



# CREATING STRONG COMMUNITIES THROUGH HEALTHY FORESTS

2017 STRATEGIC PLAN UPDATE



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## EXECUTIVE SUMMARY

Nearly twelve years ago, the Green Seattle Partnership (GSP) set out to complete what was, at the time, the largest urban forest restoration effort of its kind in the nation. Now more than halfway through our initial strategic plan, over 1,300 acres of Seattle's forests are well on their way to being restored to verdant, valuable and beneficial spaces for our communities to enjoy.

The focus of the next several years will be enrolling the remaining acres of Seattle's forested parklands in restoration efforts, protecting our investment by transitioning restored sites to long-term maintenance, and setting ourselves up to expand the benefits of the program's reach beyond park boundaries in the future. To ensure GSP's success, we must engage with local communities to inspire new partnerships and funding sources. We must excite and empower residents to take ownership of forested parklands in their neighborhoods, to strengthen their sense of community and connection to nature. Although we currently have an impressive volunteer base, we will continue to build upon that with a focus on engaging even more youth as our future forest restoration leaders, and on underrepresented communities work being done is represented by those who live there.

# PROGRESS SINCE 2005

## OUR VISION

Seattle is a livable city with healthy urban forests supported by an aware and engaged community.

## OUR GOALS

**1** Restore and maintain the forested parklands and designated natural areas of Seattle.

**2** Expand and galvanize an informed, involved, and active community around forest restoration and stewardship.

OUR PROGRESS



**51%** of total acres enrolled in restoration (half of the 2,500 acres of Seattle forested parklands and other designated natural areas have been enrolled in restoration; 1,273 acres remains to restore)

**7%** of established acres transitioned into ongoing maintenance (2,309 acres still need to transition into Phase 4)

**51%** of funding acquired to enroll all 2,500 acres by 2025

**39%** of funding acquired to have all 2,500 acres actively maintained by 2030



**85** schools have been engaged in restoration and education activities

**879,752** volunteer hours have been invested toward forest restoration and stewardship

**28%** of volunteer hours have been completed by youth

**354** Forest Stewards have been recruited and trained since the Partnership began; there are 161 active Stewards



# OUR STRATEGIC PRIORITIES

Restoring and maintaining Seattle’s forested parklands is no small feat; it requires a significant investment of time and resources to accomplish. With the support of an informed, organized, motivated and diverse community base, additional funding, dedicated partners, and the support of the City, GSP will have the resources require our goals and keep Seattle parklands resilient well into the future.



## RESTORATION & MAINTENANCE WORK

GSP improves the health of our urban forests by restoring them to more sustainable natural areas that contribute to a cleaner environment, improved wildlife habitat, and reduced stormwater runoff and erosion.

### OUR CHALLENGES

Stewardship of the urban forest is a process that never ends. Forested parklands require active stewardship and innovative ideas to respond to the re-invasion of weed species, impacts of human and pet use, climate impacts, and other environmental changes. Additionally, many of the restoration areas yet to be enrolled have difficult or complex conditions that require professional expertise and additional resources.

### OUR FOCUS

We will need to adapt our forest restoration practices to better serve the urban environment in the face of social and environmental challenges, and secure the resources needed to tackle more complex sites.

As acres of forest proceed through the phases of restoration, GSP will develop a program for the long-term, ongoing maintenance and monitoring of restored sites to ensure these forests stay on a healthy trajectory and safeguard many years’ worth of public investment.

Using the monitoring results to inform the innovative ideas mentioned above will help to drive adaptive and improved management moving forward.



## COMMUNITY ENGAGEMENT

GSP strengthens communities in Seattle by creating places and opportunities for people to come together in healthy ways to enjoy nature in the heart of our dense urban environment.

### OUR CHALLENGES

Many residents are not aware of GSP, why it is important, or why they should participate - yet without community support and action, the future of Seattle’s forested parklands remains uncertain. Those who understand the importance of our mission need to be supported and empowered in their leadership roles, to build trust and maximize the effectiveness and satisfaction with each contribution.

### OUR FOCUS

Developing public awareness and cultivating advocates around restoration through targeted outreach and volunteer recruitment is crucial to our success. Equally important is volunteer support and retention founded on open communication, respect, and ongoing educational opportunities.

Engagement efforts need to be tailored to keep the program relevant to each community’s unique context and needs, and to grow a volunteer base representative of the wide range of ages, ethnicities, and interests of the communities in which restoration work is done.

We will continue to engage a younger demographic to transfer local and established knowledge to the next generation of leaders.



## RESOURCE ACQUISITION

GSP will continue to advocate for the resources needed to accomplish the program’s goals through City of Seattle funding, empowered resident advocates, and leveraged partnerships.

### OUR CHALLENGES

To protect the investment made in GSP sites, substantial financial and volunteer resources are needed. Funding will be necessary to improve and secure the health of our forests, expand partnerships, and recruit large, diverse volunteer groups. The program currently receives funding from the Seattle Park District. Due to the complex nature and competing interests of this funding source, securing those necessary funds is an ongoing and significant challenge.

### OUR FOCUS

We have secured 60% of the funding needed for restoration. GSP will need to secure additional funding for active restoration, long-term stewardship and maintenance efforts, monitoring, marketing, youth and diversity outreach, and building staffing capacity.

Forging new public/private partnerships is a vital component of our resource acquisition efforts. Every leveraged dollar allows our program to stretch further, helping to extend the program’s reach and ensure the long-term sustainability of the City’s urban forests.

# INTRODUCTION

The purpose of this Strategic Plan Update is to evaluate the state of Seattle's forested parklands since GSP began in 2005, and provide an updated plan toward the achievement of our goals. Working closely with GSP staff, this document outlines how the program has evolved since inception, celebrates GSP's successes, and begins to establish a plan for reaching 2025 and beyond. This document identifies areas of opportunity, outlines how we will achieve our vision and goals, and rallies the support of our communities for our forested parklands beyond 2025.

The Strategic Plan Update process was designed to be inclusive of the vast team of stakeholders that make us successful. It began with an informal survey of the GSP committee members and Forest Stewards. Public involvement included presentations to various City of Seattle Boards and Commissions related to the Green Seattle Partnership, and community meetings and a survey to solicit public feedback.

This Strategic Plan Update is intended to be a living document that will continue to grow and be refined annually as circumstances evolve; it represents our best efforts to articulate a clear set of strategic priorities, outcomes, and activities that will guide our decision making and help GSP focus on the opportunities and challenges ahead.



## ORIGINAL PLAN

GSP's original 20-year Strategic Plan identified 2,500 acres of Seattle's forested parklands for restoration. The acreage represented in this Strategic Plan Update accounts for the additional land acquired by Seattle Parks and Recreation since 2005, as well as areas where GSP has expanded restoration efforts since its inception. We are currently updating our mapping and acreage data to reflect these additions, so the total acreage existing within GSP zones may in fact be higher than reported. The known acreage affects any data analysis and resulting numbers reported in this document; as our acreage and mapping data is refined, we will update and report our most accurate information on an annual basis.

# BACKGROUND

## WHO WE ARE

The Green Seattle Partnership (GSP) is a unique public/private venture dedicated to promoting a livable city by re-establishing and maintaining a healthy urban forest. Founded in 2004 through a Memorandum of Understanding between Forterra and the City of Seattle, GSP is now managed by the Natural Resources Unit of Seattle Parks and Recreation, with additional support provided by Seattle's Office of Sustainability and Environment, Seattle Public Utilities, Forterra, other partner organizations, neighborhood groups and individual volunteers.

## THE SHAPE OF OUR FORESTS

With the arrival of the Puget Sound region's early settlers came significant logging and landscape alterations that impacted local ecosystems, making it difficult for Seattle's native forests to sustain themselves. By the early 1980s, it became clear that human activities were impacting the health and longevity of the trees and natural areas in Seattle. A citywide habitat assessment in 2001 confirmed that many forested parklands were inundated with invasive plants, choking out the tree seedlings needed to sustain a healthy forest. In 2005, a study using citywide habitat data found that invasive plants accounted for at least 50 percent of the understory cover in Seattle's forested acres. English holly and cherry laurel comprised over half of all the regenerating trees in Seattle's forested parklands; invasive species such as English ivy and clematis posed a particular threat, as the added weight of these climbing vines can cause mature trees to fall over, especially during high winds. Forest health was in decline.

By the time Green Seattle Partnership was established in 2005, what remained were remnants of fragmented forest where some trees were reaching the end of their lives with little to no intermediate-aged or new trees present to create a future forest. Seattle's forested parklands were host to enough English ivy to cover 630 football fields, and 900 football fields of Himalayan blackberry. Many of Seattle's forested parklands were not recognizable as park properties, often mistaken as neglected private property as the aggressive growth of these species out-paced the existing level of stewardship to control them.

GSP's work began with field data collection and spatial analysis to help staff and partners understand the complete picture of urban forest conditions, then develop a work plan which was presented to the Mayor and City Council. This work plan became the original 20-Year Strategic Plan for Green Seattle Partnership, and has been the guiding document for GSP efforts to date.

