine Planting along Screen	100 LF (CLF)	10
PL6 - Habitat Beach	Each (EA)	73
PL7 - Bioretention Cells	Each (EA)	11.2
PL8 - Lawn Areas	1,000 SF (MSF)	19
Furnishing & Site Amenities		
F1 - Furnishing	10 Items	15
F2 - Moveable Furnishing	10 Items	46
F3 - Trash & Recycling	Each (EA)	27
F4 - Railing, Fencing & Screens	50 LF	6
F5 - Planter Walls	100 LF (CLF)	8
F6 - Signage and Wayfinding	10 Items	36
F7 - Artwork & Sculpture	Each (EA)	13
Play Areas		
PA1 - Sand Play Area	100 SF (CSF)	33
PA2 - Rubber Surface Play Area	100 SF (CSF)	31
Infrastructure		
I1 - Irrigation	1,000 SF (MSF)	10
I2 - Water Feature	Each (EA)	431
I3 - Site Drainage	10,000 SF (XSF)	10
I4 - Storm Filter Catch basins	Each (EA)	4
I5 - Catch basins	Each (EA)	1.5
I6 - Pole Lighting	10 Items	5
I7 - Pedestrian Lighting	10 Items	3
Structures/Building Spaces		
S1 - Kiosks	Each (EA)	16
S2 - Concrete Structures	Each (EA)	9
S3 - Maintenance Facilities	Each (EA)	32
S4 - Restrooms	One Toilet	205
S5 - Restrooms (Attended)	Each (EA) Entire RR	3,778
S6 - Elevators	Each (EA)	169
S7 - Building Maintenance	Each (EA)	49

Figure 3.1 Landscape type task hour standards summary

3.3 Waterfront Project Master Task Hour Summary

An estimated total of 26,563 hours are needed for annual maintenance of the completed Waterfront project areas.

Figure 3.2 illustrates the total hours required to maintain each of the ten (10) project areas included in the scope of this Operations & Maintenance Report.

Waterfront Seattle	Unit	Total	Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63
Paved Areas	Hours	3,668	1,248	565	295	58	118	118	875	14	8	368
Planting	Hours	5,116	1,842	1,127	1,427	25	413	127	121	34	0	0
Furnishing & Site Amenities	Hours	7,150	2,315	853	1,365	97	1,442	290	0	74	59	655
Play Areas	Hours	837	789	0	0	0	48	0	0	0	0	0
Infrastructure	Hours	3,391	1,090	501	632	35	328	558	146	6	3	94
Structures/Building Spaces	Hours	6,401	269	1,228	0	194	4,465	0	0	0	245	0
TOTAL HOURS		26,563	7,552	4,273	3,719	410	6,813	1,093	1,142	128	316	1,118

Figure 3.2 Summary of the total hours required to maintain the Waterfront project area.

SECTION 4.0

MAINTENANCE EQUIPMENT AND MATERIALS



4.1 Maintenance Equipment

Although agency responsibilities for delivery of maintenance services have not been defined at this time, the importance of the correct equipment for performing maintenance tasks cannot be overstated. Depending on the selected operating model, some or all of the Waterfront project may be maintained with in-house staff which would require equipment and materials. Utility vehicles, accessibility equipment, hand tools, bulk materials, and replacement parts will be needed to facilitate effective maintenance. Identifying useful new equipment, ensuring that the optimal equipment mix is maintained, and developing an equipment replacement schedule are crucial elements of successful maintenance.

Small electric or gas-powered utility vehicles should be considered for operational effectiveness throughout the Waterfront. Small vehicles are more appropriate for the Waterfront rather than full-size vehicles for reasons of maneuverability, economy, and ease of maintenance; and they are more user-friendly.



Small utility carts with dump bed or small trailer.

Work bicycles could also be considered as maintenance vehicles. Bicycles with baskets, and even tricycles with dump beds and storage boxes can be used to transport tools and bulk materials. Staff enjoy riding them and visitors enjoy seeing an inventive, sustainable approach to maintenance. Full-size vehicles, such as trucks, should be used only to the extent that they fill needs that cannot be met by smaller, more economical and user-friendly vehicles.



Work bicycles and tricycles.

Recommended Maintenance Equipment List

As mentioned above, agency responsibilities or delivery of maintenance services have not been defined at this time, however, a comprehensive list of tools, equipment & vehicles has been provided below to provide an understanding of the equipment necessary to effectively maintain and operate the Waterfront. Indoor and outdoor space requirements have also been provided to inform facility needs in section 5 of this report.

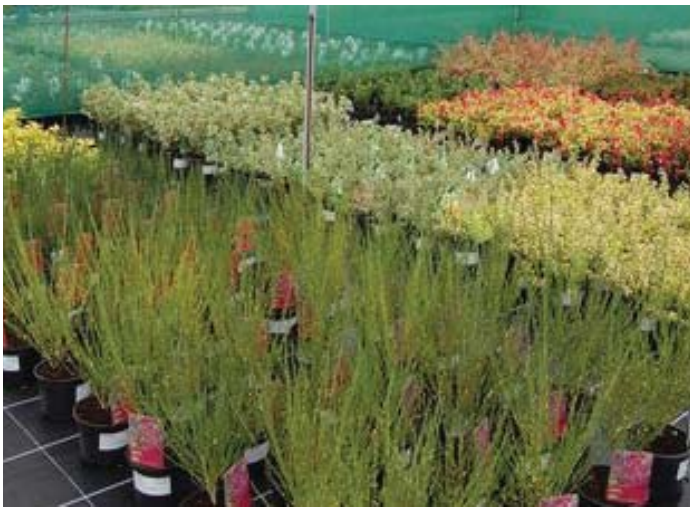
Tools, Equipment & Vehicles	Use	Quantity
Ryan Lawnaire V Aerator	Lawn aerating (walk behind, 26.5" width)	1
Toro 22" Walk behind Mower	Lawn mowing	1
Stihl string trimmer FS 110 R	Lawn edge trimming	2
Stihl backpack blower	Leaf/Grass blowing from paving	2
Stihl backpack sprayer SG 20	Fertilizer/herbicide application	2
Stihl Hedge trimmer HS 81 R	Pruning	2
Walk behind broadcast spreader	Fertilizer application	2
Wood chipper (small scale)	Landscape debris removal	1
Telescoping tree pruner with saw (14')	Tree pruning	2
Stihl Pole Saw Pruner HT 101	Tree pruning	1
Stihl chainsaw	Tree pruning	2
Assorted Landscape Hand Tools	Shovels, rakes, pruners, etc.	1
Assorted Hardscape Tools (Power and hand)	Trowels, chippers, mixers, etc.	1
Bobcat (with fork, bucket, snow sweeper attachments)	Material transport, cleaning, etc.	1
Work truck with boom (42' height)	Tree pruning/lighting/glass cleaning	1
Special lumen board replacement tools	Lumen replacement/repair/cleaning	2
Painting Supplies	Sprayers, tarps, rollers, etc.	1
Power washer	Paving/exterior surface cleaning	1
Cleaning/janitorial supplies	Interior/exterior cleaning	1
Mid-size Pick-up Truck	Material pick-up/transport	2
Medium duty equip. trailer (20' 12,000 LB)	Transport large equipment/materials	1
Medium Duty dump bed trailer	Transport bulk materials	1
Plumbing & Electrical Tools/equipment	Lighting, irrigation, water feature, etc.	1
Carpentry Tools	Furnishing and boardwalk decking repair	1
Misc. tools/equipment	General repairs	1
Work Tricycle	Transport/material transport	3
Hose cart (200' capacity)	Irrigation/spot watering/washing	2
Toro Workman HDX-4WD Utility Vehicle (w dump bed)	Transport/material transport	3

Figure 4.1 Recommended tool, equipment and vehicle list.

4.2 Maintenance Materials

As with any public space, periodic replenishment of landscape materials or replacement of damaged site features will be necessary. Having a ready supply of materials on hand will ensure a safe, usable space by quickly repairing or replacing site features. Materials and replacement parts can often take significant time to procure, especially if not locally available.

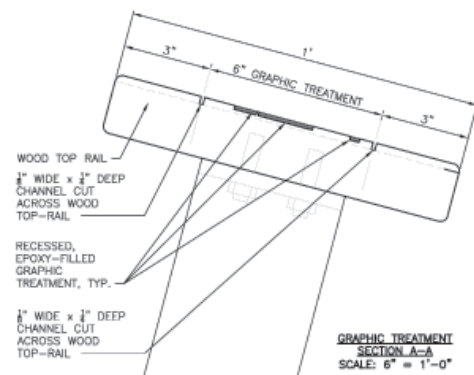
Many materials will need to be regularly replaced or replenished due to normal wear and tear. Items such as sand and mulch will need to be occasionally topped off or entirely replaced over time. With even the best horticultural care and proper plant selection, plant material will die and require replacement. These materials should be either made available at a nearby location for immediate use or made quickly accessible through a trusted provider.



Attic Stock

Attic Stock items should be identified and specified within contract documents in order to have adequate replacement supplies to account for normal wear and tear as well as vandalism of site features. These items would include special or custom design features that would be difficult or costly to order in small quantities, such as:

- Custom railing components
- Custom site furnishing wood slats and boards
- Lighting components
- Custom play feature components
- Custom furnishing components such as trash cans
- Paver materials
- Moveable seating
- Custom signage components



SECTION 5.0

MAINTENANCE & OPERATIONS FACILITIES



5.1 Facilities Overview

Facilities will be necessary to support Waterfront maintenance and operations (O+M) including daily cleaning and maintenance, repairs, horticultural work, programming support, as well as security.

Due to the linearity of the Waterfront, different kinds and sizes of facilities should be considered for facility locations to efficiently support daily O+M activities. This can be accomplished through careful siting of facilities along the Waterfront to reduce travel distances to pick up/drop off tools/supplies, trash/recycling, and materials. Ideally, a main facility should be centrally located with a number of secondary and tertiary facilities at other key locations that support special uses/programs and reduce time spent transporting materials and supplies back and forth from the main maintenance facility.

Both indoor and outdoor facilities will be required to accommodate staff, equipment, vehicles, materials, and daily stored items like moveable seating. Some areas used primarily for storage of bulk materials and vehicles can be simple fenced yards. Infrequently used equipment and materials can even be stored at an off-site location if on-site space limitations cannot support all facilities.

Whether maintenance and operations is performed by in-house staff or contracted services, some facility accommodations will be necessary to support daily delivery of services. Ultimately, facility needs will be determined by how much work is done in-house (staff, equipment, tools, etc.) and how much is done with contracted services, who typically supply their equipment as needed.



Staff Bathrooms



Temporary Storage/Work Space



Staff Break Room



Equipment Storage



Staff Lockers



Fueling Station

5.2 Potential Facility Locations

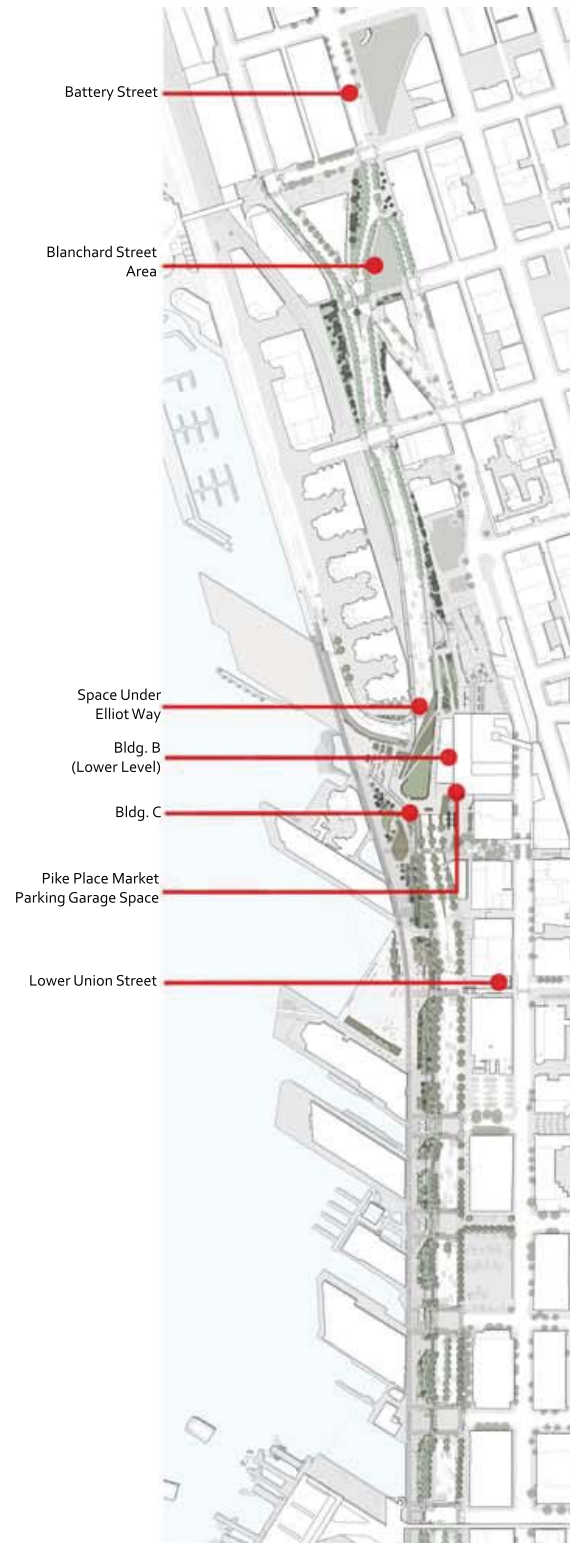
5.2.1 Potential On-Site Facility Locations

A number of locations have been identified along the Waterfront, both on and off-site that could potentially accommodate O+M needs. Potential on-site locations include:

- Building B (Lower Level)
- Building C – Space below south stair of aquarium (Potential Main Facility)
- Space under Elliott Way south of Waterfront Landing
- Pike Place Market Parking Garage Space
- Blanchard Street Area (temporary containers until developed)
- Battery Street
- Lower Union Street (temporary containers)

Buildings B and/or C located at the Overlook Walk have the potential to support the primary indoor facility with an allocation of approximately 2,500 SF for operations and Maintenance. Many of the additional potential facility locations could support small storage or mobilization spaces.

The design, layout and availability of all buildings/locations are currently in development and further design and discussion with the design team and adjacent property owners is required to further define the potential of these spaces.



5.2.2 Potential Off-Site Facility Locations

Additionally, two off-site Seattle Parks and Recreation (SPR) facilities have been identified as potential O+M support locations. The two locations are relatively close to the Waterfront and could potentially provide some available space to support additional maintenance activities or storage. Currently, available space is very limited at these locations and further discussion is required to determine if Waterfront maintenance crews (SPR or other) could utilize the space.

Location #1 – 4420 Westbridge Shops: This facility is a large indoor/outdoor facility with full service offices, conference rooms, large shops for carpentry, electrical and plumbing, paint booths, and equipment/machine repair. The facility also has an outdoor parking area to accommodate maintenance vehicles. This facility could serve a number of potential uses for the Waterfront, primarily as a support facility for shop repair work. Due to its location across the Duwamish River, travel times to this facility may limit viability as a daily support facility to mobilize staff.

Location #2 – W Central District Headquarters: The Central HQ Grounds includes crew quarters, office space, and a fenced in yard. This off-site location has potential to serve some or all outdoor bulk material and large equipment storage. Plans are currently being considered to increase yard capacity. Although approximately 3 miles away from the Waterfront center, access is fairly direct in comparison to the Westbridge facility.



5.2.3 Secondary and Tertiary Facilities

Smaller facilities could be included at strategic locations along the Waterfront to support efficient maintenance mobilization and programming support. The linearity and extent of the Waterfront requires a mobile, flexible service delivery solution. Smaller facilities could support in-house or contracted staff by acting as way points to pick up additional supplies, mobilize programs/events, or temporary trash/debris storage.

These facilities could be simple small structures or small fenced areas used mainly for temporary storage of materials and supplies. Secondary facilities are meant to reduce travel time and ease day-to-day operations. These facilities would need to be secured and enclosed, and be mainly used as storage for frequently used items, such as tools, supplies, small vehicles, and programming elements such as chairs, temporary fencing, bike rental storage, yoga mats, AV equipment, or moveable play elements.

Equipment and furnishing such as moveable seating may need to be stored on-site to support daily or seasonal programs such as vending, exercise classes, small music events, or festivals. These storage facilities should be centrally located near the program areas and could be simple storage containers that blend into the landscape. In addition to equipment and supply storage, secondary facilities could also serve as temporary drop off areas for trash/recycling or landscape debris while waiting for daily bulk disposal or transport to off-site composting facilities.



Temporary storage container



Semi-permanent Storage cont.



Vendor kiosk and fenced corral



Secondary facility



Gang box small storage



Vendor on-site storage

5.3 Facility Space Needs

5.3.1 Delivery of Services

Depending on the ultimate strategy for delivery of O+M, facilities needs will have to be adjusted accordingly to accommodate staff, equipment, and materials. In order to provide an accurate assumption of required facility space three potential scenarios have been considered:

- 1) In-house maintenance (dedicated on-site staff with minimal contracted trades work)
- 2) Contracted Services (primarily contracted services with a small in-house support staff)
- 3) 50/50 Blend of contracted trades and In-house maintenance

5.3.2 Basis of Estimate

The In-house maintenance scenario is used as the baseline to determine potential facility square footage needs for the Waterfront which is based upon estimated staffing and equipment needs. Facility needs estimates for the Contracted Services and 50/50 Blend are then adjusted accordingly from the baseline estimate.

In-house staff facility needs have been allocated including bathrooms, lockers, changing rooms and break/meeting rooms. Staffing space needs have been determined by converting total estimated task hours into a full time equivalent (FTE) staffing number. An average of 1,860 hours is used for each FTE. Typically full-time staff work 2,080 hours per year, but actual productive time spent working averages 1,860 hours when factoring in time lost for paid holidays, breaks, vacation, and sick time. In-house staffing facility needs are estimated to accommodate between 10-15 full and part time staff.

We have also identified the space necessary to store the various tools, and equipment required to maintain the Waterfront. As with staffing, alternate scenario assumptions are based on the In-house maintenance scenario and adjusted accordingly.

Space has also been allocated for bulk material storage, temporary trash/recycling storage, composting space, programming support storage, as well as security facility needs.