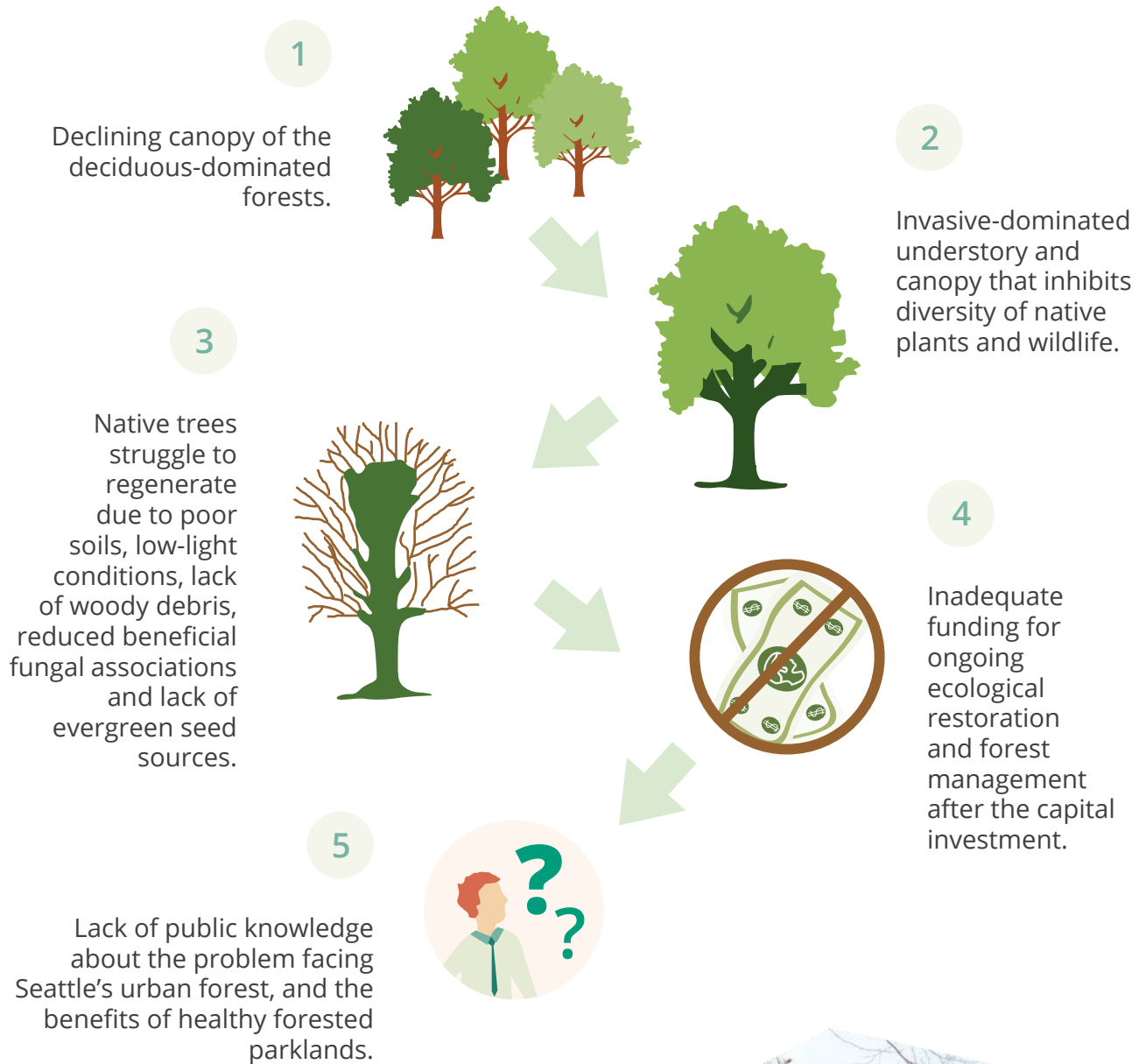


## OUR ORIGINS

In 2004, then-Mayor Greg Nickels asked Forterra (formerly Cascade Land Conservancy) to partner with the City to help bring Seattle's forested parklands back to health. At the time, Forterra was in the process of creating the Cascade Agenda, a 100-year vision for the Puget Sound Region that offers a balanced approach to conservation and community building, encouraging collaboration across all sectors considering environmental, social, and economic need. A Memorandum of Understanding was signed between the two entities and GSP was born. A working group was created to develop a 20-Year Strategic Plan and establish goals and objectives needed to achieve their vision. Forterra raised \$3 million in funds during the first five years of the Partnership to support the development of the program and initial accomplishments. This initial jumpstart was matched with public funding as the Partnership proceeded in subsequent years.

## WHY OUR FORESTS CAN'T SUSTAIN THEMSELVES

Forested parklands require continued stewardship to respond to the re-invasion of weed species, impacts of human use, climate change, and other unforeseeable events. There are five basic problems that prevent Seattle's forested parklands from sustaining themselves as a healthy native forest:





# STRUCTURE AND GOVERNANCE

## HOW THE PROGRAM HAS EVOLVED SINCE ITS INCEPTION

With the creation of GSP, residents, partners, and City staff began to bring the stewardship of the forested natural areas under a more cohesive program. Once limited to a few parks by individual Parks staff and community members, the effort has grown to encompass active restoration in over 136 parks. Not only limited to a community-powered endeavor, the increase in public funding, leveraged with partner resources, has allowed GSP to expand its work with professional staff working into steeper and wetter Environmentally Critical Areas in need of restoration.

### OVERSIGHT AND MANAGEMENT

Seattle Parks and Recreation (SPR), a department within the City's government, serves as the principal organization in the Partnership, leveraging expertise, guidance, and manpower from hundreds of volunteers, other municipal departments, partner organizations, and ecology experts. As a City agency, SPR involvement includes program management by staff, as well as governance and guidance from the City's elected officials. SPR's GSP staff leads the restoration effort to restore our forested parklands and build community through hands-on volunteerism.

The Mayor and City Council determine the annual GSP budget principally from Seattle Park District and Real Estate Excise Tax (REET) funding, approve major changes to the program, and ensure GSP is operating within City guidelines for meeting goals, such as the goals of the Race and Social Justice Initiative. The SPR Superintendent's office receives information from the program's advisory levels, and works with the Mayor's office and City Council to inform and guide these high-level decisions.

### PARTNER ORGANIZATIONS

Partner organizations offer different recruitment opportunities across their networks. Professionally-led work parties are organized by partner organizations such as EarthCorps and Nature Consortium to support GSP work plans. Through their mailing lists, advertisements, social media presence, and partnerships with private businesses, local service organizations and schools, they have the resources to organize work parties that are typically larger than those organized by GSP's Forest Stewards. GSP partners also provide other types of volunteer support and education. For example, the Washington Native Plant Society (WNPS) provides native plant trainings to Forest Stewards and residents, and Seattle Audubon hosts birding walks through GSP sites. Other partners such as Student Conservation Association, Goodwill, and YMCA Earth Service Corps help develop the next generation of leaders in restoration through their existing youth programming.



## WHO IT TAKES TO DO THE WORK

### OUR VOLUNTEERS

The largest number of hours spent restoring GSP sites are donated by volunteers. Since GSP's inception, more than 879,752 volunteer hours have helped restore Seattle's forested parklands. It is the dedication of these volunteers and organizations that have made Green Seattle Partnership a success.

- GSP offers volunteer events almost every day of the year, ranging in size from just a few people to well over 100. All volunteer events have leaders present to ensure volunteers are engaged, time is used effectively and the work is being done correctly.
- Forest Stewards are lead volunteers trained in GSP restoration activities and community engagement. They serve as key contacts for GSP, coordinating with our staff to develop site restoration plans and annual goals, and coordinating volunteer forest restoration events and activities.
- Volunteers can also be led by GSP partner organizations. These professionally-led events are often targeted in parks where there is not an active Forest Steward.

### THE DUTIES OF AN ACTIVE FOREST STEWARD INCLUDE:



Coordinating with GSP staff to develop annual restoration work plans for their site(s).



Serving as the key contact at their park for the Green Seattle Partnership.



Training and mentoring volunteers and other Forest Stewards on GSP Best Management Practices.



Planning and coordinating volunteer forest restoration events and activities in their park's GSP area.



Managing events and material requests, sign-in sheets, and work logs.



Attending training events for ongoing personal development.

### OUR PROFESSIONAL CREWS

Many forested parklands are restored by a combination of different professional groups. For example, SPR employs Natural Area Crews (NACs) to accomplish the more technical work and provides significant logistical support for volunteers. Similarly, Parks District staff provide local input, as well as tool and mulch deliveries to volunteers, while the Heavy Equipment Crew delivers large quantities of mulch for restoration projects, the Tree Crew assesses and tends to problem trees in restoration areas, and projects are frequently coordinated with the Trails Program. Where additional support is needed, SPR contracts with several professional contractors to supply crews that complete large-scale restoration projects or work on sites that require more technical expertise.



## GSP IMPLEMENTATION TEAM

The GSP implementation team is made up of staff from SPR and Forterra. It is led by SPR's GSP Planning and Development Supervisor, and includes SPR's Plant Ecologists and NAC Leads as well as Forterra's Green Cities Program Manager. The team focuses on the daily operations of the program, including volunteer management and professional crew project management, as well as details involved in the program's implementation – annual planning, budget tracking, contract coordination, data management, ecological assessment, public education and outreach, and progress reporting.

## GSP COMMITTEES

The committees are made up of representatives from partner organizations, Forest Stewards, and at-large members actively involved in GSP implementation.

### FIELD COMMITTEE

The GSP Field Committee works to advance the goals of GSP by developing and updating Best Management Practices (BMPs) based on current science, local field experience, and industry expertise. The Field Committee also contributes to the continued development and implementation of monitoring and inventory protocols, work tracking, training needs, and research priorities.

### PUBLIC ENGAGEMENT & TRAINING COMMITTEE

GSP's Education Committee and Public Engagement Committee joined together in early 2016, and advises GSP on public outreach, volunteer engagement, and school and youth involvement. Special attention is given to inclusive engagement and leadership development best practices to support new partnerships to sustain restoration efforts.

## GSP MANAGEMENT TEAM

The Management Team is a group of staff members from the departments and primary organizations that manage the program. This team acts as liaison between GSP staff and Executive Council, and helps ensure adequate resources and support for GSP activities. Additional activities of the Management Team include supporting and informing the Executive Council of issues, updates, and progress of the program, developing annual work plans, supporting implementation teams, and general oversight of federal grant goals and restrictions.

## GSP EXECUTIVE COUNCIL

The Executive Council (EC) is a group made up of staff from the City of Seattle and Forterra as well as implementation and strategic partners and community representatives, that advocates and provides strategic direction for the program. Executive Council members advocate for the program both as a group and individually by engaging with elected officials, program partners, and program shareholders, to maintain the program's momentum and continued progress. They also provide strategic direction for GSP, work closely with the Management Team in setting up the framework and objectives, and actively engage the community through their own organizations and constituencies and their participation in GSP events.

# THE BENEFITS OF OUR WORK

Seattle Parks and Recreation's Performance Measures work towards several ultimate outcomes, including healthy environment, healthy people and strong communities. The work we do aligns with and complements the City's work towards achieving these outcomes, benefiting the communities in which we work and the people who live there for generations to come.



## HEALTHY ENVIRONMENT

Seattle Parks and Recreation owns 6,410 acres of land throughout the city. Of these, 2,500 acres contain urban forest and will be restored through the Green Seattle Partnership. Forested parklands account for roughly 5% of Seattle's total land area, making the City of Seattle Parks and Recreation Department the largest single owner of forested property in the City. These areas are unique among Seattle Parks and Recreation properties due to their high percent of canopy cover, type of use, and distinctive natural ecosystems. While a developed park may contain sports fields, playgrounds and open spaces for recreation, forested parklands are accessed mainly through trails and are intended for more passive recreational use.

Before 2005, diverse natural areas free of invasive plants were scarce in Seattle. Through the elimination of aggressive invasive species, replanting of native plants, and the ongoing maintenance from GSP's dedicated partners and volunteers, Seattle's forested parklands will once again provide diverse species that provides robust benefits and ecological functions for future generations to enjoy.

## BENEFITS OF THE URBAN FOREST



**Cleaner Air** – Leaves (including needles) absorb pollutants such as nitrogen dioxide, sulfur dioxide, carbon monoxide, and some particulates. Trees capture soot and other pollutants from the air, resulting in cleaner air and reduced incidences of asthma and other respiratory ailments.



**Cleaner Water** – Pacific Northwest forests are effective at cleaning and filtering water. In addition to absorbing nutrients, tree roots can also absorb some pollutants, metabolize them, and then sequester them in woody tissue.



**Reduced Stormwater Impacts** – Permeable forest floors allow precipitation to infiltrate and recharge groundwater. Root systems uptake water through plant tissue, releasing it as vapor into the air. This water would otherwise flow off impervious surfaces into storm drains and water treatment facilities.



**Reduced Erosion** – Tree and shrub canopies dissipate the energy of falling precipitation before it hits the ground, reducing the potential energy to displace soil particles. As trees mature, decaying organic leaf matter, or duff, that accumulates on the forest floor increases in relation to tree and shrub growth. This duff enriches the soil below making it more effective at infiltrating water. Healthy forested areas only appreciate over time.



**Improved Wildlife Habitat** – Wild animals have unique requirements for food and shelter. Raccoons and crows adapt well to the urban environment, but many native species don't. They require a variety of plants and multiple layers of canopy to forage and nest. Rebuilding the forest with native plants and a more complex structure improves wildlife habitat in Seattle.



**Mitigated Climate Change Impacts** – Trees absorb greenhouse gases such as carbon dioxide and store carbon in their woody tissue. Additionally, they provide shade and reduce the sun's reflectivity on the earth's surface. Evapotranspiration by leaves further cools the surrounding environment. These effects combine to reduce the urban heat island effect and produce cooler temperatures in the urban forest on hot days compared with the surrounding city.

## ADVANCING URBAN ECOLOGICAL RESTORATION

GSP's work continues to be driven by the best available science and current policies. As urban forest restoration is a relatively young practice, GSP has had to build many of its own Best Management Practices (BMPs) to effectively complete field work and maintain a consistent quality of work across all GSP sites. On a broad scale, learning and innovation occurs at restoration sites every day, the results of which are captured in formal documents like the Forest Steward Field Guide and GSP Work Specifications for professional crews. One can see GSP's adaptation of BMPs in parks where methods like the 'ivy roll' and the 'compost windrow' have been applied.

GSP also supports academic research from colleges and universities. Research plays a vital component in keeping GSP effective; it leads to the development and refinement of BMPs, advancement of urban forest ecology, increases in labor effectiveness, observational knowledge transfer and higher quality results. See the Appendix for published and unpublished research related to and informing the work of GSP.



## HEALTHY PEOPLE

The 2015 census estimates that Seattle now has over 662,000 people living within the City limits, and that the metropolitan area is home to more than 3.5 million people - more than half of Washington's population. How Seattle absorbs and manages this growth will determine how the City prospers and continues to maintain a high quality of life.

## ATTRACTIVE COMMUNITIES

Seattle earned the nickname "The Emerald City" because of the enchanting green of its hills and shorelines. Soaring Douglas-firs, mighty red cedars, and stately big leaf maples are a part of the heritage and appeal of the City. Forested parks, tree-lined boulevards, and woody neighborhoods spark wonder, fuel the imagination, and improve the quality of life for all of us. The trees and other plants are an iconic part of our collective culture and experience, benefiting communities by providing visual relief from the built environment, buffering sound, increasing property values, offering free places to recreate and exercise, and increasing community cohesion by providing social capital. Research has also shown parks, trails, and recreational amenities are key ingredients to attracting talent and distinguishing a city as a good place to live.

## ACCESS TO NATURE

Our urban forest contributes to a higher quality of life through a cleaner environment, reduced stormwater runoff and erosion, and the ability to enjoy nature close at hand. GSP offers opportunities for people to gather, work together and celebrate. People experience urban forests through active restoration, creating a deep connection with the natural environment, proven to improve both the mental and physical health of our volunteers and, by association, the communities around GSP sites.



## STRONG COMMUNITIES

Seattle's forested parklands are on a healthy trajectory to benefit its communities. Beyond restoration, GSP will leave a legacy of positive change, reducing barriers for underrepresented and underserved communities to access the programs and parks. This sets the stage to benefit local communities for generations to come.

### EDUCATION & JOB TRAINING

GSP has strong education and training components, such as job training programs for those interested in making careers in the field of restoration, internships, and volunteer training in Best Management Practices for urban forest restoration.

### YOUTH ENGAGEMENT

Bringing students into one of Seattle's green spaces allows youth and educators to enter the ultimate outdoor classroom. Research has shown the developmental and leadership-building benefits of getting kids (and everyone else) outdoors, and GSP is pleased to play a part in making the forest an accessible place to steward, play, and learn by offering school curricula and youth engagement activities.

### EMPOWERED PEOPLE

GSP strives to provide quality programs that meet changing interests and needs of the community. Our ability to empower an active volunteer base helps strengthen the City's sense of community and connection to nature. Identifying and working with community leaders in underrepresented communities helps to ensure no person, community, or group is excluded from the benefits of restored forested parklands.

### ECONOMIC BENEFITS

Restoration efforts help to preserve and reclaim park property for public use and benefit, which makes the parks safe and welcoming. Beyond the host of environmental and health benefits urban forests provide, Seattle's park system contributes to job creation and training, makes communities more appealing to live in, and has significant economic value associated with revenue created, cost savings to the City, wealth-increasing factors for residents, and cost-saving factors for residents.





# STRATEGIC PLAN

Nearly twelve years ago, the Green Seattle Partnership (GSP) set out to complete what was, at the time, the largest urban forest restoration effort of its kind in the nation. Now more than halfway through our initial 20-year strategic plan, more than 1,300 acres of Seattle's forests are well on their way to being restored to verdant, valuable and beneficial spaces for our communities to enjoy.

# OUR FOCUS FOR THE NEXT 10 YEARS

The focus of the next several years will be enrolling the remaining acres of Seattle’s forested parklands in restoration efforts, protecting our investment by transitioning restored sites to long-term maintenance, and setting ourselves up to expand the benefits of the program’s reach beyond park boundaries in the future. To ensure our success, GSP must engage with local communities to inspire new partnerships and funding sources. We must excite and empower residents to take ownership of forested parklands in their neighborhoods in order to strengthen their sense of community and connection to nature. Although we currently have an impressive volunteer base, we will continue to build upon that with a focus on engaging even more youth as our future forest restoration leaders, and on underrepresented communities to ensure the work being done is represented by those who live there.

## OUR VISION

Contribute to a livable city by ensuring healthy urban forests in Seattle.

## OUR GOALS

1 Restore and maintain the forested parklands and designated natural areas of Seattle.

2 Expand and galvanize an informed, involved, and active community around forest restoration and stewardship.

OUR PROGRESS



**51%** of the 2,500 acres of Seattle forested parklands and other designated natural areas have been enrolled in restoration. We will continue to set an example for what urban forest restoration means as we enroll the remaining 1,273 acres into restoration, and start transitioning enrolled sites to the final phase of restoration: long-term stewardship and maintenance.



**879K** volunteer hours have been donated by the city’s residents through volunteer events. We will continue to improve our community outreach efforts to engage a broader, more diverse audience representative of Seattle’s communities, thereby developing awareness and advocacy around the benefits of healthy urban forests.



## A FUTURE BEYOND RESTORATION

Continued stewardship is required to protect our initial investment and address the impacts of environmental change and the pressures on our natural areas associated with a growing urban population. In GSP sites where there is measurable progress towards building a healthy forest, stewardship efforts will start to look a little different. GSP uses a four-phase approach to restoration, with the final phase being Phase 4: Long-term Stewardship and Maintenance. Whereas the first three phases require annual management activities, many Phase IV sites are expected to be on a 5-year management cycle, where sweeps for re-populating weeds, plant establishment issues, or other concerns will be documented and addressed. Other Phase 4 sites will require inspection and intervention far more frequently.

However, the forest doesn't stop at park boundaries. Although it is beyond our current funding, program scope and timeline, securing the resources to work across public property boundaries and with willing private landowners will help protect the deep investment we've made.





## RESTORATION & MAINTENANCE

Keeping our urban forest healthy contributes to a higher quality of life for residents through a cleaner environment, reduced stormwater runoff and erosion, and the ability to enjoy nature close to home. Major restoration activities in the forested parklands are forecasted to end in 2030, but as acres transition into long-term stewardship and maintenance (Phase 4), we will still have work to do removing returning invasive plants, addressing human impacts, and managing the effects of a changing climate to ensure ecosystem health.