5.3.3 Equipment & Tool Storage Needs

The below equipment summary is provided to identify the necessary indoor and outdoor space to support Waterfront operations and maintenance. The summary assumes an in-house maintenance scenario in which the majority of work will be performed by dedicated park staff and the majority of tools and equipment will be stored in dedicated on or off-site facilities. On-site equipment storage needs may reduce based on the selected delivery of services model or extent of supplemental contracted services.

Tools, Equipment & Vehicles	Quantity	Space needs (SF)	Total SF
Ryan Lawnaire V Aerator	1	25	25
Toro 22" Walk behind Mower	1	20	20
Stihl string trimmer FS 110 R	2	5	10
Stihl backpack blower	2	10	20
Stihl backpack sprayer SG 20	2	10	20
Stihl Hedge trimmer HS 81 R	2	5	10
Walk behing broadcast spreader	2	20	40
Wood chipper (small scale)	1	50	50
Telescoping tree pruner with saw (14')	2	5	10
Stihl Pole Saw Pruner HT 101	1	5	5
Stihl chainsaw	2	5	10
Assorted Landscape Hand Tools	1	100	100
Assorted Hardscape Tools (Power and hand)	1	100	100
Bobcat (with attachments)	1	300	300
Work truck with boom (42' height)	1	500	500
Special lumen board replacement tools	2	50	100
Painting Supplies	1	50	50
Power washer	1	20	20
Cleaning/janitorial supplies	1	100	100
Mid-size Pick-up Truck	2	250	500
Medium duty equip. trailer (20' 12,000 LB)	1	300	300
Medium Duty dump bed trailer	1	200	200
Plumbing & Electrical Tools/equipment	1	100	100
Carpentry Tools	1	150	150
Misc. tools/equipment	1	250	250
Work Tricycle	3	25	75
Hose cart (200' capacity)	2	20	40
Toro Workman HDX-4WD Utility Vehicle	3	50	150
Equipment Storage Needs - Interior			1,455
Equipment Storage Needs - Exterior			1,800

5.3.4 Facility Space Needs

The below table provides estimated indoor and outdoor facility square footage needs to support Waterfront maintenance and operations. Three service delivery scenarios are provided to represent how facility needs may increase or decrease depending upon the level of supplemented contracted services.

Allocations for security support space as well as programming/event space have also been provided.

Facility Needs Summary	In-House Maintenance	Contracted Services Maintenance	50/50 Split	On-Site Priority
Maintenance Space (Indoor/Climate Controlled) (SF)				
Bathrooms/Lockers/Changing Rooms	350	50	200	High
Office Space (computer/print)	300	150	150	Medium
Break/Meeting Room	150	80	150	High
Flexible Shop/Repair Space	500	NA	300	Low
Secure Small Tool Storage	500	100	200	High
Material & Supplies Storage	650	250	450	High
Small Equip/Vehicle Storage	1,000	250	400	High
Vented Chemical/Fuel storage	75	NA	75	Medium
Mechanical Repair	400	NA	200	Low
Subtotal	3,925	880	2,125	
Unusable space (Access/Circulation - 10%)	393	88	213	
Total	4,318	968	2,338	
Maintenance Space (outdoor/yard) (SF)				
Flexible Yard Space	2,000	500	1,000	Low
Material Storage (mulch, soil, sand, etc.)	2,000	500	1,000	Low
Fuel Station	250	NA	250	Medium
Maintenance Vehicle/equipment Parking	1,800	NA	800	Medium
Composting and Landscape Debris	3,000	3,000	3,000	Low
Compactor or Trash/Recycling Storage	400	400	400	High
Subtotal	9,450	4,400	6,450	
Unusable space (Access/Circulation - 20%)	1,890	880	1,290	
Total	11,340	5,280	7,740	
Total Indoor/Outdoor Maintenance Space	15,658	6,248	10,078	

Security Support Space (SF)			
Security Staff Mobilization/Break Room (w/ lockers & bathroom)		150	High
Camera Monitoring Station		80	Low
Security Supervisor Office		100	Low
Total Security Facility Space		330	

Programming Support Space (SF) (Assumes a blend of in-house & vendor sponsored events)			
Storage Space 1		150	High
Storage Space 2		150	High
Storage Space 3		150	High
Total Programming Support Space		450	

5.3.5 Facility Needs Summary

Dedicated O+M facility space can often be difficult to secure in urban areas and the Waterfront is no exception. The 2,500 SF facility space located at the Overlook Walk in Building C has been reserved for O+M space, however, this location may not be sufficient to support all O+M needs. Additionally, an outdoor yard space will need to be allocated for vehicles & equipment, bulk materials, and temporary daily trash storage. Several potential options have been identified in this report that may be suitable to support some or all potential O+M facility needs. Leasing of a nearby downtown storage facility may be an option if the identified spaces are determined unsuitable for Waterfront O+M use.

A preferred operating model has not yet been defined for the Waterfront which makes it difficult to define exactly how much O+M space is necessary. Several potential operating scenarios are currently being explored which may include a blend of resources comprised of non-profit in-house staff, Seattle Parks and Recreation staff, and contracted services. Actual O+M facility locations and space requirements will need to be further refined once a preferred operating model had been finalized.

SECTION 6.o

SAFETY AND SECURITY



6.1 Overview of Waterfront Safety and Security

The new Waterfront Seattle project will span from Railroad Way along Alaskan Way/Elliott Way north to Battery Street. The project includes over eight acres of new and improved public open space, improved connections between center city neighborhoods and Elliott Bay, and nearly 1-1/2 miles of new street surfaces along Alaskan Way and Elliott Way. The majority of the project area, including much of the pedestrian promenade is located within the public right of way.

The Waterfront has been designed with safety and security as a guiding principle; however, design alone cannot ensure a safe environment. A multi-faceted safety and security strategy that consists of sufficient staffing, maintenance, programming, technology and coordination is critical in order to ensure the Waterfront will be a safe place for users, locals and tourists alike.

The security strategy envisioned for the Waterfront should be a multi-tiered approach that draws upon all available resources to ensure the Waterfront is a safe place. Security is a site-wide responsibility that requires cooperation from not only the police, uniformed Waterfront staff and additional safety personnel, but visitors as well. The presence of people is what will ultimately make the Waterfront safe. Activated spaces in which people are present year-round effectively promote the perception of safety in public spaces, and this in turn promotes more use. To ensure that the space is activated initially, the Waterfront must be well-maintained and programmed, and supported with a comprehensive security strategy that includes:

- Enforcement personnel - police, rangers, security staff
- Uniformed park staff - Waterfront O+M staff and ambassadors
- Safety and security infrastructure
- Robust programming of events and activities
- Clear enforceable rules and regulations

Many public spaces have struggled with crime and anti-social behavior simply because they take a reactive rather than a proactive approach. Behavioral and social issues can be difficult to manage proactively. Not only are there varying philosophical approaches to certain social issues, but existing enforcement rules and regulations can conflict with one another making clear enforcement difficult.

An effective governance structure has not been defined at the time of this report submission, including roles and responsibilities of the potential public and non-profit managing entities as well as the property designations and associated laws. Given that these issues are currently undecided, findings and recommendations on safety and security will need to be further refined as decisions are made.

With this in mind, this report outlines the various safety and security tools and offers initial recommendations to ensure that crime, vandalism and other antisocial behaviors are managed proactively, with the goal of a safe, democratic and inclusive environment that can be enjoyed by all.

6.2 Potential Resources

6.2.1 Staffing/Uniformed Presence

The following section outlines the potential “boots on the ground” resources that the Waterfront could utilize as part of a comprehensive security strategy. The presence of a uniformed staff is an important component of a safe and secure urban space. Without a dedicated staff presence, issues will not be quickly identified, rules and regulations cannot be enforced, and positive relationships cannot be built. The following resources are provided to show the range of options including:

- Seattle Police Department (SPD)
- Security Personnel
- Off-duty SPD Officers
- Operations & Maintenance Staff
- Outreach Personnel
- Rangers & Safety Teams
- Ambassadors

Seattle Police Department

Police assistance in urban public parks is often necessary for enforcement of rules and regulations. In many cases, security staff do not have the ability to enforce posted rules and regulations or other city laws and local police will need to be called upon to diffuse dangerous situations, issue citations, or in some cases, make arrests. SPD does maintain a presence along the Waterfront, although limited, and a special bike patrol unit does cover some downtown areas.



The key to an effective security plan is coordination among those responsible for security with SPD. Waterfront security management staff will need to maintain a close working relationship with the Seattle Police Department (SPD). Regular meetings should be conducted to identify enforcement issues before they become problematic, and direct lines of communication should be well-established to ensure prompt response times when incidents do occur. Proactive communication and coordination between Waterfront staff and SPD will be a key component in ensuring park security. SPD should be made aware of the Waterfront posted rules and regulations and have a clear understanding what is considered public right-of-way and public park space.

Security Personnel

Many public spaces have a dedicated, security presence to provide safety and security. A uniformed security presence can be provided as either an in-house or contracted service that has been trained to recognize and respond to enforcement and safety issues.

Several Seattle organizations utilize contracted security firms for baseline security as their base of operations or as supplemental security during special events. Olympic Sculpture Park uses an outside security firm for their baseline security as well as special event support. Both Pike Place Market and Seattle Center use contract security to supplement their in-house baseline security staff during special events. One advantage of in-house security is, like in-house maintenance staff, they get to know the rhythms of the site and are more likely to proactively deal with potential enforcement issues. However, numerous nationally recognized contracted security firms do provide security services for outdoor public spaces with local, dedicated personnel with low turnover rates.



An inherent issue associated with security staff is the limited authority in enforcing rules and regulations. Typically, security staff can only issue warnings to park users and cannot issue citations or forcibly remove individuals who are causing a nuisance or not abiding by posted rules and regulations. In such an event, local police are often called upon if a security officer cannot independently resolve an issue.

Off-Duty SPD Officers

Off-duty police officers are often used to supplement enforcement in public spaces. In the case of Seattle, many existing adjacent organizations including the Olympic Sculpture Park, Pike Place Market, and the Seattle Center utilize off-duty SPD officers during busy times, such as weekends, or as support during special events. Off-duty police officers can be a valuable component in a security strategy as they are highly trained personnel who have the authority to enforce city ordinances and issue citations. In the case of Olympic Sculpture Park, paid off-duty officers wear their standard issue uniforms which deters antisocial behavior and crime.



Operations & Maintenance Staff

Uniformed O+M staff can act as additional “eyes and ears” in public spaces. Their primary responsibility is maintenance of park areas, however they can also provide a layer of security simply by their presence and their capacity to see and be seen.

SPR employs a dedicated staff of maintenance and cleaning personnel who are responsible for all Parks and Recreation properties including all downtown parks and some areas along the Waterfront. Additionally, the Metropolitan Improvement District (MID) employs a “Clean Team” within their MID neighborhoods. The Clean Team is responsible for keeping streets and sidewalks clean and free of trash and graffiti.

All entities who will have some level of involvement in the Waterfront should be knowledgeable with regards to rules and regulations so that they may confidently inform non-compliant park users. In many cases, O+M staff receive training in conflict resolution and are equipped with portable radios for direct communication with appropriate security personnel.



Outreach Personnel

The MID employs a unique program of outreach and education services called the Outreach Team. The MID Outreach Team works to connect the homeless and mentally ill on the streets of Downtown Seattle with social services, housing, treatment, employment and other basic needs. For many homeless who live on the streets, there isn't a clear understanding of how to connect with services and basic needs to improve their lives. The MID Outreach Team serves as a link to assisting those homeless willing to use existing social services.



Rangers and Safety Teams

In addition to the resources mentioned above, SPR provides a Ranger program and the MID provides an MID Hospitality and Safety Team (Ambassadors) which focus on providing information and assisting downtown visitors. Rangers and the Safety Team are already present at Waterfront Park, Pier 62/63 and other areas along the Waterfront. Their primary role is to interact with visitors and provide assistance. Efforts to build on these existing programs should be explored and encompass the entire Waterfront area either through partnering with existing efforts and/or expanding current efforts with supplemental staff. Their roles could be quite similar to Waterfront Rangers and MID personnel, however their focus would be dedicated solely to the Waterfront. This type of presence can deter anti-social behavior, and can provide visitors with an added sense of safety.



Ambassadors

Ambassador programs are another opportunity to create a community based, uniformed presence along the Waterfront. In Seattle, ambassador programs typically use local volunteer resources to educate and interact with the public. These volunteers are commonly local youths, retirees, and engaged professionals looking to be an active part of their community and help make a difference. The Olympic Sculpture Park utilizes volunteer ambassadors to interact with and inform Park visitors of upcoming events and fun facts about the various sculptures. The Friends of Waterfront Seattle already employ a team of ambassadors that help with events and community outreach to build project awareness. Their role could easily transition into a more dedicated presence upon completion of the Waterfront.



6.2.2 Safety & Security Technology

Any public space safety strategy should consider the use of new technologies and innovative safety infrastructure such as closed circuit television systems (CCTV), emergency call boxes, and guard tour systems. These elements of the safety and security strategy can act to complement existing efforts although these are more reactive than proactive, and in some cases, increase the general feeling of safety within the environment if used properly and effectively.

CCTV Cameras

Security cameras are commonly used for monitoring of outdoor public spaces and can be a key component in a security strategy. However, there is little evidence that CCTV alone deters crime or antisocial behavior. There is also the concern that the presence of too many CCTV cameras can, in fact, give the impression that an area is unsafe - as “why else would there be so many cameras?”. The city of Seattle has had a history of resistance to the use of CCTV cameras in public parks. The use of cameras in the Waterfront would need to be carefully planned and implemented. If properly integrated, CCTV can be a valuable addition to any safety and security strategy.

CCTV cameras can be either actively monitored to address issues as they occur or used as a tool to address and identify issues after they occur. With either approach, cameras can provide an additional level of security and a valuable tool to identify, deter and resolve safety and security issues.



Perimeter Alarms

Laser perimeter alarms are an effective method of alerting security personnel of activity in an area that may be closed for public use. This system is typically used in tandem with CCTV cameras to identify who or what has set off the perimeter alarm. The Olympic Sculpture Park (OSP) utilizes a laser alarm on the perimeter of their campus as a tool to identify activity during evening hours. The OSP has a permeable perimeter with no fencing, however, security personnel do enforce a no trespassing policy during evening hours. This technology enables security staff to quickly identify and evaluate whether any action is necessary.

The Waterfront is also a permeable public space, however, the Promenade and Alaskan Way are heavily traveled commuter corridors which will likely be used at all hours. Additionally, multiple pier properties along the Waterfront can only be accessed by traversing the Promenade, which poses further issues in maintaining a secure perimeter. Perimeter alarms could be employed during evening hours at specific locations such as the Overlook Walk, Pier 62/63, or Waterfront Park that are not part of the promenade.



Emergency Call boxes

Emergency Call Boxes, or Emergency Pole Towers, can be located in designated areas and used to quickly call the police to report enforcement issues or seek help. Available in various sizes and designs, with a push of a button, an officer can have direct contact with the victim, while pinpointing his/her location and flashing a bright light for warning. With all these in mind, a CCTV camera can also be installed for additional surveillance.

There are several types of Emergency Pole Towers that may be suitable for the Waterfront. Emergency Phone Towers are connected to landlines and powered by electrical wiring. With a push of a button, an operator/officer can be reached within seconds. Additional components such as cameras or lights can be included to provide more security and visibility. Because Emergency Phone Towers typically require a wire connection (wireless and solar technology can be integrated), planning for their locations should be done during the design phase and not after construction has occurred.

Recently, there has been considerable debate regarding the effectiveness of emergency call boxes in the age of cell phones; however, call boxes are frequently included in public space throughout the country. In New York, the High Line design team did include emergency call boxes and they are also used in Central Park, yet they are very rarely used. Park users often assume call boxes are for police use, and not for the public.



Guard Tour Systems

Electronic guard tour systems are an effective way to ensure supervision of mobile security patrols. Electronic guard tour systems use “touch memory” technology that enables security staff to easily record and report events and document the exact date and time of patrols. Each patrol is electronically recorded to verify that the security rounds were actually performed. This modern “watchman’s key” is very effective in ensuring security checks are carried out as scheduled.

Technology innovations now incorporate the use of a mobile device which can greatly increase staff effectiveness. Any enforcement issue can be sent to guards as a “pin-pointed” Geo-referenced location via mobile device. With a single press of a button, a panic notification can be sent to emergency personnel. If a security staff member is down or immobile, a motion sensor will also transmit an alert. An evaluation report can be made using the reported data from a guards device. Details of time, tours, incidents and progress of individual or multiple personnel reports can be assessed. This can be reviewed by the supervisors to determine certain incidents and improve protocol within a security system.



6.2.3 Waterfront Programming and Safety

Community Involvement

As the Waterfront transitions into a new public space, it will be important that the community feel a sense of ownership. Proactive efforts should be made by the managing entity of the Waterfront to ensure that residents from the adjacent communities and businesses feel welcome and that facilities and activities meet the diverse community needs. Providing relevant activities and opportunities to develop and sustain ties with visitors will be one of the most important and challenging management issues. Establishing partnering opportunities to strengthen the bond between the Waterfront and its community organizations should be a major priority. The Friends of Waterfront Seattle are already engaging the community through a “Hot Spot” event series that partners with local promoters and organizations at Waterfront Park during the construction phase of the Waterfront.



Volunteering also encourages the local community to get involved with the Waterfront, develop new skills, establish stewardship, and increase safety. This is an ideal opportunity to establish an ambassador program through the Waterfront managing entity. Creating a sense of ownership for nearby community members and organizations will be an important management goal and will ultimately help manage enforcement related issues.

Events & Activities

The importance of programming events and activities cannot be understated when considering a park security strategy. Simply stated, events and activities attract visitors, and active public spaces are typically low in crime. More eyes and ears at the Waterfront will simply help to deter crime, vandalism and other anti-social behavior. Also, events and activities encourage repeat visitation and provide visitors with constructive ways to use the Waterfront and build a sense of stewardship. As stated above, the Friends of Waterfront Seattle have already established a reduced scale event schedule at Waterfront Park which could potentially be expanded under the Friends management to include the entire Waterfront.



Safety & Emergency Response

Accidents can occur anywhere at any time. The Waterfront should provide on-site emergency protocols regarding First-Aid assistance and water safety. Any water edge public space should provide emergency equipment such as throw lines and flotation devices to facilitate water rescue. An on-site emergency response station and trained personnel should be available, especially during busy times or special events. All staff should receive basic CPR training, maintain required first aid certification, and know all safety protocols and emergency service contacts. Outside emergency medical personnel won't necessarily have sufficient knowledge of the Waterfront locations and areas, which may hinder the response time in an emergency situation and clear protocols should be defined for staff to guide emergency personnel to specific locations. The Waterfront is designed to allow small emergency vehicles with a medical flatbed to access all areas including the Promenade and Alaskan Way when transporting a patient to an emergency response location.



6.3 Waterfront Rules, Regulations & Enforcement

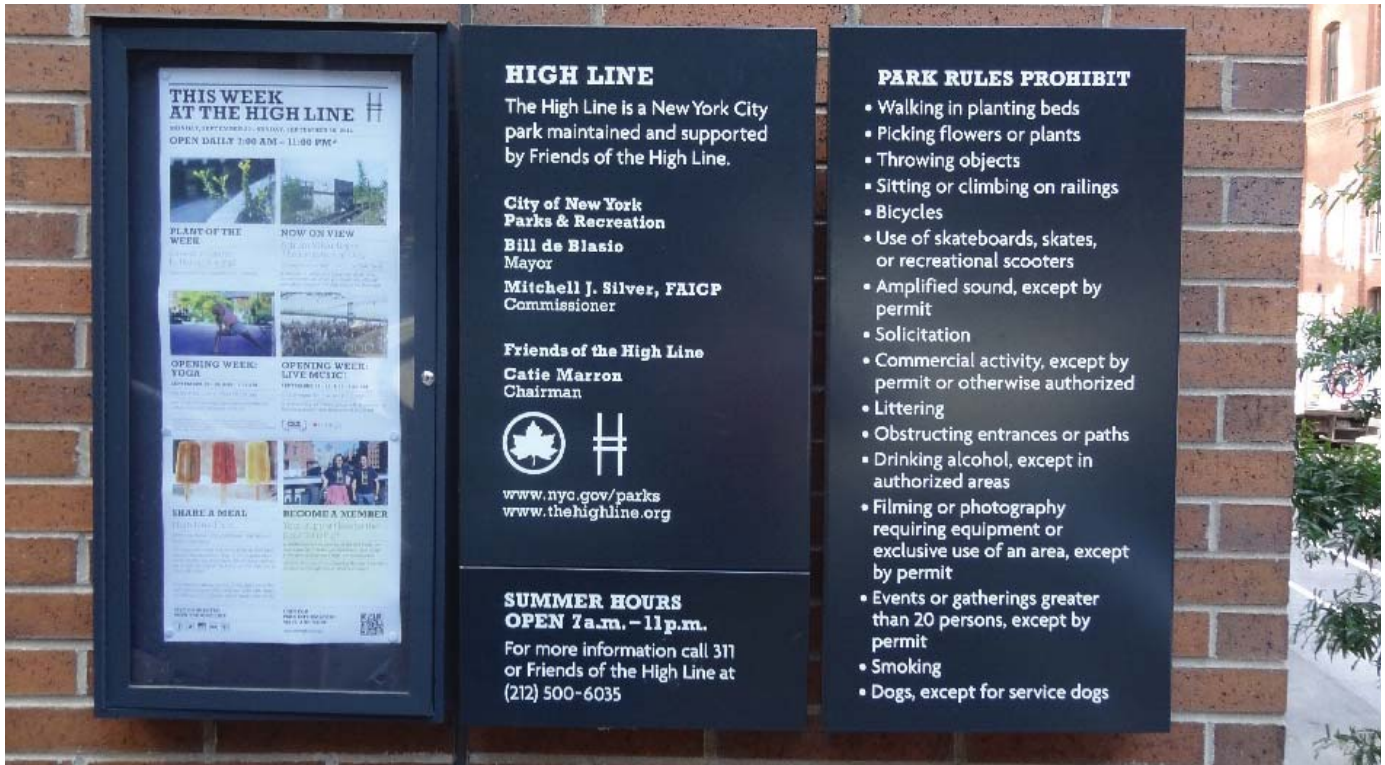
The Waterfront is a unique public space, set primarily within the public right of way. This presents several challenges of how to designate the space and implement clear rules and regulations. The Waterfront serves as a commuter corridor that cannot be “closed” like traditional park spaces which can make it much more difficult to manage and monitor. Most downtown parks have well defined boundaries with clear rules and regulations regarding drug and alcohol use, camping, and other antisocial behaviors. Parks also have established methods and resources for enforcement. A typical SPR approach of excluding persons exhibiting antisocial behavior is not currently possible in the right of way and will present some challenges for Waterfront management.



Right of Way in Downtown Seattle is regulated by an ordinance commonly known as the “Sit and Lie” ordinance which prohibits sitting or lying on sidewalks in the city’s business areas between the hours of 7:00 a.m. and 9:00 p.m.

The City is currently exploring legal methods to apply park-like rules and regulations to the Waterfront while not infringing on the constitutional rights of users of the right of way. Approaches under consideration include designating the Waterfront as a “Park Boulevard”, by transferring operating responsibility to Parks through a Memorandum of Agreement (MOA), or enacting special legislation to address the unique circumstance of a park operating in the public right of way.

Signage - Rules & Regulations



Signage located throughout the Waterfront could play a role in effectively communicating rules and regulations, whether those are existing laws or rules specific to the waterfront public spaces. Focused implementation of signs clearly stating the rules and regulations will effectively inform the public of what they can and cannot do. Most importantly, clearly posted rules and regulations allow security personnel to effectively enforce. A common issue in urban public space is effectively enforcing park rules, as local police may not be aware of specific enforcement rules and procedures used for enforcement.

Seattle Parks and Recreation - Rules, Regulations & Enforcement

An outline has been included in Appendix E of this report that illustrates specific rules and regulations of all Seattle Parks and Recreation properties and the specific enforcement protocols to be followed by SPD, Rangers, and any others designated by Parks. These rules, regulations & protocols provide a useful reference for Waterfront managing entities.

6.4 Waterfront Safety and Security Summary

6.4.1 Waterfront Specific Considerations

The Waterfront is a dynamic space that will need a comprehensive and coordinated security strategy that should include a full-range of tools including design, technology, programming and staffing. Nestled between the busy downtown core of dense storefronts and residential buildings and the active waterfront piers, the Waterfront will experience significant use even during off-peak times. The Waterfront acts as the “front yard” for the numerous piers along the waterfront and significant traffic will be moving along and through the Promenade to access the Seattle Ferry Terminal and the various shops and attractions located along the water’s edge. Stadium Plaza at the southern edge of the Waterfront will be inundated with swarms of fans before and after events at Century Link Field. Additionally, Alaskan and Elliott Way will receive significant vehicular traffic including commuter bus lines and transit stops.

In addition to the spatial challenges described above, the Waterfront is anticipated to serve a number of uses. The Waterfront is a vital commuter corridor accommodating pedestrians walking to work and ferry terminal users. Both tourists and locals frequently visit the waterfront to enjoy the views and the myriad attractions along the waterfront including the Seattle Aquarium, Pike Place Market, and numerous shops downtown.

The newly constructed space will be a great attraction with numerous green spaces, beach areas, playgrounds, water play areas, and scenic views to be enjoyed by all. Additionally, the Waterfront will be activated with a robust schedule of programs and activities as well as occasional large festivals or events.

Weather is also a large factor in maintaining safety and security. Seattle experiences a rather long cold, rainy season which greatly effects outdoor public space usage. Changes in use and behavior patterns will need to be monitored and staffing efforts will need to fluctuate accordingly.

Several elevators are included within the project area which will need to be managed from a use standpoint. Questions of whether elevators will be permanently in use or closed during low-use evening hours will need to be defined. Additionally, some areas of the Waterfront will be difficult for emergency personnel to access such as the Overlook Walk. This elevated area is only accessible on foot by elevators, ramps or stairways.

Another concern from a staffing and jurisdictional perspective will be defining and enforcing Waterfront rules and regulations to limit “street disorder”. Antisocial behaviors such as drug use and transaction, alcohol use and public intoxication, camping, public urination, and aggressive panhandling will need to be continually monitored and addressed as needed. Maintaining a safe and secure Waterfront will require diligent efforts.

6.4.2 Initial Recommendations - Safety and Security Strategy

A park security and safety strategy is a complex mix of elements which must be implemented with the proper balance and be updated to deal with new security issues. Technology, good design, professional management, proper maintenance and robust programming must all be in place to ensure the park is safe and clean. Any security strategy must continually be evaluated and revised to account for new issues and problems or to respond to shifting community needs and concerns. While people will make the park safe, it is only with a proactive approach to security and park use that we can effectively manage the needs and concerns of our visitors.

Recommendations for the safety and security strategy at the Waterfront must begin with effective planning and oversight. A key consideration should be to form a security council which meets regularly to evaluate ongoing issues, changing dynamics and to coordinate response efforts. This will allow the Waterfront safety and security program to adjust to new enforcement issues. In the 1980's, New York City's Central Park formed a security council as a key component to coordinate activities of those involved in safety and security which was very effective in defining and implementing policies and procedures. A Waterfront security council could either be implemented through the SPR or the Waterfront managing entity. A security coordinator should also be appointed to ensure effective coordination and implementation of security council initiatives.

The right mix of staffing is key in ensuring safety and security. We recommend a blend of resources that can support daily use while easily adjusting to accommodate higher use times associated with seasons, weekends and special events. A core dedicated maintenance staff should be employed as the "eyes and ears" of the Waterfront, especially during peak times and weekends when visitation is highest.

A steady security presence must be on-site at all times which adjusts to accommodate the summer season. Security staffing for busy weekends, special events or festivals should be supplemented through additional resources; either off-duty police, on call-staff, or private security forces. Budgeting for supplemental security must be secured prior to the event season to ensure adequate coverage throughout the year. Developing and implementing an Ambassador program should also be a priority to proactively engage Waterfront users and develop positive relationships and a strong identity.

Additionally, installing and effectively implementing technology such as CCTV cameras, guard tour systems and emergency call boxes will enable staff to effectively maintain a safe and secure environment.

6.4.3 Safety and Security Methodology

The following page provides a detailed table of recommended safety and security resources for the completed Waterfront. In forming a recommended strategy, a number of assumptions and decisions were made. The below methodology outlines these assumptions to provide a rationale for the proposed recommendations.

Current safety & security assumptions include:

- Security staffing recommendations are based upon a high-quality level of safety and security, meaning that proactive security measures will be adequate to manage and maintain safe secure public spaces at all times.
- Baseline security staffing recommendations have been created using Seattle peer parks acreage/ staff ratios as well as Waterfront specific acreage/length and time calculations to ensure staff can adequately cover all areas of the Waterfront on a regular schedule.
- Three 8-hour security shifts are specified for the Waterfront (Day/Swing/Graveyard).
- At least two security officers will be on duty at all times.
- Two officer team shifts are allocated during all shifts with an additional two officer team on day and swing shifts during the 6 month peak season.
- Two full time Security supervisory officers will supplement (in addition to) baseline security staff at times when most needed (peak times, during events, cover shifts).
- Supplemental security for events is assumed to be provided by off-duty SPD and estimated to accommodate an additional 15-20 hours/week during the 6 month event/busy season.
- Ambassadors are assumed to be a paid two person team employed during the 6 month event/ busy season in 2- 6 hour shifts.
- Hourly rates used for all staffing positions are based upon 2014 Seattle city Employee Salary Union Rate Schedule data (positions and hourly rates) unless otherwise noted.
- All indirect cost rates have been provided by the City of Seattle.
- Off-duty police officer hourly rates have been provided by Pike Place Market Security Manager and confirmed by Seattle Art Museum Director of Security. Off-duty SPD rates are flat rate and do not include indirect costs.
- Costs are in 2015 dollars unless otherwise noted.

Security Staffing Table

	Day Shift Staff	Swing Shift Staff	Graveyard Shift Staff	Full Time Equiv. (FTE)	Notes
Year Round security	2	2	2	9.4	6 shifts/day at 8 hrs x 365 =17,520 Hrs
Seasonal Security (summer only)	2	2		3.1	4 shifts/day at 8 hrs x 182.5 =5,840 Hrs
Security Supervision	2 supervisors supplementing patrols, as needed			2	2 Supervisors @ 1,860 Hrs/Year

Note: conversion to FTE= 1860 hours/year - using 2,080 hours, subtracting two weeks vacation, 2 sick days & 7.5 hour work day

6.4.4 Initial Recommendations - Safety and Security Strategy

Waterfront Seattle - Safety and Security Strategy	
Management	
Security Council	An in-house council should be formed with members consisting of the Waterfront managing entity, SPD, Friends of the Waterfront, adjacent local businesses such as Pike Place Market, and any other organizations to be invited on a case by case basis. Council meetings should be held on a regular basis (quarterly) to evaluate ongoing issues and implement/adjust initiatives to address changing dynamics. Initial efforts could reduce based on level of need.
Security Coordinator	A part-time Security Coordinator "point person" set in place at the Waterfront to implement and coordinate security initiatives across all applicable organizations. The Coordinator would be a key part of the Security Council and act as link between management and staff, delegating new initiatives and evaluating outcomes. The coordinator would facilitate meetings, create agendas, disseminate information, and provide information and updates to key security staff.
Staffing	
Security Supervision	2 supervisory officers employed on a full time basis to oversee and support security officers and other uniformed staff. Supervisory officers would perform security staff scheduling, equipment and material purchases/repairs/rentals, coordination with partner security resources (Friends Ambassadors, MID teams, etc.), provide special event support, and perform foot patrols when needed.
Year Round Security	Year-round security team; 365 days/year: two staff team for three daily shifts (3-8 hours shifts). Security staff should patrol the property on a regular schedule either by foot, bike, or seqway.
Seasonal Security	Peak Season supplemental security; May-October: two daytime staff team (2-8 hour shifts) to provide support to year-round security team. Security staff should patrol the property on a regular schedule either by foot, bike, or seqway.
Supplemental Event Security (Off-Duty SPD)	Supplemental off-duty SPD staffing to support year-round and seasonal staff during events as needed. 3,000 Hours annually. All supplemental security should be clearly indicated as SPD officers (uniformed).
Ambassadors	A team of approximately 15-20 Ambassadors (Paid or volunteer) to provide visitor education and assistance: May-October - two daytime staff team (2-6 hour shifts/day/7 days per week).
Operations & Maintenance Staff	Dedicated maintenance staff tasked with cleaning, maintaining, and supporting Waterfront operations as additional "eyes and ears".
MID Team Members	MID Clean, Outreach, and Safety Teams working in areas that overlap and abut the Waterfront should coordinate with Waterfront Security and O&M staff to ensure adequate coverage and avoid overlap.
SPR Rangers	Rangers working within the Waterfront area to coordinate with Waterfront Security and MID staff to provide additional "eyes and ears".
Seattle Police Department (SPD)	Seattle Police Department officers to include the Waterfront as part of their regular patrols and provide enforcement of Waterfront rules and regulations. SPR should have direct lines of communication with security staff and have a clear understanding of Waterfront layout and rules & regulations.
Note: all staff should be uniformed, knowledgeable of the Waterfront rules and regulations, equipped with personal communication devices, and trained in emergency protocols and First-Aid.	
Security Infrastructure	
CCTV Cameras	For consideration: Focused use of low-profile CCTV cameras in high use areas of the Waterfront such as kiosks. Cameras should be monitored when possible, not just used to address issues after they occur.
Emergency Call Boxes	For consideration: use of emergency call boxes at regular intervals along the Waterfront Promenade.
Guard Tour System	For consideration: implementation of a guard tour system primarily for use in the evening hours. A strategy of placing a guard tour stop at 1/4 mile intervals should be sufficient.
Perimeter Alarms	For consideration: Perimeter alarms at non-commuter areas to monitor activities during evening hours.

6.4.5 Safety and Security Budget

Waterfront Seattle - Safety and Security Budget					Comments
Annual Security Expenses	Qty.	Salary	Indirect Cost %	Total Cost	
Security Coordinator	686	\$ 32.97	55%	\$35,057	Part-time coordinator
Security Supervision	4,160	\$ 31.10	55%	\$200,533	Field security supervision - 2 full-time working supervisory officers
Year Round Security	17,520	\$ 24.59	55%	\$667,766	two person teams for three daily shifts (3-8 hours shifts)
Seasonal Security	5,840	\$ 21.49	20%	\$150,602	May-October - two daytime staff team (2-8 hour shifts)
Supplemental Security (Off-Duty SPD)	3,000	\$ 68.00	N/A	\$204,000	As needed - event and peak time supplemental security
Ambassadors	4,392	\$ 17.65	20%	\$93,023	May-October - two daytime staff team (2-6 hour shifts)
Equipment and Uniforms				\$10,000	
Tech support (CCTV, alarms, Etc.)				\$10,000	
Security Vehicle Maintenance/Replacement				\$15,000	
Subtotal Security Expenses				\$1,385,980	
Initial Capital Security Expenses	Qty	Cost	Total Cost		
Security Vehicles					
Bike	3	\$ 500.00	\$1,500		
Segway	2	\$ 3,500.00	\$7,000		
Gem Vehicle	1	\$ 10,000.00	\$10,000		With flat bed for use as emergency response vehicle
Communications - Two-way Radios	14	\$ 100.00	\$1,400		
Supplies (Crowd barriers, signage, etc.)			\$5,000		
Subtotal Capital Security Expenses				\$24,900	
Initial Capital Construction Security Expenses	Qty	Cost	Total Cost		
CCTV Cameras*	15	\$ 1,000.00	\$15,000		outdoor low profile dome camera system with recording system and monitor
Emergency Call Boxes*	6	\$ 6,500.00	\$39,000		Pole call boxes with emergency button and light
Guard Tour system*	10	\$ 2,500.00	\$25,000		Guard Pen/RFID wall unit system
Subtotal Capital Construction Security Expenses				\$79,000	

* Security infrastructure associated with initial design considerations/costs. Expenses do not include utility hookup or installation costs.

SECTION 7.0

WATERFRONT SEATTLE BUDGET ANALYSIS



7.1 Maintenance & Personnel Budget Assumptions

The budget shown in Figure 7.1 is an annual order of magnitude maintenance estimate for the completed Waterfront program area as defined in Section 1 of this report. The budget includes all costs associated with personnel, equipment and materials. This maintenance report and budget is based on the standards and responsibilities outlined in Section 3.0 of this report.