## OUR GOAL

Restore and maintain the forested parklands and designated natural areas of Seattle.

## ACCOMPLISHMENTS TO DATE

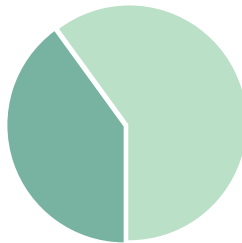
Since the inception of GSP, volunteers, project partners and professional staff have conducted restoration activities in over 136 parks. GSP works in a variety of parks, big and small, on land that is predominantly forested natural area or planned for reforestation. The vast majority of the program's resources are invested directly into moving zones through the phases of restoration. One can find a volunteer event or professional crew working almost every day of the year.

GSP staff have continued to define metrics for restoration success. Annual inventory of the active restoration sites helps us capture data on aspects such as tree canopy and species diversity. Data for each zone is then compared to data from healthy forests, called "target ecosystems", to assess restoration progress. This process helps us understand what is left to do in a given area, identify trends citywide, and consider funding needs. In simple terms, the following attributes make for a healthy forest: a canopy of conifers, madrones or oaks + a diversity of new native trees and understory plants + almost zero weed coverage + low numbers of weed trees growing.



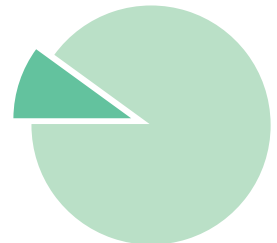
**51%**

of total acres enrolled  
in restoration



**38%**

of total acres of steep slopes within  
GSP sites enrolled in restoration



**7%**

of established acres  
transitioned into ongoing  
maintenance

**2,393**

total acres remaining to transition into  
long-term, ongoing maintenance

**1,273**

total acres remaining to  
enroll in restoration



## BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) are methods or techniques that have consistently shown results superior to those achieved with other means, and are used as benchmarks, guides, and specifications. BMPs also provide information about regulations specifying work practices for compliance with government regulatory agencies, and may evolve as new information presents itself.

Green Seattle Partnership has contributed to improved BMPs for a myriad of topics, many of which are captured in the Forest Steward Field Guide, used closely for training Forest Stewards and as a reference for external organizations interested in understanding how we approach our work. Recent updates to the Field Guide include best practices to reduce impacts on breeding birds during restoration activities, as well as improvements to our methods for working in and near wetlands. Updates are shared regionally with the Green Cities Network, and nationally as part of presentations at conferences and through direct contact with cities doing similar work. For example, the New York City Natural Areas Conservancy has visited with Seattle Parks staff to understand and adapt the Tree-riage model for prioritizing restoration, and the Target Ecosystem process for determining reference ecosystems in urban areas.

## PROJECT SUCCESSES

### MAGNUSON PARK

Warren G. Magnuson Park is Seattle's second largest park, occupying much of the former site of Naval Air Station Sand Point. After a large portion of the Navy's land was given to the City of Seattle and the National Oceanic and Atmospheric Administration (NOAA) in 1975, the City's portion was opened as Warren G. Magnuson Park. Habitat restoration activity began in an organized fashion when The Starflower Foundation selected part of the park as one of their first restoration projects in the late 1990s. Starflower continued expanding their restoration site for several years, and the Wetlands Restoration project which followed created a set of mounds, plateaus, valleys and ponds to channel water more effectively and improve drainage of oversaturated areas. This constructed wetland provides natural filtration of urban drainage water, reducing pollution in Lake Washington.

Many groups and individuals have contributed to bringing it to the current condition as a premier natural habitat resource for our region, and the Green Seattle Partnership is now the leader in continuing its improvement. Since 2005, GSP efforts have implemented restoration on drier, less accessible natural areas with the Park, and the original Starflower site has been dramatically expanded with clearing and replanting to the west. Leading the way on volunteer restoration activity has been Forest Steward Tom Kelly who has planned and led several volunteer projects per month since the 1990s. Also making an immeasurable contribution to habitat restoration in the Park is the volunteer group MESA (Magnuson Environmental Stewardship Alliance), who began their Stewardship work in 1994 focusing on the Promontory Point area. Magnuson Park is also home to EarthCorps, who has worked on numerous GSP projects within the Park, and the University of Washington Restoration Ecology Network (UWREN) program has returned for several years to restore prairie woodlands in the center of the Park.



## WEST DUWAMISH GREENBELT: SOUNDWAY

In the 1950s, the City of Seattle purchased vacant properties for the Soundway project, with the intent to build a highway bridge that would connect West Seattle to Vashon Island. For a variety of reasons, the project did not come to fruition and neighbors advocated to add those properties to the West Duwamish Greenbelt in order to preserve the wetlands, steep slopes and wildlife habitat they contain. The Soundway became Nature Consortium's first project area in 2003, and this Delridge non-profit group has hosted frequent restoration events ever since. After years of hard lobbying for acquisition funds, the City of Seattle finally designated Soundway as a public park in early 2011. In partnership with Nature Consortium, Seattle Parks used the \$500,000 earmarked by the State of Washington for preservation of the Soundway property for restoration and enhancement of trails with thousands of hours of volunteer and professional crew time. The outcome of the time, energy and funds invested in the Soundway illustrates how a galvanized public can make the magic happen. Today, GSP continues to extend restoration into the deeper reaches of the West Duwamish Greenbelt from the heart of the Soundway.

## SEWARD PARK

Located on Bailey Peninsula in Lake Washington, Seward Park is recognized as one of Seattle's last remaining stands of old growth forest. It is home to record-setting trees, nesting bald eagles, and a dynamic and diverse forest understory. People flock to the park to enjoy the beaches, hiking trails, wildlife-viewing, and educational opportunities provided at the Seward Park Audubon Center. As an important community asset, the health of the forest is intimately related to the health and well-being of the neighborhood and the city. In 2008, a generous private donation boosted restoration in the park, providing a focused effort to reduce the abundance and impact of invasive plants, while planting the next generation forest. Since the inception of the Seward Park Reforestation Project, the park has seen 35,000 hours of volunteer service, an additional 20,000 hours of professional restoration support, and nearly 95,000 plants installed.

1

### INVASIVE PLANT REMOVAL

Phase 1 focuses on removing invasive plant for the first time. In areas with high invasive cover or especially difficult species, it may take more than one year to complete initial invasive removal.



2

### SECONDARY INVASIVE REMOVAL AND PLANTING

Phase 2 requires follow-up invasive plant removal (weeding), as well as planting native trees, shrubs, and groundcovers.



4

### LONG-TERM STEWARDSHIP AND MAINTENANCE

Phase 4 is the final phase, long-term stewardship and maintenance. Volunteers and professional crews will sweep restored areas on a three to five-year cycle, looking for new populations of invasive plants, social use impacts, and other ecosystem health indicators. GSP zones only move into Phase 4 after a verification process by Parks' Plant Ecologists that ensures the full zone is on a trajectory towards target ecosystem goals.

3

### PLANT ESTABLISHMENT

Phase 3 repeats invasive removal on a regular basis and focuses on native plant establishment. As needed, sites are weeded, mulched, and watered. Sites generally stay in Phase 3 for five years; regular monitoring and evaluation of establishment success is conducted by Parks' Plant Ecologists.



## ANALYSIS OF WORK THAT REMAINS

### NEEDS AND CHALLENGES

To date, GSP has enrolled an average of 123 acres per year since the program's inception. The original plan estimated that an average of 125 acres would need to be enrolled in restoration annually to meet the plan's goal by 2025. While the total acres enrolled remains nearly on track, the acres that have progressed to long-term restoration and maintenance (Phase 4) have fallen behind.

As acres transition through enrollment and establishment, additional funding sources are needed to support the long-term stewardship and maintenance of GSP sites. If the current funding level continues, it is anticipated that all 2,500 acres of forested parkland will be enrolled in restoration by 2025. Following enrollment and establishment, it is projected that all GSP sites could transition into long-term ongoing maintenance by 2030. This is longer than originally anticipated. The extended timeline is attributed to a lack of resources for long-term establishment, longer than anticipated establishment periods for many GSP sites, and diminished volunteer participation rates.

	CURRENT ACRES ENROLLED	ANNUAL ACREAGE NEEDED TO ACCOMPLISH PROGRAM GOALS BY 2025
PHASE 1-3: INVASIVE PLANT REMOVAL THROUGH PLANT ESTABLISHMENT	1,309	141
PHASE 4: LONG-TERM STEWARDSHIP AND MAINTENANCE	190	171

### A FUTURE BEYOND RESTORATION

Continued stewardship is required to keep our parklands free of invasive species and protected from the impacts of climate change and human development. Beyond our current funding, timeline and scope, we want to secure the resources needed to extend the program's reach beyond the park boundary to adjacent public and private lands. Extending our reach into neighboring properties will bring us closer to achieving our overarching goal, protect the deep investment we've made, and ensure our restored forested parklands can thrive well into the future.



## PRIORITIZATION OF RESTORATION SITES

GSP originally balanced high-priority ecological sites, forests with fish-bearing streams along with those sites that had existing volunteer support. Ten years into the restoration process, site prioritization has become much more nuanced, but is influenced by factors such as access, site conditions, visibility, proximity to schools, and the equitable distribution of dollars spent on GSP sites across the city.