In developing an estimated budget for the Waterfront, ETM has made a number of assumptions that are outlined below. Current assumptions include:

- Hourly rates used for all staffing positions are based upon 2014 Seattle Employee Salary Schedule data (positions and hourly rates).
- The division of labor between the three pay grades (W-1, W-2, W-3) are defined by skill level required to perform each task. Detailed tables are provided in Appendix B which indicate how tasks are assigned to each worker designation.
- Two (2) full-time working maintenance supervisors are included in the estimate in addition to the estimated total task hours. These staff are primarily responsible for oversight and will supplement the primary maintenance workforce. One supervisor is approximately allocated to oversee five (5) in-house staff.
- Employee indirect costs are estimated at 55% for all full time staff and 20% for all part-time staff. These indirect costs are a best estimate at the time of report submission and any rate changes will directly effect on annual staffing costs.
- At least two security officers will be on duty at all times. A minimum security team of two officers will be on-duty during all daytime hours with additional security staffing during the busy summer season and special events. (see Safety & Security section for detailed assumptions).
- Material and supply expenses are included as an in-house expense which includes all necessary materials associated with typical annual maintenance and repair.
- Equipment replacement costs assume the majority of vehicles and equipment will be provided in-house.
- Equipment rental costs assume that not all necessary equipment will be purchased for daily staff use due to the infrequent need for a particular piece of equipment (e.g. scissor lift).
- Equipment fuel and repair costs assume a certain percentage of in-house vehicles/equipment will require ongoing maintenance regular fueling.
- Plant replacement costs assume a certain percentage of annual loss due to weather, use and plant life cycles.
- Insurance costs are included as an estimate and can be adjusted or removed based on actual needs/agreements.
- A standard 5% contingency has been applied to the annual budget to account for variables associated with ongoing design changes, undefined O+M facility locations and developing operating model.
- Cost estimates are in 2015 dollars unless otherwise noted.

Please note that this report does not specify a preferred maintenance strategy, however, the above assumptions are used to form a maintenance framework in order to develop estimated budget costs.

7.2 Budget Analysis

7.2.1 Annual Operations & Maintenance Expenses

The below table provides estimated annual expenses associated with daily maintenance and operations which includes maintenance, operations and security staffing, material and equipment costs, as well as facility and insurance costs.

Seattle Waterfront - Estimated Annual Maintenance & Operations Budget					Comments
Annual Maintenance Personnel Costs		Hrs	\$/hr	Total Cost	
Working Supervisor		3,720	\$ 37.66	\$140,095	In addition to base task hours. Two FTE equivalent
Maintenance Personnel (Trades Rate; W-3)		2,381	\$ 35.91	\$85,493	Trades Labor (Lighting and infrastructure maintenance and repair, art cons.)
Maintenance Personnel (Skilled Labor Rate; W-2)		3,562	\$ 27.34	\$97,398	Skilled labor (furnishing repair, equipment operation, landscape work)
Maintenance Personnel (Semi-Skilled Rate; W-1)		20,618	\$ 19.96	\$411,535	Semi-skilled labor (Landscape work, cleaning and some maintenance)
Indirect Costs				\$403,987	Typical public sector indirect cost of 55%. Includes benefits, health insurance, pensions/retirement (if applicable), and taxes.
Subtotal Maintenance Personnel Costs				\$1,138,508	
Annual Operations & Maintenance Expenses					
Materials & supplies				\$125,000	Small tools, equipment (hoses, paint, etc.), bench slats, lighting, trash bags, sand, mulch, etc. (Allowance)
Building Maintenance/Repair Materials				\$75,000	Plumbing, HVAC, Roof, Exterior, Etc. (Allowance)
Equipment/Vehicle Replacement				\$65,000	Utility vehicles, power washers, trimmers, backpack blowers, small equipment etc. (Allowance)
Equipment rental				\$40,000	Rental of trucks, hi-boy, scissor lift, etc. (Allowance)
Equipment/Vehicle Fuel and Repair				\$45,000	Parts, repair and fuel (Allowance)
Plant Replacement				\$120,000	Perennial, tree and shrub replacement. Includes some contracted tree maintenance. (Allowance)
Utilities				\$195,000	Water/Electric for Irrigated landscapes, restrooms, water feature, buildings, and site lighting. (Allowance)
Insurance				\$170,000	Liability insurance for entire project area
Facility Lease				\$500,000	Annual fees associated with Lease of Buildings/building space
Subtotal O+M Expenses				\$1,335,000	
Annual Security Expenses		Qty.	Salary	Indirect Cost %	Total Cost
Security Coordinator	686	\$ 32.97	55%	\$35,057	Part-time coordinator
Security Supervision	4,160	\$ 31.10	55%	\$200,533	Field security supervision - 2 full-time working supervisory officers
Year Round Security	17,520	\$ 24.59	55%	\$667,766	two person teams for three daily shifts (3-8 hours shifts)
Seasonal Security	5,840	\$ 21.49	20%	\$150,602	May-October - two daytime staff team (2-8 hour shifts)
Supplemental Security (Off-Duty SPD)	3,000	\$ 68.00	N/A	\$204,000	As needed - event and peak time supplemental security
Ambassadors	4,392	\$ 17.65	20%	\$93,023	May-October - two daytime staff team (2-6 hour shifts)
Equipment and Uniforms				\$10,000	Uniforms, radios, flashlights, etc.
Tech support (CCTV, alarms, Etc.)				\$10,000	
Security Vehicle Maint./Rep.				\$15,000	
Subtotal Security Expenses				\$1,385,980	
Annual Maintenance & Operations Costs				\$3,859,489	
Annual Operations & Maintenance Contingency - 5%				\$192,974	
Total Annual Maintenance & Operations Costs				\$4,052,463	

Figure 7.1 Waterfront Seattle Estimated Annual Operations and Maintenance Budget.

7.2.2 Initial Capital Expenses

In addition to annually recurring O+M expenses, initial capital expenses will be required to support operations and maintenance. These initial costs are associated with furnishing equipment, vehicles, general supplies, bulk materials, technology/infrastructure, and attic stock items to support day-to-day operations. However, not all Waterfront O+M management needs and decisions have been defined at this current phase of development. Therefore, general recommendations and estimates of the initial investment have been provided in the following section.

Initial Capital Construction Security Expenses

An initial recommended security program for the Waterfront has been identified which includes recommendations for safety and security infrastructure. The below table outlines security infrastructure components that may need to be purchased or budgeted for during the design and construction phases.

Capital Construction Security Expenses		Qty	Cost	Total Cost	
CCTV Cameras*		15	\$ 1,000.00	\$15,000	outdoor low profile dome camera system with recording system and monitor
Emergency Call Boxes*		6	\$ 6,500.00	\$39,000	Pole call boxes with emergency button and light
Guard Tour system*		10	\$ 2,500.00	\$25,000	Guard Pen/RFID wall unit system
Subtotal Capital Construction Security Expenses				\$79,000	

* Security infrastructure associated with initial design considerations/costs. Expenses do not include utility hookup or installation costs.

Figure 7.2 Waterfront initial capital construction security expenses.

Initial Capital Security Expenses

Initial safety and security staffing support expenses will also be incurred. Whether security is provided by an outside contractor, or provided in-house; security vehicles and equipment will need to be purchased to support safety and security operations. The table below outlines initial security expenses.

Capital Security Expenses		Qty	Cost	Total Cost	
Security Vehicles					
Bike		3	\$ 500.00	\$1,500	
Segway		2	\$ 3,500.00	\$7,000	
Gem Vehicle		1	\$ 10,000.00	\$10,000	With flat bed for use as emergency response vehicle
Communications - Two-way Radios		14	\$ 100.00	\$1,400	
Supplies (Crowd barriers, signage, etc.)				\$5,000	
Subtotal Capital Security Expenses				\$24,900	

Figure 7.3 Waterfront initial capital security expenses.

Initial Capital Maintenance Expenses

Initial operations and maintenance expenses are largely dependent upon who is performing the work. A new non-profit entity with an in-house staff may need to buy all new equipment and vehicles before assuming an O+M role. Alternatively, new equipment may not be necessary if an existing organization such as SPR or a contracted O+M service assumes responsibility for maintaining some or all the Waterfront. It is difficult to precisely define capital needs without a clear understanding of the operating model for the Waterfront, therefore we have provided vehicle and equipment recommendations which assume all work will be performed in-house.

Equipment	Qty.	Cost/Unit	Total Cost
Ryan Lawnaire V Aerator (or equivalent)	1	\$2,599.00	\$2,599.00
Toro 22" Walk behind Mower	1	\$500.00	\$500.00
Stihl string trimmer FS 110 R (or equivalent)	2	\$369.95	\$739.90
Stihl backpack blower	2	\$499.95	\$999.90
Stihl backpack sprayer SG 20 (or equivalent)	2	\$119.95	\$239.90
Stihl Hedge trimmer HS 81 R (or equivalent)	2	\$449.99	\$899.98
Walk behind broadcast spreader	2	\$169.79	\$339.58
Wood chipper (small scale)	1	\$1,000.00	\$1,000.00
Telescoping tree pruner with saw (14')	2	\$106.69	\$213.38
Stihl Pole Saw Pruner HT 101	1	\$599.95	\$599.95
Stihl chainsaw	2	\$949.95	\$1,899.90
Assorted Landscape Hand Tools	1	\$1,000.00	\$1,000.00
Assorted Hardscape Tools (Power and hand)	1	\$2,000.00	\$2,000.00
Bobcat (with attachments)	1	\$60,000.00	\$60,000.00
Work truck with boom (42' height)	1	\$91,900.00	\$91,900.00
Special lumen board replacement tools	2	\$300.00	\$600.00
Painting Supplies	1	\$1,500.00	\$1,500.00
Power washer	1	\$599.00	\$599.00
Cleaning/janitorial supplies	1	\$1,500.00	\$1,500.00
Mid-size Pick-up Truck	2	\$40,000.00	\$80,000.00
Medium duty equip. trailer (20' 12,000 LB)	1	\$3,500.00	\$3,500.00
Medium Duty dump bed trailer	1	\$5,600.00	\$5,600.00
Plumbing & Electrical Tools/equipment	1	\$6,000.00	\$6,000.00
Carpentry Tools	1	\$4,000.00	\$4,000.00
Misc. tools/equipment	1	\$4,000.00	\$4,000.00
Work Tricycle	3	\$1,200.00	\$3,600.00
Hose cart (200' capacity)	2	\$149.99	\$299.98
Toro Workman HDX-4WD Utility Vehicle	3	\$25,250.00	\$75,750.00
Equipment Sub-Total			\$351,880.47
Sales Tax (Maximum State + Local Tax - 9.6%)			\$33,780.53
Equipment Grand Total			\$385,661.00

Figure 7.4 Waterfront capital maintenance expenses.

7.2.3 Ongoing Capital Replacement Costs

Capital replacement costs are those costs associated with replacement or repair of site features and amenities such as play equipment, paving and structures due to life-cycle replacement needs or damage. Average annual life-cycle costs for the Waterfront are estimated to be around 2% of total initial construction costs. Most of these costs should, initially, be minimal, as the Waterfront will be newly constructed or covered by warranty or guarantee provisions in construction contracts.

However, there is a chance that a particular replacement cost will not be covered by a guarantee period or warranty, so budgeting some funds for those repairs should be included in any annual operating budget. This capital replacement budget should increase over time as features begin to wear out and need repair or replacement. An annual capital replacement budget of approximately \$500,000 has been allocated for the first 5 years following initial construction. This annual cost will naturally increase during the 30 year capital replacement projection provided in the table below.

Annual Capital Replacement Budgets		
Annual Budget - Years 1-5	\$526,083	0.3% of total construction cost
Annual Budget - Years 6-10	\$1,315,208	0.75% of total construction cost
Annual Budget - Years 11-20	\$3,507,220	2% of total construction cost
Annual Budget - Years 21-30	\$7,014,440	4% of total construction cost
Estimated construction cost based on Waterfront Improvement Program Cost Estimates , 2015 Re-Baseline, Adjusted Engineer Estimate, provided by the Seattle Department of Transportation		
30 Year Total Capital Replacement Reserve Projection		\$114,423,053
Average Annual Capital Replacement Costs over 30 Years		\$3,814,101.75

Figure 7.5 Waterfront capital replacement costs.

7.2.4 Waterfront Seattle Budget Analysis Summary

Waterfront Seattle Budget Analysis Summary	
Annual Operations & Maintenance Expenses	\$4,052,463
Annual O+M Expenses + Average Annual Cap. Rep. Cost (Yrs. 1-5)	\$4,578,546
Annual O+M Expenses + Average Annual Cap. Rep. Cost (Yrs. 6-10)	\$5,367,670

Figure 7.6 Waterfront Seattle Budget Analysis Summary.

APPENDICES



APPENDIX A

PROJECT AREA QUANTITIES



Paved Areas													
		Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63	TOTAL	
Type	Description	Unit	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
P1	CIP Conc. Paving w aggregate (w & w/o grooving)	SF	137,802	121,593	65,849	9,200	32,635	32,569	24,500	2,061	0	32,104	458,313
P1	Bike Path Asphalt Paving (W/Wyfind. Graphx)	SF	36,934	0	9,169	0	0	0	0	0	0	0	46,103
P1 - Asphalt & Conc. Paving Total Quantities		SF	174,736	121,593	75,018	9,200	32,635	32,569	24,500	2,061	0	32,104	504,416
P1 - Asphalt & Conc. Paving Total Unit Quantities (10,000 SF)		XSF	17.5	12.2	7.5	0.9	3.3	3.3	2.5	0.2	0.0	3.2	50.4
P2	Stone Paver, Mortar set (W/Wyfind. Graphx)	SF	3,159	2,943	0	0	0	0	0	180	0	0	6,282
P2	Brick Paver, Mortar Set (W/Wyfind. Graphx)	SF	234	2,556	0	0	0	0	0	0	0	0	2,790
P2	Metal Paver, Mortar Set	SF	684	0	0	0	0	0	1,400	0	0	0	2,084
P2	Concrete Paver - Type 1A, Mortar Set	SF	0	1,512	2,061	290	0	0	17,500	0	0	0	21,363
P2	Concrete Paver - Type 1C, Mortar Set (W/Wyfind. Graphx)	SF	189	0	0	0	0	0	0	0	0	0	189
P2	LPS Panels (Light Penetrating Surface)	SF	44,968	0	0	0	0	0	0	0	0	4,505	49,473
P2 - Mortar Set Inlay Paving Total Quantities		SF	49,234	7,011	2,061	290	0	0	18,900	180	0	4,505	82,181
P2 - Mortar Set Inlay Paving Total Unit Quantities (1,000 SF)		MSF	49.2	7.0	2.1	0.3	0.0	0.0	18.9	0.2	0.0	4.5	82.2
P3	Concrete Paver, Sand Set - Type 1B	SF	0	3,143	0	0	0	0	39,000	322	0	0	42,465
P3	Concrete Paver, Sand Set - Type 2	SF	0	0	0	0	0	0	0	0	0	0	0
P3	Concrete Pavers on Pedestal	SF	0	0	0	1,540	0	0	0	0	0	0	1,540
P3	Bonded Pebble Mulch	SF	873	0	0	0	0	0	1,410	0	0	0	2,283
P3 - Dry-Laid Paving Total Quantities		SF	873	3,143	0	1,540	0	0	40,410	322	0	0	46,288
P3 - Dry-Laid Paving Total Unit Quantities (1,000 SF)		MSF	0.9	3.1	0.0	1.5	0.0	0.0	40.4	0.3	0.0	0.0	46.3
P4	Boardwalk - Type 1A (Elevated)	SF	4,500	0	0	0	0	0	0	0	1,300	32,850	38,650
P4	Boardwalk - Type 1B (Ramp)	SF	240	0	0	0	0	0	0	0	0	0	240
P4	Boardwalk - Type 2 (At-grade)	SF	1,167	0	0	0	0	0	0	0	0	0	1,167
P4 - Boardwalk Total Quantities		SF	5,907	0	0	0	0	0	0	0	1,300	32,850	40,057
P4 - Boardwalk Total Unit Quantities (1,000 SF)		MSF	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	32.9	40.1

Planting													
		Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63	TOTAL	
Type	Description	Unit	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
PL-TL	Trees (Large)	Ea	129	243	260	2	32	9	65	10	0	0	750
PL-TS	Trees (Small)	Ea	215	0	7	0	0	0	0	0	0	0	222
PL1-Tree Total Quantities		Ea	344	243	267	2	32	9	65	10	0	0	972
PL1-Tree Total Unit Quantities (20 Trees)		20x	17.2	12.2	13.4	0.1	1.6	0.5	3.3	0.5	0.0	0.0	48.6
PL-S	Shrubs	Ea	581	0	88	5	0	0	0	0	0	0	674
PL2-Shrub Total Quantities		Ea	581	0	88	5	0	0	0	0	0	0	674
PL2-Shrub Total Unit Quantities (20 Shrubs)		20x	29.1	0.0	4.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	33.7
PL-2W	Planters	SF	1,995	0	0	1,050	6,457	6,096	2,260	0	0	0	17,858
PL-3WW	Wet Planters	SF	4,200	0	0	0	0	0	0	0	0	0	4,200
PL-3WD	Dry Planters	SF	15,857	5,197	1,059	0	0	0	0	0	0	0	22,113
PL-4WdA	Dry Planters	SF	15,857	1,814	0	0	0	0	0	0	0	0	17,671
PL-4WDb	Dry Planters	SF	8,838	0	0	0	0	0	0	0	0	0	8,838
PL-4WW	Wet Planters	SF	3,631	0	0	0	0	0	0	0	0	0	3,631
PL-3EW	Tree Pits	SF	0	0	20,122	0	4,951	0	0	0	0	0	25,073
PL3 - Perennial Planting Area Total Quantities		SF	50,378	7,011	21,181	1,050	11,408	6,096	2,260	0	0	0	99,384
PL3 - Perennial Planting Area Total Unit Quantities (1,000 SF)		MSF	50.4	7.0	21.2	1.1	11.4	6.1	2.3	0.0	0.0	0.0	99.4
PL-1E	Tree Pits	SF	0	16,381	0	0	0	0	0	0	0	0	16,381
PL-1W	Planting areas	SF	12,321	0	0	0	0	0	0	0	0	0	12,321
PL-1EW	Tree Pits	SF	0	5,629	0	0	0	0	0	0	0	0	5,629
PL-2EW	Planters	SF	2,425	8,403	0	0	0	0	0	496	0	0	11,324
PL-2E	Tree Pits	SF	0	5,023	0	0	0	0	0	0	0	0	5,023
PL-3E	Tree Pits	SF	391	868	8,367	0	0	0	0	0	0	0	9,626
PL-5E	Planting areas (Market Garage)	SF	0	0	6,861	0	0	0	0	0	0	0	6,861
PL-5W	Hanging Planter	SF	0	0	2,889	0	0	0	0	0	0	0	2,889
PL-6W	Elliott Way West Slope Planting	SF	0	0	15,258	0	0	0	0	0	0	0	15,258
PL4-Groundcover Planting Total Quantities		SF	15,137	36,304	33,375	0	0	0	0	496	0	0	85,312
PL4-Groundcover Planting Total Unit Quantities (1,000 SF)		MSF	15.1	36.3	33.4	0.0	0.0	0.0	0.0	0.5	0.0	0.0	85.3
PL-V	Vine Planting along Screen (Higher than 8')	LF	0	0	453	0	0	0	62	0	0	0	515
PL5-Vine Planting Total Quantities		LF	0.0	0.0	453.0	0.0	0.0	0.0	62.0	0.0	0.0	0.0	515.0
PL5-Vine Planting Total Unit Quantities (100 LF)		CLF	0.0	0.0	4.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0	5.2
PL-HB	Habitat Beach area	SF	25,000	0	0	0	0	0	0	0	0	0	25,000
PL6-Habitat Beach Total Quantities		SF	25,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25,000.0
PL6-Vine Planting Total Unit Quantities (EA, Approx. 25,000 SF)		EA	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
PL-B	Bioretention Cells	Ea	2	37	32	0	0	0	0	2	0	0	73
PL7-Bioretention Cell Total Unit Quantities (Each)		Ea	2.0	37.0	32.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	73.0
PL-L	Lawn Areas	SF	1,899	0	0	0	8,800	0	1,655	0	0	0	12,354
PL8-Lawn Area Total Quantities		SF	1,899.0	0.0	0.0	0.0	8,800.0	0.0	1,655.0	0.0	0.0	0.0	12,354.0
PL8-Bioretention Cell Total Unit Quantities (Each)		MSF	1.9	0.0	0.0	0.0	8.8	0.0	1.7	0.0	0.0	0.0	12.4

Appendices

Furnishing & Site Amenities			Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63	TOTAL
Type	Description	Unit	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
F1	Bench - Type 1A *	Ea	88	6	39	11	0	47	0	4	6	0	201
F1	Bench - Type 1B *	Ea	88	10	33	0	0	0	0	0	0	0	131
F1	Bench - Type 2 *	Ea	20	0	0	0	0	0	0	0	0	0	20
F1	Bench - Type 3 *	Ea	20	0	0	0	0	0	0	0	0	0	20
F1	Bench - Type 4 (also Wfront Prk Bench #2) *	Ea	16	0	0	0	0	24	0	0	0	0	40
F1	Bench - Type 5 *	Ea	14	0	0	0	0	0	0	0	0	0	14
F1	Bench - Type 1 (Overlook Walk) *	Ea	0	0	0	0	55	0	0	0	0	0	55
F1	Bench - Type 2 (Overlook Walk) *	Ea	0	0	0	0	92	0	0	0	0	0	92
F1	Precast Concrete Seating at Overlook walk *	Ea	0	0	0	0	108	0	0	0	0	0	108
F1	Concrete Stairs (precast or metal) *	Ea	0	0	0	0	52	0	0	0	0	16	68
F1	Picnic Table	Ea	3	0	0	0	0	0	0	0	3	0	6
F1	Bench - Type 3 (Waterfront Park Chaise lounge)	Ea	0	0	0	0	0	15	0	0	0	0	15
F1	Stage	Ea	1	0	0	0	1	0	0	0	0	0	2
F1	Swings	Ea	16	0	0	0	0	0	0	0	0	0	16
F1	Drinking Fountain	Ea	10	0	0	0	0	0	0	0	0	0	10
F1	Stone Block Seats or Stacked Slabs *	Ea	0	0	0	0	26	0	0	0	0	0	26
F1	Bike Rack *	Ea	30	0	2	0	0	0	0	0	0	0	33
F1	Boulders *	Ea	7	0	0	0	0	40	0	0	0	0	47
F1	Bollards *	Ea	12	15	1	0	0	0	0	0	0	0	27
F1 - Furnishing Total Quantities			Ea	214	20	50	11	334	126	0	4	9	16
F1 -Furnishing Total Unit Quantities (10 Furn. Items)			10X	21.4	2.0	5.0	1.1	33.4	12.6	0.0	0.4	0.9	1.6
F2	Moveable Chair - Type 1	Ea	45	0	0	0	22	0	0	0	0	50	117
F2	Moveable Chair - Type 2	Ea	15	0	0	0	0	0	0	0	0	0	15
F2	Moveable Chair - Type 3	Ea	15	0	0	0	0	0	0	0	0	0	15
F2	Moveable Table	Ea	15	0	0	0	11	0	0	0	0	0	26
F2	Bar seating	Ea	0	0	0	0	21	0	0	0	0	0	21
F2 - Moveable Furn. Total Quantities			Ea	90	0	0	54	0	0	0	0	50	194
F2 -Moveable Furn. Total Unit Quantities (10 Furn. Items)			10X	9.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	5.0	19.4
F3	Trash/Recycling	Ea	15	0	5	0	2	0	0	1	1	6	30
F3 - Trash/Recycling Total Unit Quantities (Each)			Ea	15.0	0.0	5.0	0.0	2.0	0.0	0.0	1.0	1.0	6.0
F4	Railing - Type 1	LF	570	0	133	104	0	462	0	0	95	1,641	3,005
F4	Railing - Type 2	LF	200	0	0	0	0	0	0	135	0	0	335
F4	Railing - Type 3	LF	0	0	1,025	0	0	0	0	0	0	0	1,025
F4	Railing - Type 4	LF	0	0	246	0	0	0	0	0	0	0	246
F4	Railing - Type 5	LF	0	0	110	0	0	0	0	0	0	0	110
F4	Railing - PPMG	LF	0	0	61	0	0	0	0	0	0	0	61
F4	Historic Balustrade	LF	224	0	0	0	0	0	0	0	0	0	224
F4	Screen (Market Place Garage + Others)	LF	0	0	562	0	0	0	0	0	0	0	562
F4	Standoff Glass Rail	LF	0	0	0	0	1188	0	0	0	0	0	1,188
F4	Glass Rail with bar top	LF	0	0	0	0	94	0	0	0	0	0	94
F4	Throw Fence (6' glass in frame)	LF	0	0	0	0	147	0	0	0	0	0	147
F4	Stair Handrail	LF	0	0	0	115	578	0	0	0	0	0	693
F4 - Railing, Fencing, & Screens Total Quantities			LF	994	0	2,137	219	2,007	462	0	135	95	1,641
F4 -Railing, Fencing, & Screens Total Unit Quantities (50 LF)			50 LF	19.9	0.0	42.7	4.4	40.1	9.2	0.0	2.7	1.9	32.8
F5	Planter Wall - Type 1 (3.5' total, 6" exposed)	LF	1,683	0	0	0	0	0	0	0	0	0	1,683
F5	Planter Wall - Type 2 (4.5' total, 18" exposed)	LF	2,893	1,457	0	0	0	345	0	0	0	0	4,695
F5	Planter Wall - Type 3 (5' total, 24" exposed)	LF	2,635	0	0	0	2656	0	0	0	0	0	5,291
F5	Planter Wall - Type 4 (6' total, 36" exposed)	LF	1,515	0	0	0	0	0	0	0	0	0	1,515
F5	Planter Wall - Type 5 (2.5' total, 6" exposed)	LF	140	0	0	0	2251	0	0	0	0	0	2,391
F5	Planter Wall - Type 6 (3' total, fully exposed)	LF	0	0	337	0	0	177	0	0	0	0	514
F5	Planter Wall - Type 7 (1' total, 6" exposed, staked)	LF	0	2,841	778	0	0	0	0	0	0	0	3,619
F5	Planter Wall - Type 8 (1' total, 6" exposed, bolted)	LF	0	3,589	8,696	0	0	0	0	270	0	0	12,555
F5	Planter Wall - Type 9 (1' total, 9" exposed, bolted)	LF	0	1,809	504	246	0	0	0	0	0	0	2,559
F5	Hanging Planter	LF	0	0	708	0	0	0	0	0	0	0	708
F5 - Planter Wall Total Quantities			LF	8,866	9,696	11,023	246	4,907	522	0	270	0	35,530
F5 -Planter Wall Total Unit Quantities (100 LF)			CLF	88.7	97.0	110.2	2.5	49.1	5.2	0.0	2.7	0.0	355.3
F6	Wayfinding Stack	Ea	17	6	4	1	0	0	0	0	1	1	30
F6	Wayfinding Post - Type 1	Ea	27	7	8	2	0	0	0	1	1	1	47
F6	Wayfinding Panel at Railing - Type 1	Ea	36	0	0	0	0	0	0	0	0	6	42
F6	Wayfinding Cable Marker at Railing	Ea	6	0	0	0	0	0	0	0	0	0	6
F6	Wayfinding Panel at Bench - Type 1	Ea	0	10	0	3	0	0	0	0	0	0	13
F6	Wayfinding Panel at Bench - Type 2	Ea	20	0	0	0	0	0	0	0	0	0	20
F6	Wayfinding Panel at Bench - Type 4	Ea	12	0	0	0	0	0	0	0	0	0	12
F6	Wayfinding standalone Tide Element	Ea	1	0	0	0	0	0	0	0	0	0	1
F6	Wayfinding Treatment on Alaskan Way Signbridge	Ea	0	0	0	0	0	0	0	0	0	0	0
F6 - Wayfinding & Signage Total Quantities			Ea	89	17	9	6	0	0	1	2	8	133
F6 -Wayfinding & Signage Total Unit Quantities (10 Signs)			10X	8.9	1.7	0.9	0.6	0.0	0.0	0.0	0.1	0.2	13.3
F7	Artwork & Sculpture	Ea	3	0	0	1	0	0	0	0	0	1	5
F7 -Artwork & Sculpture Total Unit Quantities (Each)			Ea	3	0	0	1	0	0	0	0	1	5

Appendices

Play Areas		Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63	TOTAL
Type	Description	Unit	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
PA-1	Sand Surfacing	SF	716	0	0	0	0	0	0	0	0	716
PA1 Sand Play Areas Total Quantities		SF	716	0	0	0	0	0	0	0	0	716
PA1 Sand Play Areas Total Unit Quantities (100 SF)		CSF	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2
PA-2	Poured Rubber Surfacing	SF	1,791	0	0	0	155	0	0	0	0	1,946
PA1 Rubber Surface Play Areas Total Quantities		SF	1,791	0	0	0	155	0	0	0	0	1,946
PA1 Rubber Surface Play Areas Total Unit Quantities (100 SF)		CSF	17.9	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	19.5

Infrastructure		Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63	TOTAL
Type	Description	Unit	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
I1	Irrigated planting areas	SF	67,414	43,315	54,556	1,050	20,208	6,096	3,915	496	0	197,050
I1 Irrigation Total Quantities		SF	67,414	43,315	54,556	1,050	20,208	6,096	3,915	496	0	197,050
I1 Irrigation Total Unit Quantities (1,000 SF)		MSF	67.4	43.3	54.6	1.1	20.2	6.1	3.9	0.5	0.0	197.1
I2	Water Feature	Ea	0	0	0	0	0	1	0	0	0	1
I2 Water Feature Total Unit Quantities (Each)		Ea	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
I3	Paved/Planted areas with drainage	SF	298,164	43,315	54,556	12,080	52,843	38,665	87,725	496	1,300	658,603
I3 Site Drainage Total Quantities		SF	298,164	43,315	54,556	12,080	52,843	38,665	87,725	496	1,300	658,603
I3 Site Drainage Total Unit Quantities (10,000 SF)		XSF	29.8	4.3	5.5	1.2	5.3	3.9	8.8	0.05	0.13	66
I4	Storm Filter Catch Basins	Ea	0	24	17	0	0	0	0	0	0	41
I4 Storm Filter Catch Basin Total Quantities		Ea	0	24	17	0	0	0	0	0	0	41
I4 Storm Filter Catch Basin Total Unit Quantities (10 Basins)		10X	0.0	2.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	4.1
I5	Catch Basins	Ea	0	7	20	0	0	0	0	0	0	27
I5 Catch Basin Total Quantities		Ea	0	7	20	0	0	0	0	0	0	27
I5 Catch Basin Total Unit Quantities (10 Basins)		10X	0.0	0.7	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
I6	Pole Lighting (# of Luminaires)	Ea	54	0	0	0	4	0	22	0	0	130
I6 Pole Lighting Total Quantities		Ea	54	0	0	0	4	0	22	0	0	130
I6 Pole Lighting Total Unit Quantities (10 Luminaires)		10X	5.4	0.0	0.0	0.0	0.4	0.0	2.2	0.0	0.0	13
I7	LED Linear Wall Mounted Luminaire (4' Modules)	Ea	0	0	0	13	0	0	0	7	0	20
I7	Uplight Inground	Ea	193	0	14	12	129	54	8	0	0	410
I7	LED Strip Lighting (Railing, Bench, Planter Wall)	Ea	33	0	0	14	85	28	14	0	0	174
I7 Pedestrian Lighting Total Quantities		Ea	226	0	14	39	214	82	22	7	0	604
I7 Pedestrian Lighting Total Unit Quantities (10 Lights)		10X	22.6	0.0	1.4	3.9	21.4	8.2	2.2	0.7	0.0	60.4

Structures/Building Space		Promenade	Alaskan Way	Elliott Way	Lower Union St.	Overlook Walk	Waterfront Park	Railroad Way	Seneca St.	WSBL	Pier 62/63	TOTAL
Type	Description	Unit	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
S1	Kiosks	Ea	4	0	0	1	0	0	0	0	1	6
S1 Kiosk Total Unit Quantities (Each)		Ea	4	0	0	1	0	0	0	0	1	6.0
S2	Concrete Structure (pedestrian overpass)	Ea	0	0	0	1	0	0	0	0	0	1
S2 Concrete Structures Total Unit Quantities (Each)		Ea	0	0	0	1	0	0	0	0	0	1.0
S3	Maintenance Facility	Ea	0	0	0	0	1	0	0	0	0	1
S3 Maintenance Facility Total Unit Quantities (Each)		Ea	0	0	0	0	1	0	0	0	0	1.0
S4	Restrooms	Ea	1	6	0	0	0	0	0	0	1	8
S4 Restrooms Total Unit Quantities (Each)		Ea	1	6	0	0	0	0	0	0	1	8.0
S5	Restrooms (Full-time Attended)	Ea	0	0	0	0	1	0	0	0	0	1
S5 Restrooms FTA Total Unit Quantities (Each)		Ea	0	0	0	0	1	0	0	0	0	1.0
S6	Elevators	Ea	0	0	0	1	1	0	0	0	0	2
S6 Elevators Total Unit Quantities (Each)		Ea	0	0	0	1	1	0	0	0	0	2.0
S7	Building Maintenance	SF	0	0	0	0	49,541	0	0	0	2,500	52,041
S7 Building Maintenance Total Unit Quantities (5,000 SF)		VSF	0	0	0	0	9.9	0	0	0	1	10.4

APPENDIX B

LANDSCAPE TYPE TASK HOUR TABLES



Below is a summary of the methodology behind determining the necessary task hours to annually maintain one unit of each Landscape Type. The task hour charts include the following terms and abbreviations:

- TASK – The specific maintenance task
- QTY – The estimated quantity over which a task is performed (Many of the tasks are estimated as a percentage of the total quantity.)
- UNIT - A unit is a commonly accepted unit of measurement for each landscape type and its associated tasks. The unit abbreviations used throughout this project include:
 - XSF - 10,000 Square Feet
 - MSF - 1,000 Square Feet
 - CSF - 100 Square Feet
 - CLF - 100 Linear Feet
 - XSF - 10 Square Feet
 - XLF - 10 LF
 - Each or EA -1 of a particular item
 - Allow – Allowance of time for a particular task
- UNIT (MIN) – Time standard necessary to complete 1 UNIT of a task in minutes (These time standards are based on the “Park Maintenance Standards” published by the National Recreation and Park Association (NRPA) and adjusted for the individual project’s location and management goals.)
- ONCE (MIN) – The quantity of the task multiplied by the time standard and shown in minutes
- ONCE (HOURS) – The time in minutes divided by 60 and converted into hours
- ANNUAL FREQUENCY – Number of times the task is performed annually (These frequencies reflect assumed maintenance levels based on the project location and design intent outlined in the JCFO “Basis of Design” document.)
- TOTAL HOURS – The annual frequency multiplied by the time in hours for performing the task once

$$QTY \times UNIT = ONCE (MIN) / ONCE (HOURS) \times ANNUAL FREQUENCY = TOTAL HOURS/UNIT/YEAR$$

Appendices

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS	W-1	W-2	W-3
Paved Areas - HOURS/Unit											
P1 - Asphalt & Concrete Paving							36	Annual hours/10,000 SF	25	3	8
Clean paved surface	2	msf	5	10	0	52	9	20% of area ; with backpack blower	9		
Power washing & permeable Asphalt Cleaning	2	msf	70	140	2	2	5	20% of area; clean stained/dirty areas with power washer & clean permeable asphalt areas with regenerative air sweeper or vacuum sweeper	5		
Paving repair	1	csf	240	240	4	2	8	1% of area - repair pavement marking, cracks, spalling, settling, etc.			8
Graffiti removal		allow					5	Includes both gum and graffiti removal	5		
Remove litter	0.5	msf	3	2	0	260	7	5% of area; 5x per week	7		
Snow and ice management	10	msf	20	200	3	1	3	100% of an area - Includes snow removal, sand/salt spreading, etc. with vehicle and hand equipment		3	
P2 - Mortar Set Inlay Paving							11.5	Annual hours/1,000 SF	10	0.5	1.0
Clean paved surface	3	csf	2	6	0	52	5	30% of area ; with backpack blower	5		
Scrubbing and washing	5	csf	5	25	0	4	2	50% of area, scrub with medium bristle broom or power washer	2		
Repair/reset paving	0.2	csf	300	60	1	1	1	2% of area, repair/reset loose or damaged inlay paving & epoxy way finding graphics			1.0
Graffiti removal		allow					1	Includes both gum and graffiti removal	1.0		
Remove litter	0.5	csf	1	1	0	260	2	5% of area; 5x per week	2		
Snow and ice management	1	msf	30	30	1	1	1	100% of an area - Includes snow removal, sand/salt spreading, etc. with hand equipment only		0.5	
P3 - Dry-Laid Paving							14	Annual hours/1,000 SF	13	1	0
Clean paved surface	3	csf	1	3	0	52	3	30% of area ; with backpack blower	2.6		
Scrubbing and washing	5	csf	5	25	0	4	2	50% of area, scrub with medium bristle broom or power wash	2		
Reset paving	0.4	csf	120	48	1	1	1	4% of area, repair/reset loose or damaged inlay paving		0.8	
Graffiti removal		allow					5	Includes both gum and graffiti removal	5		
Weeding	1	csf	5	5	0	16	1	10% of area; pulling by hand or herbicide applicator	1.3		
Remove litter	0.5	csf	1	1	0	260	2	5% of area; 5x per week	2		
Snow and ice management	1	msf	30	30	1	1	1	100% of an area - Includes snow removal, sand/salt spreading, etc. with hand equipment only		0.5	
P4 - Boardwalk							6	Annual hours/1,000 SF	3	3	0
Power washing	5	csf	3	15	0	4	1	50% of area; scrub with medium bristle broom or power wash	1		
Boardwalk maintenance	1	csf	150	150	3	1	3	10% of area, includes regular inspection, deck board/structural repairs and vandalism repair		2.5	
Clean boardwalk surface	3	csf	1	3	0	42	2	30% of area ; with backpack blower or broom; 2x/week to clear sand and loose materials from decking	2.1		
Snow and ice management	1	msf	30	30	1	1	1	100% of an area - Includes snow removal, sand/salt spreading, etc. with hand equipment only		0.5	