## OUR PATH FORWARD

### OBJECTIVES

**1** Enroll 2,500 acres of Seattle’s forested parklands in restoration by 2025.

**2** Ensure all restored parklands in Seattle transition into long-term stewardship & maintenance by 2030.

SUB OBJECTIVES	STRATEGIES
<p>Enroll an average of <b>141 new acres</b> in active restoration annually through 2025</p>	<ul style="list-style-type: none"> <li><b>A.</b> Increase number of sites with volunteer projects</li> <li><b>B.</b> Increase contracted acres on sites not suitable for volunteer activity</li> <li><b>C.</b> Continue to improve and expand data collection and analysis efforts to drive restoration planning, capture/communicate successes, and contribute to local and national urban forestry research efforts</li> </ul>
<p>Further Seattle’s Race and Social Justice Initiative by ensuring <b>75% of parks</b> where work is completed each year are in priority communities, until all acres in priority communities are enrolled</p>	<ul style="list-style-type: none"> <li><b>D.</b> Increase number of restoration sites within priority communities</li> <li><b>E.</b> Increase community engagement in priority communities</li> </ul>
<p>Add a minimum of <b>171 acres</b> into long-term stewardship and maintenance (Phase IV) each year</p>	<ul style="list-style-type: none"> <li><b>F.</b> Develop additional Best Management Practices (BMPs) to address environmental and social challenges</li> <li><b>G.</b> Develop long-term stewardship and maintenance workplan for restoration sites that meet Phase IV performance criteria, including defining the roles of GSP and Parks Resource District crews</li> <li><b>H.</b> Engage GSP partners to support a transition to long-term maintenance (Phase IV)</li> </ul>



## COMMUNITY ENGAGEMENT

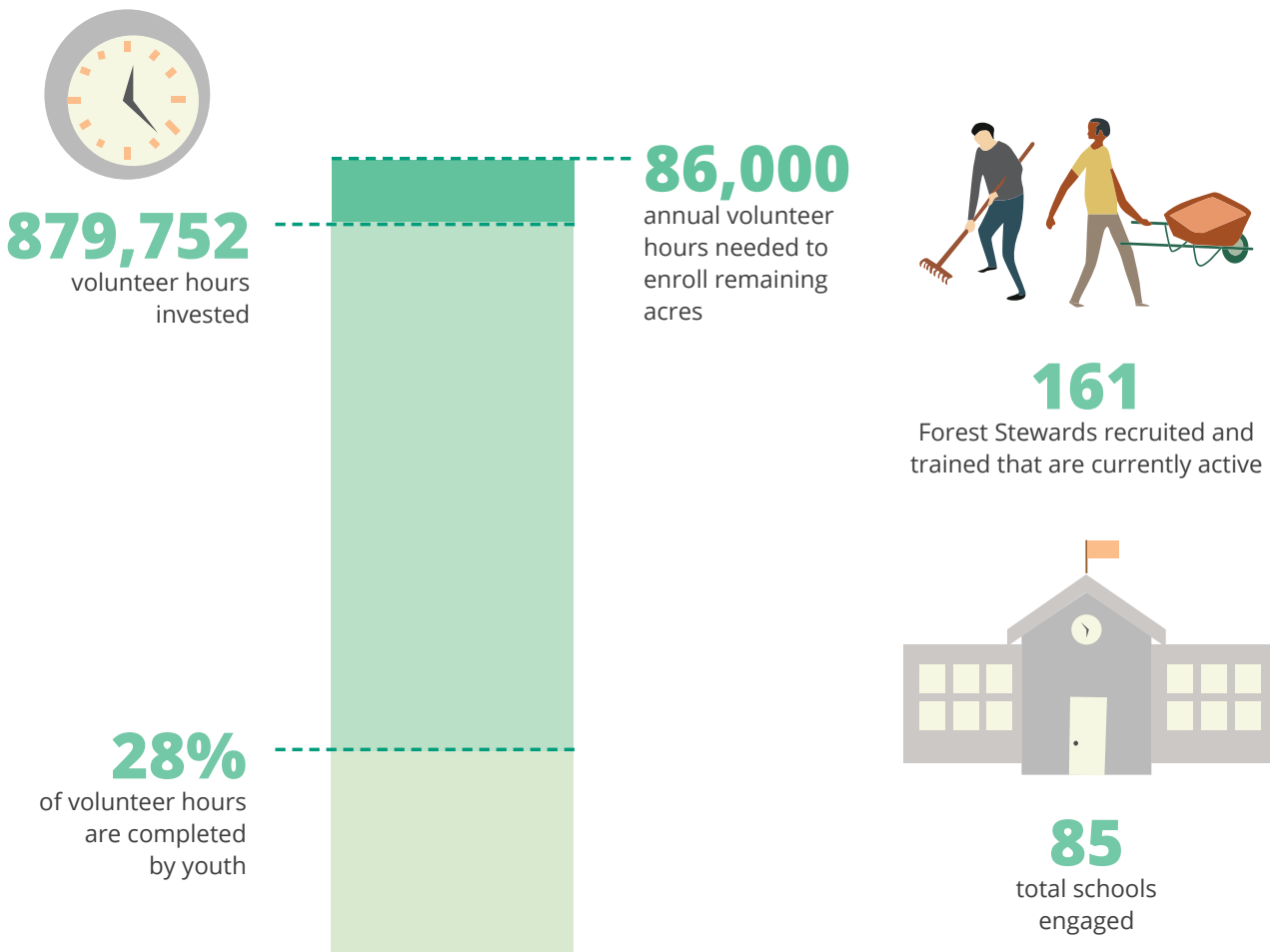
One of the most important elements for the success of the Green Seattle Partnership is an educated and engaged community. The value of an engaged community goes far beyond the restored acres of Seattle's forested parklands; an informed, involved and active community plays an important role as volunteers, as voters, and as partners in the maintenance of Seattle's forested parklands for generations to come.

## OUR GOAL

Expand and galvanize an informed, involved, and active community around forest restoration and stewardship.

## ACCOMPLISHMENTS TO DATE

The Green Seattle Partnership includes thousands of community volunteers who work tirelessly to restore, maintain and educate the public about Seattle's forested parklands. Volunteers are typically recruited through three sources: word of mouth, direct recruitment through GSP staff, or through partner organizations.



## FOREST STEWARD RECRUITMENT

Forest Stewards are dedicated volunteers who have been trained by GSP staff and partner organizations to implement work plans within their designated parks. Forest Stewards provide great benefit to the Partnership by accomplishing restoration within their designated sites as well as through additional outreach to and education of community members, which are engaged through their efforts. To date, GSP has recruited and trained 354 Forest Stewards. Recruitment and management of the roster of Stewards is an ongoing process - some Stewards become inactive due to an inability to remain engaged in the program, and new Stewards are recruited into the program on an annual basis. Currently, there are 161 active Forest Stewards.



## YOUTH ENGAGEMENT

Our engagement of youth, from toddler years through college, will have a large and lasting impact on the stewardship and health of Seattle's forested parklands. Engaging youth populations, especially those in their early teens through mid-twenties, is increasingly important as current Forest Stewards enter retirement and may no longer have the physical ability to continue in their current roles. The great wealth of information possessed by GSP's current Forest Stewards needs to be transferred to our next generation of leaders, to continue the restoration work to which others have devoted so much time and passion.

## URBAN FORESTRY PROJECT

A highlight of our youth engagement efforts is the Urban Forestry Project (UFP). The UFP provides an opportunity to make the connection between academic learning and the real world. By combining on-the-ground forest restoration and monitoring efforts with curriculum and classroom activities, students learn how to improve local forest habitats and engage with on-the-ground science.

The K-12 program is flexible, based on school demands and available resources, and connects hands-on projects in the parks to learning standards. Teachers may use it to support STEM-based projects, history or social studies, science teams, and more. Educators who participate in the Urban Forest Project are trained on the comprehensive field and classroom-based curriculum which leads to the restoration of a local park near their school.

While the UFP program has had huge success where it has been implemented, there have been roadblocks to increasing the number of participating schools. Challenges have included getting buy-in from schools, a lack of collaborative planning, the distance of schools to GSP sites, the cost and time needed to roll out field-based learning, GSP staff capacity, and champions within each school to promote and publicize the program.

## SCHOOL ENGAGEMENT

The greatest connection between GSP restoration and local schools occurs through the work of our partner organizations and individual Forest Stewards. Organizations such as Nature Consortium, EarthCorps, Seattle Tilth, and Seward Park Audubon have robust outreach programs to recruit and lead local school groups in restoration activities throughout the school year. Many Forest Stewards have also cultivated personal relationships with teachers and parent groups at nearby schools and have engaged them as ongoing partners in their neighborhood GSP sites.

## JOB SKILLS & TEEN PROGRAMMING

A significant percentage of GSP field work is performed by partners who recruit, train, and lead young adults to perform and succeed in the business of urban forest restoration. EarthCorps, Student Conservation Association, Goodwill, Washington Conservation Corps, and YMCA Earth Service Corps are all active as GSP partners. These programs provide introductory field work skills and progress to include more technical forest management and volunteer management opportunities.



## HOW YOU CAN HELP

As GSP works towards greater implementation, current Forest Stewards, volunteers, and partner organizations can help now by working with local schools to assist with the implementation process. Ways to help could include urging schools to include UFP programming, volunteering as chaperones and teacher field aids, coordinating travel logistics to GSP sites, and fundraising for field-based learning experiences.



## ANALYSIS OF WORK THAT REMAINS

### FOREST STEWARD RECRUITMENT AND RETENTION

Since the first cohort in 2005, GSP has achieved a 47% Forest Steward retention rate. To enroll all remaining acres in active restoration, it is estimated that we will need to recruit an additional 25 new Forest Stewards each year. Succession is an issue of great concern for older Forest Stewards; new recruits are needed to fill the roles being left by those who are physically no longer able to fulfill the duties of an active Forest Steward.

There are 75 parks currently outlined for GSP restoration work in need of the community stewardship presence of volunteer Forest Stewards. Many of these parks are large, requiring more than one forest steward, and 46 of these parks currently have no Forest Steward presence at all. Excluding steep slope and wetland areas, there is potential for volunteers to work across 740 acres in these parks. Current lack of Forest Steward presence is attributed to the challenge of physical access to certain locations, a lack of public knowledge about the program, and low neighborhood engagement due to a lack of staff capacity for outreach and recruitment. If GSP is not able to foster a community presence in these parks, work must be supplemented with professional crews to reach program benchmarks.