Appendices

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS			
Planting - HOURS/Unit											
PL1 - Trees							12	Annual hours/20 Trees	6	6	0
Tree pruning	5	each	30	150	3	1	3	25% of total trees: Prune by hand w/ extension pole pruners & bucket truck for some		2.5	
Tree fertilizer application	5	each	10	50	1	1	1	25% of total trees, 1 application spring	0.8		
Horticultural pest control	2	each	30	60	1	2	2	10% of total trees		2	
Tree replacement	1	each	90	90	2	1	2	1 in 20 trees/year		1.5	
Composting/chipping of landscape debris		allow					5	Collect and deposit compostable materials for offsite composting	5		
PL2 - Shrubs							11	Annual hours/20 Shrubs	10	1	0
Pruning	10	each	15	150	3	2	5	50% of total shrubs: Prune by hand	5		
Shrub replacement	2	each	30	60	1	1	1	2 in 20 shrubs/year		1	
Composting/chipping of landscape debris		allow					5	Collect and deposit compostable materials for offsite composting	5		
PL3 - Perennial Planting Areas							20	Annual hours/1,000 SF	19	1	0
Weed control	1	csf	5	5	0	20	2	10% of area; By hand, monthly and more often during growing season	2		
Seasonal cleanup and prep	5	csf	10	50	1	2	2	50% of area; Spring/Fall, removal, cut back, bed prep	2		
Pruning and trimming	2	csf	10	20	0	17	6	20% of area; weekly during growing season	6		
Top dress soil and/or mulch	5	csf	5	25	0	2	1	50% of area	0.8		
Fertilizer application	10	csf	2	20	0	2	1	100% of area	1		
Annual soils test evaluation		allow					1			1.0	
Horticultural pest control	2	csf	6	12	0	5	1	20% of area; Monit/control - Rodents, birds, etc.	1		
Plant replacement	20	sf	10	200	3	2	7	2% of area	7		
Remove litter	1	csf	1	1	0	52	1	10% of area; 1x per week	1		
PL4 - Groundcover Planting Areas							12	Annual hours/1,000 SF	11	1	0
Weed control	1	csf	5	5	0	10	1	10% of area; By hand, monthly during growing season	0.8		
Seasonal cleanup and prep	5	csf	10	50	1	2	2	50% of area; Spring/Fall, removal, cut back, bed prep	2		
Pruning and trimming	2	csf	10	20	0	6	2	20% of area; Monthly during growing season	2		
Top dress soil and/or mulch	5	csf	5	25	0	2	1	50% of area	0.8		
Fertilizer application	10	csf	2	15	0	2	1	100% of area	0.5		
Annual soils test evaluation		allow					1			1.0	
Horticultural pest control	2	csf	6	12	0	4	1	20% of area; Monitor/control - Rodents, birds, etc.	1		
Plant replacement	20	sf	10	200	3	1	3	2% of area	3		
Remove litter	1	csf	1	1	0	52	1	10% of area; 1x per week	1		
PL5 - Vine Planting along Screen							10	Annual hours/100 LF	2	8	0
Seasonal cleanup and cut-back	5	xlif	30	150	3	2	5	50% of area; Spring/Fall. Seasonal cut back w/boom truck & cleanup, mulching & bed prep, fertilizer application		5	
Pruning and trimming	2	xlif	20	40	1	4	3	20% of area; during growing season w boom truck to control growth		3	
Horticultural pest control		allow					1	20% of area; Monitor/control - Rodents, birds, etc.	1		
Plant replacement		allow					1		1		
PL6 - Habitat Beach							72.5	Annual hours/LS (25,000 SF Beach Area)	71.5	1.0	0
Weed control	2.5	msf	24	60	1	10	10	10% of entire beach area; By hand, monthly during growing season	10		
Tree care		allow					2		2		
Beach planting care	1	msf	90	90	2	6	9	20% of 5m SF planting area; Monthly during growing season	9		
Beach material replenishment	1.5	msf	120	180	3	1	3	10% of 15m SF Sand & Riprap area	3		
Beach sand raking	2	msf	20	40	1	26	17	20% of 10m SF sand area; Raking and leveling; bi-weekly	17		
Beach object maintenance		allow					5	Maintain and clean Tetrapods, boulders, and logs	5		
Annual soils test evaluation		allow					1			1.0	
Horticultural pest control	2	msf	40	80	1	4	5	20% of entire beach; Monit/control - Rodents, birds, etc.	5		
Plant replacement	1	csf	240	240	4	1	4	2% of 5m SF planting area	4		
Hand watering		allow					15	As needed for all trees and planting areas	15		
Remove litter	1	csf	1	1	0	52	1	10% of entire beach area; 1x per week	1		
PL7 - Bio retention Cells							11	Annual hours/ Each - Approx. 70 SF	7	4	0
Seasonal cleanup and prep	4	xsf	15	60	1	2	2	50% of area; Spring/Fall, cut back, plant replacement		2	
Trimming	2	xsf	4	9	0	14	2	20% of area; bi-weekly during growing season	2		
Remove/replace mulch layer	7	xsf	10	70	1	1	1	1x/year; Entire area; coordinate with seasonal cleanup		1.2	
Cell inspection		allow					1	4x/year; Evaluate drainage, soil quality, siltation levels		1	
Clear pre-settling tank	1	each	20	20	0	12	4	Monthly; Remove silt and debris from basin	4		
Remove litter		allow					1	1x per week, surface litter	1		
PL8 - Lawn							19	Annual hours/1,000SF	17	2	0
Mow/trim	1	msf	10	10	0	36	6	100% of area, walk-behind mower and string trimmer	6		
Seasonal turf renovation	1	msf	90	90	2	2	3	100% of area, thatch, aerate, seed	3		
Top dress soil	5	csf	10	50	1	2	2	50% of area	2		
Turf fertilizer/weed preventer app.	1	msf	10	10	0	5	1	100% of area; fertilizer and pre-emergent applications	1		
Annual soils test evaluation		allow					2	Done prior to fertilization		2	
Horticultural pest control	2	csf	5	10	0	8	1	20% of area; Monitor/control Grubs/Moles/Voles/rodents	1		
Temporary fence	2	clif	20	40	1	4	3	Install/maintain temporary fencing, assume 200 lf	3		
Remove litter	1	csf	1	1	0	76	1	10% of area, 1x/week and 2x/week during busy season,	1		

Appendices

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS			
Furnishing & Site Amenities - HOURS/Unit											
F1 - Furnishing							15	Annual hours/Ten Furnishing Items	13	2	0
Clean & inspect site furnishing	2	each	10	20	0	34	11	20% Weekly April - Nov. Includes all seating types and standalone site elements. See Project quantities for a complete list.	11		
Graffiti removal		Allow					2	As needed	2		
Repair & maintenance	1	each	120	120	2	1	2	10% of all site furniture, includes material repair/replacement, tightening mechanical connections, vandalism repair, Tnemec Paint touch-up & repair, etc.		2	
F2 - Moveable Furnishing							46	Annual hours/Ten Furnishing Items	45	1	0
Clean & inspect site furnishing	2	each	3	6	0	34	3	20% Weekly April - Nov.	3		
Graffiti removal		Allow					2	As needed	2		
Maintenance	1	each	20	20	0	2	1	10% of all site furniture, Touch-up of painted surfaces		1	
Secure furnishing	10	each	1	10	0	238	40	All site furnishing, Daily April-Nov.	40		
F3 - Trash & Recycling							27	Annual hours/ T&R Station	27	0	0
Empty T/R station - Peak	1	each	5	5	0	168	14	7x/week for 24 weeks	14		
Empty T/R station - Shoulder	1	each	5	5	0	60	5	5x/week for 12 weeks	5		
Empty T/R station - Off-season	1	each	5	5	0	32	3	2x/Week for 16 weeks	3		
Clean T/R station	1	each	10	10	0	24	4	2x/Month	4		
Rodent and pest control		Allow					1	2x/Month	1		
F4 - Railing, Fencing & Screens							6	Annual hours/ 50 LF	5	0	1
Clean & inspect	10	lf	1	5	0	52	4	20%, Weekly; Includes wood, glass and Metal surfaces	4		
Repair & maintenance	1	lf	45	45	1	1	1	2% of all surfaces; Wood, metal, and glass repair; includes paint touch-up			1
Graffiti removal		allow					1	As needed	1		
F5 - Planter Walls							8	Annual hours/ 100 LF	5	2	1
Clean & inspect	10	lf	1	10	0	26	4	10%, bi-weekly;	4		
Touch-up paint surfaces	1	lf	45	45	1	2	2	1% of all exposed surfaces; Tnemec painted metal		2	
Repair & maintenance		allow					1	Repair metal as needed from use and impacts			1
Graffiti removal		allow					1	As needed	1.0		
F6 - Signage & Wayfinding							36	Annual hours/10 Signage Elements	35	1	0
Clean & inspect	10	each	6	60	1	34	34	All signage elements; Weekly April - Nov.	34		
Repair & maintenance	1	each	60	60	1	1	1	Includes tightening connections, re-painting, repair and replacement as needed		1	
Graffiti removal		allow					1	As needed	1		
F7 - Artwork & Sculpture							13	Annual hours/Art Piece	0	10	3
Clean & inspect	1	each	45	45	1	12	9	Monthly		9	
Conservation	1	each	180	180	3	1	3				3
Graffiti removal		allow					1	As needed		1	

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS			
Play Areas - HOURS/Unit											
PA1 - Sand Play Area							33	Annual hours/100 SF	29	4	0
Sand leveling & cleaning	1	csf	5	5	0	260	22	Entire sand area; 5x/week. Includes inspection, raking and leveling of sand, litter removal, cleaning up after spills and accidents	22		
Sand replacement		Allow					4	Complete sand replacement, performed 1x/year	4		
Play equipment cleaning		Allow					3	3x/week	3		
Play equipment Repair		Allow					4	As needed		4	
PA2 - Rubber Surface Play Area							31	Annual hours/100 SF	20	11	0
Safety surface cleaning	1	csf	4	4	0	260	17	Entire area; 5x/week. Includes inspection, litter removal, cleaning up after spills, accidents, bird droppings	17		
Safety surface repair	5	sf	40	200	3	2	7	5% of area; repair and replace as necessary		7	
Play equipment cleaning		Allow					3	3x/week	3		
Play equipment repair		Allow					4	3x/week		4	

Appendices

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS			
Infrastructure - HOURS/Unit											
I1 - Irrigation							10	Annual hours/1,000 SF	4	3	3
Monitoring/system check	1	msf	10	10	0	26	4	Bi-weekly; Monitor to ensure adequate coverage, damage, and functionality.	4:3		
Spray head & valve repair/maint.		allow					3	Repair above grade components as needed, assume 5-10% replacement annually		3.0	
System maintenance		allow					3	System repair and clean out, winterization, spring startup. Note: System maintenance includes supply lines to all quick couplers, Mushroom pump/mud table, and drinking fountains.			3
I2 - Water Feature							431	Annual hours/Feature (14,000 SF w Sheet & Mist)	155	168	109
Check strainer, filter backwash & grate	1	Allow	30	30	1	112	56	Every other day during operating season, 32 Weeks ; Monitor to ensure adequate coverage, damage, and functionality.		56	
Strainer, filter backwash & Grate cleaning	1	Allow	150	150	3	32	80	Weekly during operating season; Maintain proper function of filters & Strainers	80		
Water quality maintenance	1	Allow	30	30	1	224	112	Daily; check water quality, adjust chemicals & filtration		112	
Jet and valve cleaning, testing & service	1	Allow	35	35	1	8	5	Monthly; test, clean, service, repair if needed			5
Surface cleaning/mineral deposit removal	14	msf	20	280	5	16	75	100% of area, Bi-weekly during operation season. Scrubbing and powerwashing	75		
Winterization/spring startup		allow					64	2 days/2 person crew each season			64
Misc. system maintenance		allow					40	Assume 1 person/5 days			40
I3 - Site Drainage (Pedestrian Paving & Planting Beds)							10	Annual hours/10,000 SF Area	6	4	0
Inspect & clean surface drainage infrastructure	1	Allow	30	30	1	12	6	Monthly; inspect, remove litter/debris from runnels, trench & area drains	6		
Repair Infrastructure	1	Allow	240	240	4	1	4	Repair damaged drainage infrastructure; Includes trench drains, area drains, and below grade planting bed inlet drains if needed		4	
I4- Storm Filter Catch Basins							4	Annual hours/Each	0	4	0
Inspect catch basin	1	Each	5	5	0	12	1	Monthly; inspect for siltation and blockages		1	
Clean catch basin	1	Each	30	30	1	4	2	4x/year; remove debris and silt		2	
Replace filter cartridge	1	Each	40	40	1	1	1	1x/year or as needed; remove & replace		1	
I5- Catch Basins							1.5	Annual hours/Each	0	1.5	0
Inspect catch basin	1	Each	5	5	0	6	0.5	Bi-monthly; inspect for siltation and blockages		1	
Clean catch basin	1	Each	30	30	1	2	1.0	2x/year; remove debris and silt		1	
I6- Pole Lighting							5	Annual hours/10 Luminaires	0	4	1
Clean & Inspect		Allow					4	4x/year; Clean graffiti and remove stickers from lower pole section, Inspect for proper function and damage		4	
Luminaire replacement	1	Each	60	60	1	1	1	1x/year or as needed; Assume 10% annually; remove & replace			1
Pole & Fixture Repair/Maintenance		Allow					1	As needed; repair damage from vehicles/vandalism			1
I7- Pedestrian Lighting							3	Annual hours/10 Light Fixtures	1	2	0
Inspect & clean		Allow					1	4x/year; Clean & Inspect for proper function and damage	1		
Fixture/lumen board replacement	1	Each	60	60	1	2	2	2x/year or as needed; Assume 10% annually; remove & replace due to damage/fixture burn out		2	

TASK	QTY	UNIT	UNIT (min)	ONCE (min)	ONCE (hours)	ANNUAL FREQ.	TOTAL HOURS	COMMENTS			
Structures/Building Space- HOURS/Unit											
S1- Kiosks							16	Annual hours/Each	0	12	4
Clean & Inspect	1	Each	120	120	2	6	12	6x/year; Clean all glass and metal surfaces and inspect for any wearing or damage		12	
Repair/Maintain Structure		Allow					4	As needed; repair damage from weather, vandalism, use			4
S2- Concrete Structures							9	Annual hours/Each	0	5	4
Clean & Inspect	1	Each	300	300	5	1	5	1x/year; Clean all concrete surfaces and inspect for any wearing or damage		5	
Minor Repair/Maintenance		Allow					4	As needed; repair damage from weather, vandalism, use			4
S3- Maintenance Facilities							32	Annual hours/Each (approx. 2,500 SF)	24	0	8
Interior Cleaning	1	Each	240	240	4	6	24	2x/year; Clean all interior surfaces and inspect for any damage	24		
Repair/Maintenance		Allow					8	As needed; lighting, plumbing, other.			8
S4- Restrooms							205	Annual hours/Each=1 single unit	199	0	6
Daily Cleaning/Maintenance	1	Each	20	20	0	584	195	2x daily cleaning for 6 months and 1x daily cleaning for 6 months. Includes cleaning of all surfaces, emptying trash, and restocking toiletries.	195		
Repair/Maintenance		Allow					6	As needed; lighting, plumbing, tile repair, other.			6
Vandalism/Graffiti Removal		Allow					4	As needed	4		
S5- Restrooms (attended)							3778	Annual hours/Each=Entire restroom area	3,772	0	6
Full-time Attendance - Summer Open 12 Hours	1	Each	720	720	12	213	2556	Includes a minimum of 2x daily cleaning of all toilets/urinals, cleaning of all surfaces, emptying trash, and restocking toiletries & graffiti removal.	2,556		
Full-time Attendance - Winter Open 8 Hours	1	Each	480	480	8	152	1216	Includes a minimum of 2x daily cleaning of all toilets/urinals, cleaning of all surfaces, emptying trash, and restocking toiletries & graffiti removal.	1,216		
Repair/Maintenance		Allow					6	As needed; lighting, plumbing, tile repair, other.			6
S6- Elevators							169	Annual hours/Each	73	0	96
Glass & Interior Cleaning	1	Each	80	80	1	52	69	weekly; Clean all glass surfaces and inspect for any damage	69		
Vandalism/Graffiti Removal		Allow					4	As needed	4		
Scheduled Maintenance/Repair	1	Each	480	480	8	12	96	Monthly service, on-call maintenance, and repairs (mechanical inspection, maintenance & repair)			96
S7- Building Maintenance							49	Annual hours/5,000 SF Interior Space	9	0	40
Exterior Cleaning	1	Each	90	90	2	6	9	Monthly cleaning of all exterior walls (approx. 1,500 SF)	9		
Repair/Maintenance		Allow					40	As needed; roof repair, HVAC, exterior repair, drainage			40

APPENDIX C

PROJECT AREA TASK HOUR SUMMARIES



PROMENADE

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	17.5	X SF	36	632	434	58	140
P2 - Mortar Set Inlay Paving	49.2	MSF	12	568	494	25	49
P3 - Dry-Laid Paving	0.9	MSF	14	12	11	1	0
P4 - Boardwalk	5.9	MSF	6.1	36	18	18	0
Total Paved Area Hours				1,248	957	102	189
Planting							
PL1 - Trees	17.2	20 Trees	12	204	100	103	0
PL2 - Shrubs	29.1	20 Shrubs	11	320	291	29	0
PL3 - Perennial Planting Areas	50.4	MSF	20.0	1,009	959	50	0
PL4 - Groundcover Planting Areas	15.1	MSF	12	179	164	15	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	1	EA	73	73	72	1	0
PL7 - Bioretention Cells	2	EA	11.2	22	14	8	0
PL8 - Lawn Areas	1.9	MSF	19	36	32	4	0
Total Horticulture Hours				1,842	1,631	211	0
Furnishing & Site Amenities							
F1 - Furnishing	21.4	10 Items	15	327	285	43	0
F2 - Moveable Furnishing	9.0	10 Items	46	412	406	6	0
F3 - Trash & Recycling	15	EA	27	400	400	0	0
F4 - Railing, Fencing & Screens	19.9	50 LF	6	121	106	0	15
F5 - Planter Walls	88.7	CLF	8	695	473	133	89
F6 - Signage and Wayfinding	8.9	10 Items	36	321	312	9	0
F7 - Artwork & Sculpture	3.0	EA	13	39	0	30	9
Total Furn. & Site Amen. Hours				2,315	1,982	221	113
Play Areas							
PA1 - Sand Play Area	7.2	CSF	33	234	205	29	0
PA2 - Rubber Surface Play Area	17.9	CSF	31	555	364	191	0
Total Play Area Hours				789	569	220	0
Infrastructure							
I1 - Irrigation	67.4	MSF	10	697	292	202	202
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	29.8	MSF	10	298	179	119	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	5.4	10 Items	5	27	0	22	5
I7 - Pedestrian Lighting	22.6	10 Items	3	68	23	45	0
Total Infrastructure Hours				1,090	494	388	208
Structures/Building Spaces							
S1 - Glass/Metal Structures	4	EA	16	64	0	48	16
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	1	EA	205	205	199	0	6
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0.0	EA	49	0	0	0	0
Total Structure Hours				269	199	48	22
Grand Total Maintenance Hours				7,552	5,832	1,189	531

ALASKAN WAY

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	12.2	ˆ SF	36	440	302	41	97
P2 - Mortar Set Inlay Paving	7.0	MSF	12	81	70	4	7
P3 - Dry-Laid Paving	3.1	MSF	14	44	40	4	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				565	412	48	104
Planting							
PL1 - Trees	12.2	20 Trees	12	144	71	73	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	7.0	MSF	20.0	140	133	7	0
PL4 - Groundcover Planting Areas	36.3	MSF	12	430	393	36	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	37	EA	11.2	413	259	154	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				1,127	857	270	0
Furnishing & Site Amenities							
F1 - Furnishing	2.0	10 Items	15	31	27	4	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	0	EA	27	0	0	0	0
F4 - Railing, Fencing & Screens	0.0	50 LF	6	0	0	0	0
F5 - Planter Walls	97.0	CLF	8	760	517	145	97
F6 - Signage and Wayfinding	1.7	10 Items	36	62	60	2	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				853	604	151	97
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	43.3	MSF	10	448	188	130	130
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	4.3	MSF	10	43	26	17	0
I4 - Storm Filter Catchbasins	2.4	EA	4	9	0	9	0
I5 - Catchbasins	0.7	EA	1.5	1	0	1	0
I6 - Pole Lighting	0.0	10 Items	5	0	0	0	0
I7 - Pedestrian Lighting	0.0	10 Items	3	0	0	0	0
Total Infrastructure Hours				501	214	157	130
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	6	EA	205	1,228	1,192	0	36
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0.0	EA	49	0	0	0	0
Total Structure Hours				1,228	1,192	0	36
Grand Total Maintenance Hours				4,273	3,279	627	367

ELLIOTT WAY

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	7.5	X SF	36	271	186	25	60
P2 - Mortar Set Inlay Paving	2.1	MSF	12	24	21	1	2
P3 - Dry-Laid Paving	0.0	MSF	14	0	0	0	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				295	207	26	62
Planting							
PL1 - Trees	13.4	20 Trees	12	158	78	80	0
PL2 - Shrubs	4.4	20 Shrubs	11	48	44	4	0
PL3 - Perennial Planting Areas	21.2	MSF	20.0	424	403	21	0
PL4 - Groundcover Planting Areas	33.4	MSF	12	395	362	33	0
PL5 - Vine Planting along Screen	4.5	CLF	10	44	9	35	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	32	EA	11.2	358	224	133	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				1,427	1,120	307	0
Furnishing & Site Amenities							
F1 - Furnishing	5.0	10 Items	15	76	66	10	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	5	EA	27	133	133	0	0
F4 - Railing, Fencing & Screens	42.7	50 LF	6	260	228	0	32
F5 - Planter Walls	110.2	CLF	8	863	588	165	110
F6 - Signage and Wayfinding	0.9	10 Items	36	32	32	1	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				1,365	1,047	176	142
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	54.6	MSF	10	564	236	164	164
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	5.5	MSF	10	55	33	22	0
I4 - Storm Filter Catchbasins	1.7	EA	4	6	0	6	0
I5 - Catchbasins	2.0	EA	1.5	3	0	3	0
I6 - Pole Lighting	0.0	10 Items	5	0	0	0	0
I7 - Pedestrian Lighting	1.4	10 Items	3	4	1	3	0
Total Infrastructure Hours				632	271	198	164
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0	EA	49	0	0	0	0
Total Structure Hours				0	0	0	0
Grand Total Maintenance Hours				3,719	2,644	707	368

LOWER UNION STREET

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	0.9	X SF	36	33	23	3	7
P2 - Mortar Set Inlay Paving	0.3	MSF	12	3	3	0	0
P3 - Dry-Laid Paving	1.5	MSF	14	22	20	2	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				58	45	5	8
Planting							
PL1 - Trees	0.1	20 Trees	12	1	1	1	0
PL2 - Shrubs	0.3	20 Shrubs	11	3	3	0	0
PL3 - Perennial Planting Areas	1.1	MSF	20.0	21	20	1	0
PL4 - Groundcover Planting Areas	0.0	MSF	12	0	0	0	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	0	EA	11.2	0	0	0	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				25	23	2	0
Furnishing & Site Amenities							
F1 - Furnishing	1.1	10 Items	15	17	15	2	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	0	EA	27	0	0	0	0
F4 - Railing, Fencing & Screens	4.4	50 LF	6	27	23	0	3
F5 - Planter Walls	2.5	CLF	8	19	13	4	2
F6 - Signage and Wayfinding	0.6	10 Items	36	22	21	1	0
F7 - Artwork & Sculpture	1.0	EA	13	13	0	10	3
Total Furn. & Site Amen. Hours				97	72	16	9
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	1.1	MSF	10	11	5	3	3
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	1.2	MSF	10	12	7	5	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	0.0	10 Items	5	0	0	0	0
I7 - Pedestrian Lighting	3.9	10 Items	3	12	4	8	0
Total Infrastructure Hours				35	16	16	3
Structures/Building Spaces							
S1 - Glass/Metal Structures	1	EA	16	16	0	12	4
S2 - Concrete Structures	1	EA	9	9	0	5	2
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	1	EA	169	169	73	0	96
S7 - Building Maintenance	0	EA	49	0	0	0	0
Total Structure Hours				194	73	17	102
Grand Total Maintenance Hours				410	230	56	122

OVERLOOK WALK

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	3.3	X SF	36	118	81	11	26
P2 - Mortar Set Inlay Paving	0.0	MSF	12	0	0	0	0
P3 - Dry-Laid Paving	0.0	MSF	14	0	0	0	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				118	81	11	26
Planting							
PL1 - Trees	1.6	20 Trees	12	19	9	10	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	11.4	MSF	20.0	229	217	11	0
PL4 - Groundcover Planting Areas	0.0	MSF	12	0	0	0	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	0	EA	11.2	0	0	0	0
PL8 - Lawn Areas	8.8	MSF	19	165	148	18	0
Total Horticulture Hours				413	374	39	0
Furnishing & Site Amenities							
F1 - Furnishing	33.4	10 Items	15	513	446	67	0
F2 - Moveable Furnishing	5.4	10 Items	46	247	243	4	0
F3 - Trash & Recycling	2	EA	27	53	53	0	0
F4 - Railing, Fencing & Screens	40.1	50 LF	6	244	214	0	30
F5 - Planter Walls	49.1	CLF	8	384	262	74	49
F6 - Signage and Wayfinding	0.0	10 Items	36	0	0	0	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				1,442	1,218	144	79
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	1.6	CSF	31	48	32	17	0
Total Play Area Hours				48	32	17	0
Infrastructure							
I1 - Irrigation	20.2	MSF	10	209	88	61	61
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	5.3	MSF	10	53	32	21	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	0.4	10 Items	5	2	0	2	0
I7 - Pedestrian Lighting	21.4	10 Items	3	64	21	43	0
Total Infrastructure Hours				328	141	126	61
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	1	EA	32	32	24	0	8
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	1	EA	3,778	3,778	3,772	0	6
S6 - Elevators	1	EA	169	169	73	0	96
S7 - Building Maintenance	9.9	EA	49	486	89	0	396
Total Structure Hours				4,465	3,959	0	506
Grand Total Maintenance Hours				6,813	5,804	336	673

WATERFRONT PARK

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	3.3	ˆ SF	36	118	81	11	26
P2 - Mortar Set Inlay Paving	0.0	MSF	12	0	0	0	0
P3 - Dry-Laid Paving	0.0	MSF	14	0	0	0	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				118	81	11	26
Planting							
PL1 - Trees	0.5	20 Trees	12	5	3	3	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	6.1	MSF	20.0	122	116	6	0
PL4 - Groundcover Planting Areas	0.0	MSF	12	0	0	0	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	0	EA	11.2	0	0	0	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				127	119	9	0
Furnishing & Site Amenities							
F1 - Furnishing	12.6	10 Items	15	193	168	25	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	0	EA	27	0	0	0	0
F4 - Railing, Fencing & Screens	9.2	50 LF	6	56	49	0	7
F5 - Planter Walls	5.2	CLF	8	41	28	8	5
F6 - Signage and Wayfinding	0.0	10 Items	36	0	0	0	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				290	245	33	12
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	6.1	MSF	10	63	26	18	18
I2 - Water Feature	1	EA	431	431	155	168	109
I3 - Site Drainage	3.9	MSF	10	39	23	15	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	0.0	10 Items	5	0	0	0	0
I7 - Pedestrian Lighting	8.2	10 Items	3	25	8	16	0
Total Infrastructure Hours				558	212	218	127
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0.0	EA	49	0	0	0	0
Total Structure Hours				0	0	0	0
Grand Total Maintenance Hours				1,093	657	271	165

RAILROAD WAY

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	2.5	X SF	36	89	61	8	20
P2 - Mortar Set Inlay Paving	18.9	MSF	12	218	190	9	19
P3 - Dry-Laid Paving	40.4	MSF	14	568	516	53	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				875	766	70	39
Planting							
PL1 - Trees	3.3	20 Trees	12	38	19	20	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	2.3	MSF	20.0	45	43	2	0
PL4 - Groundcover Planting Areas	0.0	MSF	12	0	0	0	0
PL5 - Vine Planting along Screen	0.6	CLF	10	6	1	5	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	0	EA	11.2	0	0	0	0
PL8 - Lawn Areas	1.7	MSF	19	31	28	3	0
Total Horticulture Hours				121	91	30	0
Furnishing & Site Amenities							
F1 - Furnishing	0.0	10 Items	15	0	0	0	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	0	EA	27	0	0	0	0
F4 - Railing, Fencing & Screens	0.0	50 LF	6	0	0	0	0
F5 - Planter Walls	0.0	CLF	8	0	0	0	0
F6 - Signage and Wayfinding	0.0	10 Items	36	0	0	0	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				0	0	0	0
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	3.9	MSF	10	40	17	12	12
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	8.8	MSF	10	88	53	35	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	2.2	10 Items	5	11	0	9	2
I7 - Pedestrian Lighting	2.2	10 Items	3	7	2	4	0
Total Infrastructure Hours				146	72	60	14
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0.0	EA	49	0	0	0	0
Total Structure Hours				0	0	0	0
Grand Total Maintenance Hours				1,142	929	160	52

SENECA STREET

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	0.2	ˆ SF	36	7	5	1	2
P2 - Mortar Set Inlay Paving	0.2	MSF	12	2	2	0	0
P3 - Dry-Laid Paving	0.3	MSF	14	5	4	0	0
P4 - Boardwalk	0.0	MSF	6.1	0	0	0	0
Total Paved Area Hours				14	11	1	2
Planting							
PL1 - Trees	0.5	20 Trees	12	6	3	3	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	0.0	MSF	20.0	0	0	0	0
PL4 - Groundcover Planting Areas	0.5	MSF	12	6	5	0	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	2	EA	11.2	22	14	8	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				34	22	12	0
Furnishing & Site Amenities							
F1 - Furnishing	0.4	10 Items	15	6	5	1	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	1	EA	27	27	27	0	0
F4 - Railing, Fencing & Screens	2.7	50 LF	6	16	14	0	2
F5 - Planter Walls	2.7	CLF	8	21	14	4	3
F6 - Signage and Wayfinding	0.1	10 Items	36	4	4	0	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				74	64	5	5
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	0.5	MSF	10	5	2	1	1
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	0.0	MSF	10	0	0	0	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	0.0	10 Items	5	0	0	0	0
I7 - Pedestrian Lighting	0.0	10 Items	3	0	0	0	0
Total Infrastructure Hours				6	2	2	1
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0.0	EA	49	0	0	0	0
Total Structure Hours				0	0	0	0
Grand Total Maintenance Hours							
				128	100	20	8

Washington Street Boat Landing

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	0.0	ˆ SF	36	0	0	0	0
P2 - Mortar Set Inlay Paving	0.0	MSF	12	0	0	0	0
P3 - Dry-Laid Paving	0.0	MSF	14	0	0	0	0
P4 - Boardwalk	1.3	MSF	6.1	8	4	4	0
Total Paved Area Hours				8	4	4	0
Planting							
PL1 - Trees	0.0	20 Trees	12	0	0	0	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	0.0	MSF	20.0	0	0	0	0
PL4 - Groundcover Planting Areas	0.0	MSF	12	0	0	0	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	0	EA	11.2	0	0	0	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				0	0	0	0
Furnishing & Site Amenities							
F1 - Furnishing	0.9	10 Items	15	14	12	2	0
F2 - Moveable Furnishing	0.0	10 Items	46	0	0	0	0
F3 - Trash & Recycling	1	EA	27	27	27	0	0
F4 - Railing, Fencing & Screens	1.9	50 LF	6	12	10	0	1
F5 - Planter Walls	0.0	CLF	8	0	0	0	0
F6 - Signage and Wayfinding	0.2	10 Items	36	7	7	0	0
F7 - Artwork & Sculpture	0.0	EA	13	0	0	0	0
Total Furn. & Site Amen. Hours				59	56	2	1
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	0.0	MSF	10	0	0	0	0
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	0.1	MSF	10	1	1	1	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	0.0	10 Items	5	0	0	0	0
I7 - Pedestrian Lighting	0.7	10 Items	3	2	1	1	0
Total Infrastructure Hours				3	1	2	0
Structures/Building Spaces							
S1 - Glass/Metal Structures	1	EA	16	16	0	12	4
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	1	EA	205	205	199	0	6
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	1	EA	49	25	5	0	20
Total Structure Hours				245	203	12	30
Grand Total Maintenance Hours							
				316	264	20	31

Pier 62/63

Landscape Type	Qty.	Unit	Hrs/Unit	Total Hours	Performed by		
					W-1	W-2	W-3
Paved Areas							
P1 - Asphalt & Concrete Paving	3.2	ˆ SF	36	116	80	11	26
P2 - Mortar Set Inlay Paving	4.5	MSF	12	52	45	2	5
P3 - Dry-Laid Paving	0.0	MSF	14	0	0	0	0
P4 - Boardwalk	32.9	MSF	6.1	200	102	99	0
Total Paved Area Hours				368	227	112	30
Planting							
PL1 - Trees	0.0	20 Trees	12	0	0	0	0
PL2 - Shrubs	0.0	20 Shrubs	11	0	0	0	0
PL3 - Perennial Planting Areas	0.0	MSF	20.0	0	0	0	0
PL4 - Groundcover Planting Areas	0.0	MSF	12	0	0	0	0
PL5 - Vine Planting along Screen	0.0	CLF	10	0	0	0	0
PL6 - Habitat Beach	0	EA	73	0	0	0	0
PL7 - Bioretention Cells	0	EA	11.2	0	0	0	0
PL8 - Lawn Areas	0.0	MSF	19	0	0	0	0
Total Horticulture Hours				0	0	0	0
Furnishing & Site Amenities							
F1 - Furnishing	1.6	10 Items	15	25	21	3	0
F2 - Moveable Furnishing	5.0	10 Items	46	229	225	3	0
F3 - Trash & Recycling	6	EA	27	160	160	0	0
F4 - Railing, Fencing & Screens	32.8	50 LF	6	200	175	0	25
F5 - Planter Walls	0.0	CLF	8	0	0	0	0
F6 - Signage and Wayfinding	0.8	10 Items	36	29	28	1	0
F7 - Artwork & Sculpture	1.0	EA	13	13	0	10	3
Total Furn. & Site Amen. Hours				655	610	17	28
Play Areas							
PA1 - Sand Play Area	0.0	CSF	33	0	0	0	0
PA2 - Rubber Surface Play Area	0.0	CSF	31	0	0	0	0
Total Play Area Hours				0	0	0	0
Infrastructure							
I1 - Irrigation	0.0	MSF	10	0	0	0	0
I2 - Water Feature	0	EA	431	0	0	0	0
I3 - Site Drainage	6.9	MSF	10	69	42	28	0
I4 - Storm Filter Catchbasins	0.0	EA	4	0	0	0	0
I5 - Catchbasins	0.0	EA	1.5	0	0	0	0
I6 - Pole Lighting	5.0	10 Items	5	25	0	20	5
I7 - Pedestrian Lighting	0.0	10 Items	3	0	0	0	0
Total Infrastructure Hours				94	42	48	5
Structures/Building Spaces							
S1 - Glass/Metal Structures	0	EA	16	0	0	0	0
S2 - Concrete Structures	0	EA	9	0	0	0	0
S3 - Maintenance Facilities	0	EA	32	0	0	0	0
S4 - Restrooms	0	EA	205	0	0	0	0
S5 - Restrooms (Attended)	0	EA	3,778	0	0	0	0
S6 - Elevators	0	EA	169	0	0	0	0
S7 - Building Maintenance	0	EA	49	0	0	0	0
Total Structure Hours				0	0	0	0
Grand Total Maintenance Hours							
				1,118	878	177	63

APPENDIX D

SAFETY AND SECURITY CASE STUDIES



In order to inform and guide recommendations for security operations and management of the Waterfront and to gain an understanding of current security efforts by existing organizations, ETM reached out to three prominent Seattle landmarks as well as Seattle Parks and Recreation (SPR). Olympic Sculpture Park, Pike Place Market, Seattle Center, and SPR have provided detailed information regarding staffing resources, technology & operating information as a baseline of understanding. It should be noted that the case study properties distinctly differ from the Waterfront as they are well defined spaces that can be “closed” in the evenings. The Waterfront will face additional challenges associated with the public right of way. Although different, the following case studies do offer valuable insights into safety and security issues, solutions and resources that are rooted in long-standing local perspectives.