### THE CHANGING ROLE OF VOLUNTEERS

As Seattle's forested parklands are brought into Phase 4 status, the program will need to continue in a new capacity. The composition of GSP staff, relationships with partner organizations, and what GSP asks of volunteers may all change as sites transfer to long-term stewardship and maintenance. Where volunteer hours are a key metric in measuring community engagement now, the number of hours needed for long-term maintenance will be reduced. As sites mature, invasive plant re-infestation is expected to slow down, and weeding work parties will be smaller and less frequent. New plantings will be reduced, and the need to thin areas that may have been over-planted could arise. Finally, volunteers will need to be trained in the more detailed monitoring work that is part of Phase 4, looking for damage from off-trail use or severe weather impacts, plant vigor and diversity conditions, and invasive plant reemergence.

## NEEDS AND CHALLENGES

### FOREST STEWARD SUPPORT

The foundation of the Green Seattle Partnership – and the reason behind its success – is the coordinated application of resources between Forest Stewards, program partner organizations, contractors and consultants, Seattle Parks and Recreation maintenance and recreation staff, and the Parks GSP program staff. The careful selection, training and support of Forest Stewards by the Plant Ecologists allows the Forest Stewards to exercise more autonomy than is typical in other volunteer programs.

For Plant Ecologists, the work required to manage contractors and consultants, manage ongoing monitoring and mapping work, and develop and update program practices competes with the time needed to support Forest Stewards to help maximize their effectiveness. As the number of Forest Stewards and restoration sites has increased, the relationship between these volunteers and Plant Ecologists has been spread thin. With more time to devote to specific sites, Plant Ecologists could work more closely with Forest Stewards to develop more detailed and comprehensive work plans, resulting in increased productivity across the program. Consistent staffing of the program moving forward will help this happen.



## RETENTION/APPRECIATION ACTIVITIES

While thousands of volunteers dedicate time and energy to GSP every year, one of the largest challenges to the volunteer program is how to recruit new volunteers while also keeping a cadre of experienced volunteers engaged. Everyone's motivations for making the first step to volunteer are different. While work improving the urban forest underlies almost all GSP events, people also come out to enjoy the community connections, time spent with family and friends, and the rewards of giving back. These personal connections are what drive people to return multiple times. Repeat volunteers account for 15-20% of volunteer hours dedicated to GSP every year.

People return to donate time and energy to the restoration effort when they feel noticed, valued, and useful. In the past few years, GSP staff has spent increasing amount of time training Forest Stewards on best practices for recruitment, outreach and engagement to complement the suite of skills people may already have in field BMPs. Positive social interactions between casual volunteers and GSP staff and Forest Stewards help grow a core group of people that are needed to steward the forests for the next generation. GSP must continue to allocate budget to appreciation activities and rewards as well as create new pathways to engagement at a programmatic level in order to stay relevant in people's lives.

## EDUCATION OUTREACH TO PRIVATE PROPERTY OWNERS

Much of the City's forested parklands are bordered by private properties, many of which have invasive plant infestations that, if left untreated, jeopardize the success of restoration efforts on the City's property. Providing outreach to educate private property owners about forest restoration and engaging them in cooperative restoration efforts where appropriate are necessary additional steps toward preventing the reinvasion of non-native plant species.

## INCREASING DIVERSITY

Seattle's Race and Social Justice Initiative (RSJI) aims to ensure racial equity in City programs and services to make tangible differences in people's lives, while increasing participation of underrepresented communities within the GSP program has become a larger focus in recent years. Utilizing resources provided by the RSJI, GSP staff will continue to work to ensure no person, community, or group is excluded from participation or receiving the benefits of restored forested parklands.

Establishing greater racial and ethnic diversity among volunteers and Forest Stewards within Seattle's forested parklands is a significant objective moving forward. GSP will continue to work with Seattle Parks and Recreation and GSP partner organizations, as well as race and social justice specialists within various City departments to develop strategies for engaging new audiences. Ultimately, the goal is to match the demographics of the Forest Stewards, and eventually all volunteers, to those of the individual communities where volunteers operate.



## OUR PATH FORWARD

### OBJECTIVE

Increase the average number of volunteer hours to 86,000 annually through 2025.

SUB OBJECTIVES	STRATEGIES
<b>Ensure 25%</b> of total annual volunteer hours are completed by youth	<ul style="list-style-type: none"><li>A. Increase number of events that target youth involvement</li><li>B. Involve schools in restoration activities at adjacent GSP sites</li><li>C. Support youth involvement through incentives and recognition for volunteering</li></ul>
<b>Ensure volunteer hours completed by people of color</b> are proportionate to Seattle's demographics (35% as of 2016)	<ul style="list-style-type: none"><li>D. Hold community events to increase volunteerism and advocacy among people of color</li><li>E. Utilize RSJI Toolkit to develop marketing campaigns targeted at attracting new volunteers</li><li>F. Develop leadership roles for people of color</li></ul>
<b>Ensure 20% of volunteer hours</b> are Forest Stewards annually	<ul style="list-style-type: none"><li>G. Identify and acknowledge the most active volunteers to cultivate future Forest Stewards and leaders</li><li>H. Provide training and development opportunities for Forest Stewards</li><li>I. Develop a succession plan to ensure existing knowledge is transferred from current Forest Stewards and GSP staff, and developed to fill each needed role</li><li>J. Identify new roles for Forest Stewards to accommodate a variety of abilities and interests</li><li>K. Increase recognition opportunities for Forest Stewards</li></ul>
<b>Ensure every park</b> in the City with forested parklands (where conditions allow) has some volunteer activity	<ul style="list-style-type: none"><li>L. Increase staff to improve volunteer recruitment, support, and customer service</li><li>M. Increase public awareness of GSP, including its vision, benefits, and opportunities to participate</li><li>N. Broaden the reach of current and future marketing and engagement efforts through multiple media sources and methods</li></ul>
<b>Maintain and strengthen the current number</b> of partnerships with community organizations	<ul style="list-style-type: none"><li>O. Increase coordination and communication among GSP partners, volunteers, Forest Stewards and staff to maximize results</li><li>P. Increase partnership opportunities across Parks programs</li><li>Q. Increase partner organization recognition</li></ul>





## RESOURCE ACQUISITION

While GSP is partially funded through voter-approved resources identified under the Seattle Parks District (SPD), there is not currently a dedicated source of funding to support the long-term stewardship and maintenance of GSP sites. Although GSP gains excellent leverage on dollars spent from volunteer activities, partner organizations, and Forest Steward fundraising efforts, the Partnership will need to secure and allocate additional resources to protect the significant investment made to improve Seattle's forested parklands.

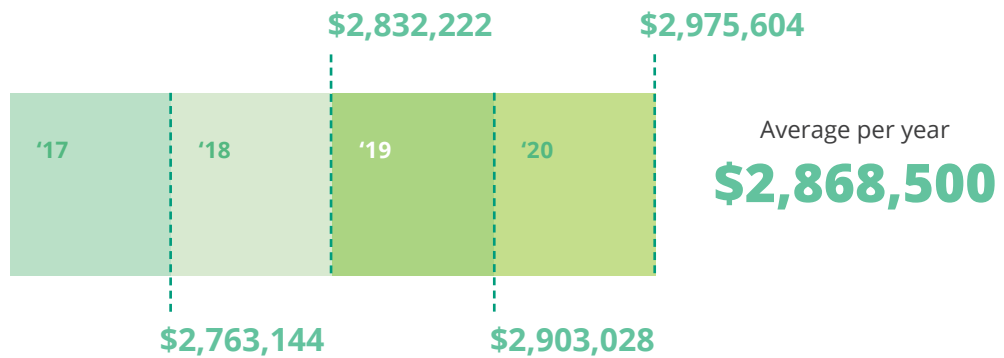
## ACCOMPLISHMENTS TO DATE

GSP utilizes funds and resources from several sources to accomplish its goals, including funds from the City and Park District and funding from additional sources. The success in building this resource support is a testament to the Partnership’s strength in numbers. Additional sources include local, regional, and national grant funding coordinated by non-profit partners as well as individual volunteers. In 2010, Forterra and the City received significant support from the USDA Forest Service to advance vital GSP projects such as the development of CEDAR, the Forest Monitoring Team Program, and the Forest Steward Field Guide. GSP also garners incredible leverage on dollars spent; from 2005 to 2013, SPR spent roughly \$14.8 million for program efforts, while an estimated \$23 million was contributed by partner organizations and volunteer labor.

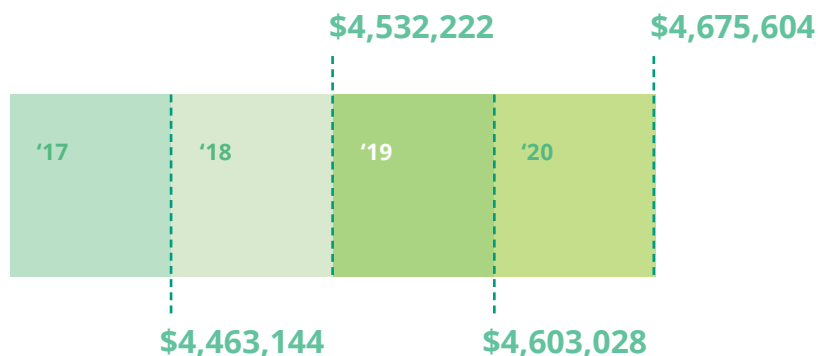
## CURRENT FUNDING

In addition to grants and other contributions that fluctuate annually, there are two primary sources of funding for the program:

- 1 **Real Estate Excise Tax (REET)** - The level of this funding is determined biannually. For the budget years 2017 and 2018, the amount of REET designated for GSP is \$1,700,000 each year. The program expects that REET funding will remain the same in the 2019-2020 biennium.
  
- 2 **Seattle Park District Funds** - Funding runs on a 6-year cycle, with the current cycle ending in 2020. The next four years’ funding commitment from the District is currently known:



**Total** annual REET and Park District funding for the next four years:



## ANALYSIS OF WORK THAT REMAINS

If the current level of Park District funding continues into the next six-year cycle and REET funding continues at its current level, the program will have funding sufficient to achieve our goals through 2025, when all acres are expected to be enrolled in restoration.

Between 2025 and 2030, all acres remaining in Phases 2 and 3 would transition into Phase 4. An estimated 855 acres will be remaining at that time, and other program components will continue; these will need to be funded.

Lower funding in the early years of the program and inconsistent program staffing has resulted in a situation where we now need to complete higher numbers of acres per year than has been accomplished thus far to meet the program goals. For example, we now need to accomplish 141 acres of Phase 1 restoration each year to ensure that all acres are enrolled by 2025. The table below outlines estimates for some of the remaining one-time and ongoing work to be done through 2025 and the funding needs associated with that work.

ACTIVITY	FUNDING NEEDED TO ACHIEVE OUR GOALS
Enroll remaining acres in active restoration (1,273 acres)	<b>\$19,095,000</b>
Move remaining acres into Phase 4 (the 1,120 acres currently in Phase 2 and 3 plus the 1,273 acres that are yet to be enrolled)	<b>\$11,965,000</b>
Maintain the acres that are in Phase 4 through the years 2017-2025	<b>\$1,963,000</b>
Expand GSP activities beyond park boundaries	<b>\$4,350,000</b>
Manage program (costs outside of direct acre costs, but necessary to achieve acreage success)	<b>\$5,700,700</b>
<b>Total funding needed 2017-2025</b>	<b>\$43,073,700</b>
<b>Average annual funding needed 2017-2025</b>	<b>\$4,786,000</b>



## TIMELINE

The funding requirements presented here are based on a fully-funded program, where GSP will enroll all 2,500 acres in restoration by 2025. After enrollment, all GSP sites would transition into long-term stewardship and maintenance by 2030. Alternative funding scenarios will influence the timeline for this program; if insufficient funds are available for keeping up the pace of enrollment and establishment, all acres may not be enrolled by 2025 and all establishment may not be complete by 2030.

## NEEDS AND CHALLENGES

### STAFFING CAPACITY

To support GSP's activities and still maintain a high level of service, GSP will need to build its capacity to bring on new staff members. Current staff are spread thin, with many taking on multiple roles and tasks outside of their specific areas of expertise. For example, GSP's Plant Ecologists currently take on the responsibilities of data analyst, community engagement coordinator, restoration ecologist and grant writer. While they have performed exceptionally, this restricts their availability to perform essential or core duties. A dedicated staff position is also needed to support general outreach and education about GSP, active recruitment of GSP volunteers and Forest Stewards, and the proactive engagement of youth and other communities.

### FINANCIAL CONTRIBUTIONS

Restoring 2,500 acres of forested parklands requires a significant investment of time and resources. Even as the initial enrollment and establishment efforts come to an end, continued stewardship of our forested parklands is a process that never ends. Financially, we need to secure a significant amount of additional funding to support GSP activities now and in the future.

- **Enroll All Remaining Acres:** The cost of enrolling all remaining acres into GSP program is estimated at \$19 million. This equates to an average of \$15,000 per acre, although actual costs can vary widely depending on individual site conditions.
- **Establish All 2,500 Acres:** Establishing all acreage after initial enrollment is expected to cost an additional \$12 million, or \$5,000 per acre.
- **Implement Long-Term Stewardship and Maintenance:** Once all acres have been transitioned to Phase 4 activities, it will cost approximately \$550,000 per year, and take the work of approximately 86,000 volunteer hours annually to adequately maintain all GSP sites.

### PARTNERSHIPS

To ensure our success, GSP must engage with local communities to cultivate new public/private partnerships, which will be a vital component in extending the program's reach and securing the long-term sustainability of Seattle's urban forests. Partner organizations provide invaluable support through recruitment, education, and organizational activities; however, the staff capacity required to manage partnership relations is an ongoing challenge, as is the funding which is often required to retain partner services.

### ADJACENT PUBLIC AND PRIVATE PROPERTY RESTORATION

In addition to public lands that are adjacent to the City's parklands, there are other pockets of urban forest that are private lands. Outreach can be done to these private landowners about the need for restoring their forestlands, but resources will likely need to be available to help facilitate and implement those restoration efforts. Existing resources may be coordinated with Trees for Seattle to start providing those resources, initially focusing on developed right-of-ways adjacent to GSP sites.



## OUR PATH FORWARD

### OBJECTIVE

Secure a total of \$43,073,700 for GSP activities between 2017 and 2025.

SUB OBJECTIVES	STRATEGIES
<p><b>Secure \$19 million in funding</b> to enroll remaining acres in active restoration by 2025</p>	<ul style="list-style-type: none"><li>A. Maintain funding through the Park District, General Fund, and Real Estate Excise Tax (REET) revenue</li><li>B. Actively pursue alternative sources of funding to support restoration work (grants, donations, partnerships, leveraged funding, etc.)</li><li>C. Document GSP performance metrics and report annually</li><li>D. Identify funding and approval for additional staffing</li><li>E. Identify funding for outreach and engagement needs</li></ul>
<p><b>Secure \$1,000 per acre each year</b> in funding for operations and maintenance for all acres that have been moved into long-term stewardship and maintenance</p>	<ul style="list-style-type: none"><li>F. Initiate and facilitate a strategy to engage other City departments in funding forest restoration within their jurisdictions</li><li>G. Identify funding and approval for necessary staffing (this will be needed for long-term maintenance as well as through 2025 as shown above)</li><li>H. Institutionalize GSP into the City's business, to build a sustainable budget</li><li>I. Create an aggressive Urban Forest Fund campaign</li></ul>
<p><b>Secure \$4,350,000 in funding</b> for the expansion of GSP activities beyond park boundaries by 2025</p>	<ul style="list-style-type: none"><li>J. Define and strengthen relationships with GSP partner organizations for education, outreach, and other activities, including new programs to support urban forests beyond 2025</li><li>K. Identify priority partners in the next five years and set meetings to identify barriers to participation, explore funding opportunities including grants, etc.</li><li>L. Work with other City programs, partners and departments to develop policies and interdepartmental agreements to include active restoration of areas directly adjacent to existing GSP sites</li><li>M. Actively pursue alternative sources of funding (grants, donations, partnerships, leveraged funding, etc.)</li></ul>



# USING DATA TO MEET OUR GOALS

## METRICS WE CAPTURE



### RESTORATION & MAINTENANCE

- Acres enrolled in active restoration (Phase 1)
- Number of parks with active restoration
- Acres with active establishment activities (Phase 3)
- Acres enrolled in long-term stewardship and maintenance (Phase 4)
- Number of tree survival rings cut
- Number of trees installed
- Total plants installed
- Total quantity of mulch installed



### COMMUNITY ENGAGEMENT

- Number of active Forest Stewards and hours contributed
- Overall volunteer hours
- Demographics for Forest Stewards and volunteers
- Number of educational opportunities / Forest Steward trainings
- Number of volunteer events
- Number of youth volunteers and hours contributed
- Number of schools engaged in GSP activities
- Number of partner organization



### RESOURCE ACQUISITION

- Total budget and expenses per funding source
- Leveraged dollars from volunteer activities, GSP partner organizations, and Forest Steward fundraising efforts

## REPORTING AND EVALUATION

The formation of the Seattle Parks District (SPD) in 2014 included a key measure to provide another dedicated source of long-term funding for GSP that needs to be renewed every six years. Seattle Parks and Recreation Natural Resources Unit is the steward of this funding, and is responsible for how the portion of the budget committed to GSP is used and accountable for the progress we make toward achieving our goals. GSP will implement an evaluation and reporting approach linked to this six-year funding cycle to help us comply with our funding requirements and ensure our program is as effective as possible.

### REPORTING SCHEDULE

GSP measures progress on its goals annually using metrics reported on a quarterly basis. The quarterly reporting schedule helps us refine and evaluate the effectiveness, costs, and efficiencies of our large-scale restoration and volunteer efforts.

## DATA MANAGEMENT AND ACCESS

GSP prioritizes systematic data collection on ecological conditions, restoration activities, and volunteer contributions. Existing data collection include an annual inventory of active restoration sites, restoration work logging through CEDAR, permanent monitoring plots to measure long-term impacts, and data presented in an interactive online map. GSP will continue to improve and add to these systems in order to increase the program's transparency and integrity, preserve institutional knowledge, and advocate for additional resources to support GSP efforts.