CASE STUDY - PIKE PLACE MARKET

Pike Place Market is an historic public marketplace with 240+ businesses and 400+ residents (primarily low-income seniors). Thousands of visitors stroll daily through the nine-acre community of farmers, artisans, butchers, specialty food artists, musicians and others. With approximately ten million visitors each year, Pike Place Market has become an exceptionally busy Seattle landmark. Due to its mixed-use commercial and residential properties, Pike Place Market is viewed as an active community neighborhood in Downtown Seattle with myriad indoor and outdoor public and private spaces.

Pike Place Market is managed 24/7 by a staff of 21 in-house security personnel assigned to one of three shifts (up to seven officers per shift). An additional seven to eight off-duty SPD officers assist for six to seven hours per weekend. SPD are viewed as a key component of the security strategy as they provide a strong uniformed presence with full enforcement authority. CCTV cameras are utilized throughout the Market and staff to actively monitor the cameras to proactively address enforcement issues. A guard tour system is also employed to monitor the security staff and, more importantly, maintain a patrol log in the event of a complaint from Market residents or visitors.

Typical recurring issues at the market involve intoxicant use in public restrooms, theft, and homeless individuals who settle along streets and alcoves throughout the Market campus. Market staff aggressively enforce the Sit and Lie ordinance throughout the campus and actively patrol the alcoves and sidewalks to dissuade vagrancy. The use of illegal intoxicants in public bathrooms is an issue and staff often patrol bathrooms to identify and remove any persons using illegal substances.

Buskers are a common sight throughout the Market and well defined busker protocols are clearly posted on the Market website which define the need for a busker permit and protocols for when and where to perform. This creates a sense of ownership and community among the performers which further adds to the safety and security of the Market.

SECURITY OPERATION AND MANAGEMENT	PIKE PLACE MARKET
In-House Security	21 Full-Time
Contracted Security Services	Special Events Only
Seattle Police Department	7 - 8 Off-Duty Officers 6 - 7 HRS/Week
Ambassadors	NO
Daily Staffing/Shift Cycles	7 Officers/3 Shifts
Guard Tour Systems	YES Proxi-Pens
CCTV Cameras	YES
Active Monitoring CCTV	YES
Emergency Call Boxes/Towers	YES - Alarms for Staff Only
Annual Security Cost/Budget	\$1.3 - \$1.4 Million
Patrol Method	By foot and Bicycles
Security Staff Facilities	YES

CASE STUDY - OLYMPIC SCULPTURE PARK (SEATTLE ART MUSEUM)

The Olympic Sculpture Park is a 9 acre public sculpture garden along the waterfront in downtown Seattle. Historically, it was the last undeveloped waterfront parcel before it opened in January 2007, as a waterfront park. Since opening in 2007, it has become an award-winning public space utilizing a proactive approach to provide security and safety all year-round.

The Sculpture Park is located just south of Myrtle Edwards Park, and the property is described by the Director of Security as a having relatively few safety and security “issues” as the property is located just outside of the downtown core. Typical issues associated with Seattle downtown public spaces are present; including vagrancy, drug and alcohol abuse, and other small enforcement issues that mostly carry over from Myrtle Edwards Park. Most daytime enforcement issues are limited to things such as off-leash pets, “art touches”, and graffiti.

The Park is an open perimeter public space; however, the upper portion is closed in the evenings a park security staff to enforce a no trespassing policy from sunset to sunrise. The lower portion of the park is part of a waterfront bike trail which does remain open 24/7. A perimeter laser sensor is in place to assist security staff in maintaining a secure perimeter during evening hours. This system alerts staff when the perimeter is breached and a system of 29 CCTV cameras are used in conjunction to monitor and assess whether security staff should be deployed. A guard tour system was employed in the first few years of operation; however, staffing levels were reduced due to budget cutbacks and a regular evening property patrol was not feasible with limited staffing. The Park does not utilize emergency call boxes on the property, yet the Director of Security would like to install one at the lower park near the beach as this area remains open 24 hours and some incidents have occurred here in the past. An additional security camera is also being contemplated in this area.

All security personnel (officers) are provided through a contracted service with approximately 12 dedicated officers covering a 24/7 presence of 3-8 hour shifts. A minimum of two officers and one supervisor are always on staff with one additional officers brought in during the summer months to support increased visitation. Both small and large events are held at the Park and additional contracted staff as well as uniformed off-duty police are deployed to monitor entry points and patrol. Seattle Police do occasionally patrol the Park and the Metropolitan Improvement District does provide some cleaning and homeless population interaction support, although on a limited basis. A successful program of volunteer Ambassadors is also utilized during daytime hours to inform visitors of the Park sculptures and enforcing the “no touch” policy.

Incident report records indicate a seasonal increase during the summer months with notable rises in homeless interactions, drug and alcohol use, as well as trespassing. Security staff are very proactive in their approach to dealing with enforcement issues actively attempt to move along any rule violators without escalating the situation or involving SPD.

SECURITY OPERATION AND MANAGEMENT	OLYMPIC SCULPTURE PARK
In-House Security	NO
Contracted Security Services	YES; Baseline Security and Special Events
Seattle Police Department	4 Off-Duty Officers Special Events Only
Ambassadors	YES; Volunteers
Daily Staffing/Shift Cycles	1 Supervisor; 2 Officers/3 Shifts
Guard Tour Systems	YES (only in first years of operation)
CCTV Cameras	YES
Active Monitoring CCTV	YES
Emergency Call Boxes/Towers	NO
Annual Security Cost/Budget	\$640,000
Patrol Method	By Foot and Bicycles
Security Staff Facilities	YES

CASE STUDY - SEATTLE CENTER

Seattle Center, a 74-acre city hub, hosts approximately 5,000 events and activities related to arts, education, entertainment, and recreation annually. These events, which are held in both indoor and outdoor venues, bring in approximately 12 million visitors. Of the total area, 24 acres of public parkland are distributed amid 32 restaurants, shops, museums and other attractions.

As a city property, the Seattle Center is staffed with an in-house force of 17 full-time, two part-time, and six on-call certified union employees on a 24/7, three-shift rotation. In addition to the full-time staff, any programmed events or activities are supplemented by a contracted event security staffing firm or the Seattle Police Department.

Typical safety and security issues at the Seattle Center involve graffiti, public use of intoxicants, car theft and break-ins, and first aid response. Homeless populations do frequent the Center campus during operating hours, and are asked to vacate the property between the hours of midnight and 6:00 AM in accordance with City public space ordinances. Homeless persons generally abide by the ordinance and exit the property without the need for intervention by security staff.

A number of CCTV cameras throughout the campus are actively monitored by security staff and emergency call boxes are located in two of the three campus parking garages. An additional emergency call box is planned for installation in the third parking garage.

Seattle Center also employs a dedicated graffiti response team that addresses any graffiti or vandalism within 24 hours of detection. This simple measure ensures the campus is essentially free of graffiti, which provides visitors with the sense of a clean, safe environment and acts as a deterrent to any further graffiti.

A high-priority future initiative for the Seattle Center is to retrofit all existing signage with clearly stated emergency phone numbers to provide a direct line in the event of an emergency which will decrease response times and ultimately increase public safety. All in-house security staff are annually certified as first aid responders. The Seattle Center also utilizes a several different modes of transit, including bicycles and Segways.

SECURITY OPERATION AND MANAGEMENT	SEATTLE CENTER
In-House Security	17 Full-Time 2 Part-Time 6 On-Call
Contracted Security Services	Special Events Only
Seattle Police Department	On/Off-Duty Special Events Only
Ambassadors	NO
Daily Staffing/Shift Cycles	5 Officers/2 Shifts; 2 Officers/Graveyard Shift
Guard Tour Systems	NO
CCTV Cameras	YES
Active Monitoring CCTV	YES
Emergency Call Boxes/Towers	YES - Only in Parking Garages
Annual Security Cost/Budget	\$1.9 Million (95% Personnel Cost)
Patrol Method	By foot; 3 Bicycles; 2 Segways; 1 SUV
Security Staff Facilities	YES

Security Program Case Study Summary

SECURITY OPERATION AND MANAGEMENT	OLYMPIC SCULPTURE PARK	PIKE PLACE MARKET	SEATTLE CENTER
In-House Security	NO	21 Full-Time	17 Full-Time 2 Part-Time 6 On-Call
Contracted Security Services	YES; Baseline Security and Special Events	Special Events Only	Special Events Only
Seattle Police Department	4 Off-Duty Officers Special Events Only	7 - 8 Off-Duty Officers 6 - 7 HRS/Week	On/Off-Duty Special Events Only
Ambassadors	YES; Volunteers	NO	NO
Daily Staffing/Shift Cycles	1 Supervisor; 2 Officers/3 Shifts	7 Officers/3 Shifts	5 Officers/2 Shifts; 2 Officers/Graveyard Shift
Guard Tour Systems	YES (only in first years of operation)	YES Proxi-Pens	NO
CCTV Cameras	YES	YES	YES
Active Monitoring CCTV	YES	YES	YES
Emergency Call Boxes/Towers	NO	YES - Alarms for Staff Only	YES - Only in Parking Garages
Annual Security Cost/Budget	\$640,000	\$1.3 - \$1.4 Million	\$1.9 Million (95% Personnel Cost)
Patrol Method	By Foot and Bicycles	By Foot and Bicycles	By Foot; 3 Bicycles; 2 Segways; 1 SUV
Security Staff Facilities	YES	YES	YES

CASE STUDY - SEATTLE PARKS AND RECREATION DOWNTOWN PARKS

Conversations with Victoria Schoenberg, Center City Parks Manager also provided valuable insight into safety and security issues and efforts in downtown parks; specifically Westlake Park, Victor Steinbrueck Park, and Occidental Park. These parks near the Waterfront experience quite a bit of use, both good and bad. Although actively used by locals and tourists, significant antisocial behavior occurs within these parks including illegal drug use and transaction.

Baseline security for these parks is primarily provided through SPR Rangers and supplemented by SPD as well as resources provided through the Metropolitan Improvement District. Enforcement of park rules and regulations as well as city ordinances is an ongoing effort throughout downtown parks. Rangers are primarily responsible for enforcement and their powers are limited to issuing warnings and they cannot forcibly remove violators. Park Rangers work a typical 9-5 shift which, unfortunately do not allow them to monitor parks in the evenings. Rangers will typically support maintenance staff in the mornings.

Typically, SPD will be called in to deal with any issue that a Ranger may not be able to resolve. Rangers do have police radios and can directly contact SPD when needed. One issue is that often SPD officers are not aware of the exact procedures associated with the Parks Trespass Program. A recent initiative to provide downtown police officers with specific park enforcement procedures has helped to facilitate enforcement. The specific Parks Trespass Program procedures have been included as an appendix of this report.

In 2006, the Seattle Parks and Recreation Department began activating many areas throughout downtown, following the recommendations of a task force. Parks, working with various community partners, made good progress for several years and then began to experience less success as external forces began to change. Recently, the Downtown Seattle Association, Metropolitan Improvement District has dramatically stepped up its involvement and its investment. Efforts include funding a children's play space in Westlake in 2013, more amenities and programs in Westlake in 2014. In 2015, under a one-year agreement, efforts were made to significantly increase activation of both Westlake and Occidental Parks, with many more programs and amenities as well as 24/7 staffing, including overnight security.

Another recent downtown initiative called the "9 1/2 block strategy" included restricting access to alleys commonly used for drug dealing and an increased police presence in a specific 9 1/2 block downtown area in an effort to reduce illegal behavior. The initiative area included Westlake Park and efforts have shown to significantly increase safety, yet the temporary initiative has ended and issues will begin to creep back in. Efforts like this may need to be implemented on a regular cycle to maintain a baseline of safety and security in these areas.

Downtown Seattle parks do struggle with maintaining a safe, crime free environment at all times and efforts to increase programming, staffing, and SPD coordination are an ongoing challenge. Funding is a large factor which limits potential resources.

APPENDIX E

SPR RULES, REGULATIONS & ENFORCEMENT



SEATTLE PARKS AND RECREATION PARKS TRESPASS PROGRAM (NOV. 2014)

WHAT TO DO UNDER THE PARKS TRESPASS PROGRAM? (Follow DP&P 17.115)

If you arrive at this property type...use this Trespass Procedure

- 1) If the suspect is on Parks property in Seattle and violating any provision of the Parks Code (SMC Ch. 18.12), and rule in the Parks Code of Conduct, or any other provision of the Seattle Municipal Code or Revised Code of Washington, issue a Trespass Warning to the Suspect using the Parks Trespass Warning/Exclusion form, keeping a copy for SPD records.
- 2) If unable to identify the Suspect by name, identify the Suspect by description (including known nicknames) and, if possible, take a photograph.
- 3) If the Suspect does not accept a warning form, orally warn the Suspect using the language on the form and document the warning using the form in SPD records.
- 4) Parks Rangers, SPD officers, and others designated by Parks may issue warnings.
- 5) A warning on its own does not exclude a Suspect from the park as long as the Suspect stops violating the law or rules. However, when a Suspect's law or rule violation creates significant risk of personal injury or property damage, the Suspect may be excluded for the remainder of the day, and a one-year exclusion may be issued to a Suspect who commits a felony or a weapons violation. A remainder-of-the day exclusion applies only to the park where the initial violation occurred. A one-year exclusion applies on to the parks within a specific zone.
- 6) If the Suspect, once issued a Trespass Warning, continues to commit violations in the park, the Suspect may be arrested under the Parks Trespass Program for Criminal Trespass. - Follow DP&P 17.115.
- 7) If a Suspect has previously received a Trespass Warning at any park and subsequently commits any violation in a park, the Suspect may be arrested Parks Trespass Program for Criminal Trespass. - Follow DP&P 17.115. Trespass Warnings apply to all parks and do not expire.
- 8) Attach the original Trespass Warning Form as evidence to send to the Law Department with your GO and give completed NEW Trespass Warning Form to precinct's CPT administrative assistant (Jane Mensoff) to be entered into RMS. Notify the Precinct Liaison Attorney of any arrest for trespass in a park. - Follow DP&P 17.115.

Parks Code SMC 18.12 prohibits:

- | | | | |
|------------------|--|-----------------|--|
| • SMC 18.12.070b | Removing, destroying, or defacing park property | • SMC 18.12.149 | Firearms |
| • SMC 18.12.070c | Placing in a park any structure or obstruction without a permit | • SMC 18.12.150 | Soliciting, except as specifically provided by law |
| • SMC 18.12.080 | Dogs or other pets that are not leashed and licensed; owner must carry and use equipment for removing feces. | • SMC 18.12.160 | Sale of merchandise without a permit |
| • SMC 18.12.145 | Urinating or defecating | • SMC 18.12.170 | Amplified sound without a permit |
| | | • SMC 18.12.250 | Camping |
| | | • SMC 18.12.257 | Liquor (open or closed container) |
| | | • SMC 18.12.260 | Littering |
| | | • RCW 9.46 | Illegal gambling |

Parks Code of Conduct (Superintendent's Administrative Rule, enforceable under SMC 18.12.040)

- | | |
|---|---|
| • Abusive or harassing behavior, including obscene language or gestures | • Leaving packages, backpacks, luggage, or other personal items unattended while the owner is not in the same area of the park |
| • Presence in the park without a permit when the park is not open to the public | • Blocking entrances, exits, fire exits, handicap access areas, public walkways, or roadways, or obstructing pedestrian traffic or otherwise interfering with the provision of services or the use of park property |
| • Conduct that creates an unreasonable and substantial risk of harm to any person or property (i.e. dangerous activity) | • Disrupting Dept. of Parks and Recreation business, events, or other sponsored activities. |
| • Conduct that unreasonable deprives others of their use or enjoyment of the park or park facility | • Creating unsanitary conditions or health hazards that violate public health rules of Seattle and King County |
| • Smoking, chewing or other tobacco use within 24 feet of other park patrons and in play areas, beaches, or playgrounds | |

Question: Contact your Precinct Liaison Attorney - Dave Lavelle {David.lavelle@seattle.gov} or (206) 386-4084