## APPENDIX

# GLOSSARY

TERM OR ABBREVIATION	DESCRIPTION
BMP	Best Management Practice
Canopy Cover	The percent of a forest floor or specific geographic area covered by tree crowns. Assessed using aerial orthophotographs as well as ground-based techniques, it can be calculated for all trees in a given geographic area or specific individual tree species. Canopy cover has been shown to be an important ecological indicator for distinguishing plant and animal habitats as well as assessing on-the-ground conditions in urban areas.
CEDAR	Central Data Repository
Conifers	Cone-bearing trees, most of which are evergreen, with needle or scale-like leaves. Examples include pine, fir, hemlock, and spruce. The dominant conifers found in Kirkland's urban forest include Douglas-fir, western red cedar, and western hemlock.
Constructed Wetland	Artificial wetlands created for the purpose of treating wastewater or stormwater runoff.
Deciduous	A tree or shrub that loses its leaves or needles during the fall and winter months (in contrast to an evergreen plant). Examples found in Puget Sound forests include big leaf maple, red alder, and snowberry.
Ecosystem	The interactive community or relationships of living (biotic) organisms such as plants, animals, and microbes with nonliving (abiotic) components such as air, water, soils, and weather.
Forest Restoration	Actions and management to reestablish or enhance processes that support a healthy forest's structure, ecological functions, and biodiversity levels. Restoration actions may include removal of nonnative invasive plants, applying mulch, and planting native trees, shrubs, and ground cover. In an urban environment, the natural ecological processes may never be fully restored; therefore, forests will need ongoing management with long-term maintenance and monitoring.
GIS	Geographic Information System. A computer program used for visualizing, storing, and analyzing data related to positions on the Earth's surface. The Green City Partnerships use GIS to map and assess land cover, habitat types, and tree canopy. It is also used to track and assess acres enrolled in restoration.
GSP	Green Seattle Partnership
Invasive Plants	Introduced nonnative plant species with traits that allow them to thrive outside their natural range and out-compete native plants. Invasive plants are typically adaptable and aggressive, with high reproductive capacity, and likely to cause economic and/or environmental harm.
Mulch	A protective covering, usually of organic matter such as leaves, straw, bark, or wood chips, placed around plants to prevent weed growth, moisture evaporation, and the freezing of roots. Covering the ground with mulch is a maintenance practice used in urban forest restoration following invasive plant removal and native plant installation.
Natural Areas	Undeveloped parkland with less than 25% tree cover, in contrast to "forested areas," which have more than 25% tree cover.
REET	Real Estate Excise Tax

Runoff	Runoff refers to unfiltered rainwater that reaches nearby water bodies by flowing across impervious surfaces such as roads, parking lots, driveways, roofs, and even compacted soils in landscapes. When the landscape is undeveloped or soils are not compacted, rainwater soaks into forest and meadow soils, where it is filtered by natural processes, slowly feeding into underground aquifers, streams, and lakes. The filtration process removes pollutants such as motor oils, gasoline, fertilizers, and pesticides.
SPD	Seattle Parks District
SPR	Seattle Parks and Recreation
Stormwater Runoff	See 'Runoff.'
Tree Canopy	The uppermost layer of the forest, formed by leaves and branches of dominant tree crowns. The tree canopy forms the forest overstory.
Understory	The vegetation that grows below the forest canopy. Understory plants consist of saplings of canopy trees, together with smaller understory trees, shrubs, and herbs. Examples of understory plants found in Puget Sound forests include vine maple, beaked hazelnut, tall Oregon grape, salal, and sword fern.
Urban Heat Island	The increase in surface and atmospheric temperatures of urbanized landscapes caused by the replacement of vegetation and natural areas with impermeable surfaces such as roads, buildings, and other built infrastructure. Lack of vegetation in the built environment results in elevated energy consumption (due to increased demand for cooling and electricity), an increase in greenhouse gases and air pollutants, water quality impairment (due to the heating of stormwater runoff entering streams and lakes), and human health problems such as respiratory illness, heat exhaustion, heat stroke and heat-related mortality.
Urban Natural Areas	See 'Natural Areas.'
UWREN	University of Washington Restoration Ecology Network

# TRACKING RESTORATION PROGRESS

GSP has made significant advances in tracking restoration progress since its inception in 2005. Our staff use ecological data and work logs to plan and manage work plans, adjust BMPs, and develop long-term strategies for forest restoration practices specific to Seattle's urban environment. GSP has implemented several methods to collect and present data, including:

- **Work Logs:** Work logs are managed through an online portal called the Central Data Repository (CEDAR), which captures data such as how many hours were spent, by who, in which areas, the associated tasks completed, and the materials used during the work. Event leads and Crew leads submit information in CEDAR, which was launched in 2011. Prior to its utilization, work logs were filled out by hand on paper and emailed in where they were tracked using an Access database. The current CEDAR system is more efficient, easier to use, and more accurate.
- **Inventory:** GSP uses an Inventory Protocol to capture current condition information for each GSP zone, including the composition of plants, the number of regenerating trees, and the density of overstory trees. On average, 350 acres are inventoried annually. Zones are prioritized for inventory based on restoration activities reported in CEDAR and when zone information is outdated or missing.
- **Phase Mapping:** To understand restoration progress and plan future work, areas that have seen restoration activities in the previous year are mapped. The restoration phase information is then updated annually on the ArcGIS Online GSP Reference Map. Zones for phase mapping are determined annually by Plant Ecologists based on CEDAR work log data. This work often happens concurrently with Inventory data collection. The process is described in the Inventory Protocols 2014, a link is located in the Resources section at the end of this document.
- **Monitoring:** With assistance from EarthCorps, and Forterra, GSP created the Forest Monitoring Team program in 2010. Subsequently in 2013, the Green Cities Network adapted the protocols to create the Regional Standardized Monitoring Program. Monitoring data provides detailed measurements of vegetation in tenth-acre plots that are visited before and after restoration, and on a five-year cycle thereafter. The protocols are a collection of procedures that can be replicated and compare the condition of management units (zones) against each other or over time. While the Inventory provides a rapid assessment of current conditions in specific zones, the Monitoring provides detailed information on how restoration areas are changing over time.
- **GSP Reference Map:** The GSP Reference Map was developed in 2014 to replace the Interactive Habitat Map and GSP Google Earth map. The map helps partners communicate about work areas and logistics, shows phase progress, and describes an area's history and condition by presenting internal and external data (e.g. tree-age values for each zone, Target Ecosystem details, landslide history, wetland boundaries, etc.).

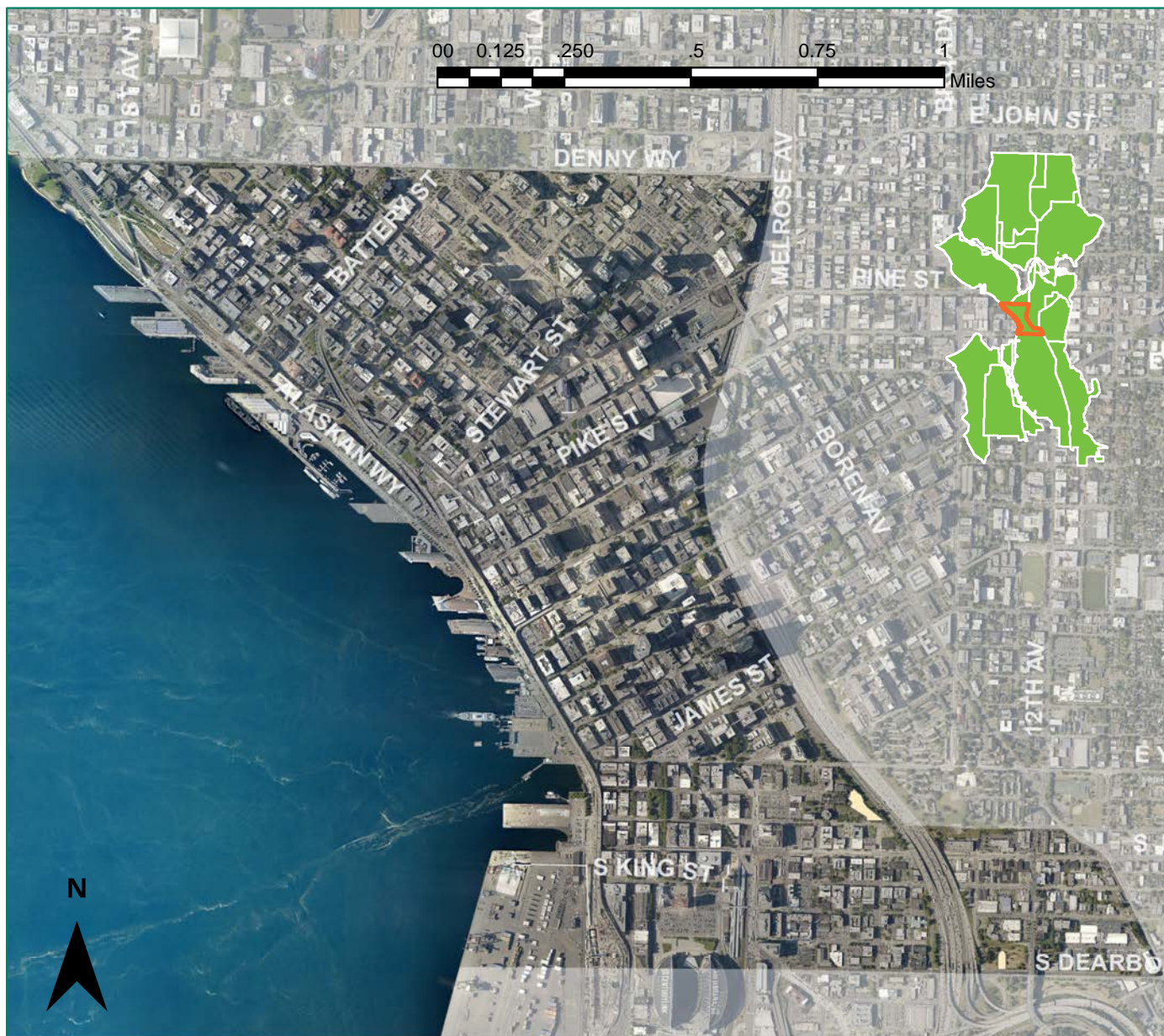
**Financial Tracking and Budget Monitoring:** GSP staff track expenditures on a daily basis and monitor the annual program budget on a monthly basis. Accounting and reporting systems have changed over time, but work was done in 2013 and 2017 to compile and analyze the expenditures over time since the program's inception. Expenditures analyzed include direct funds provided to the program as well as leverage contributions provided by program partners. By analyzing the expenditures in relation to the restoration accomplishments on the ground, estimates can be determined for the costs of various stages of restoration work.

# GSP SITE MAPS

## DOWNTOWN

### PHASE OF RESTORATION

- 0 Not in restoration   1 Invasive removal   2 Planting   3 Establishment   4 Long term monitoring and maintenance

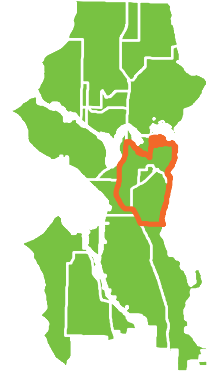
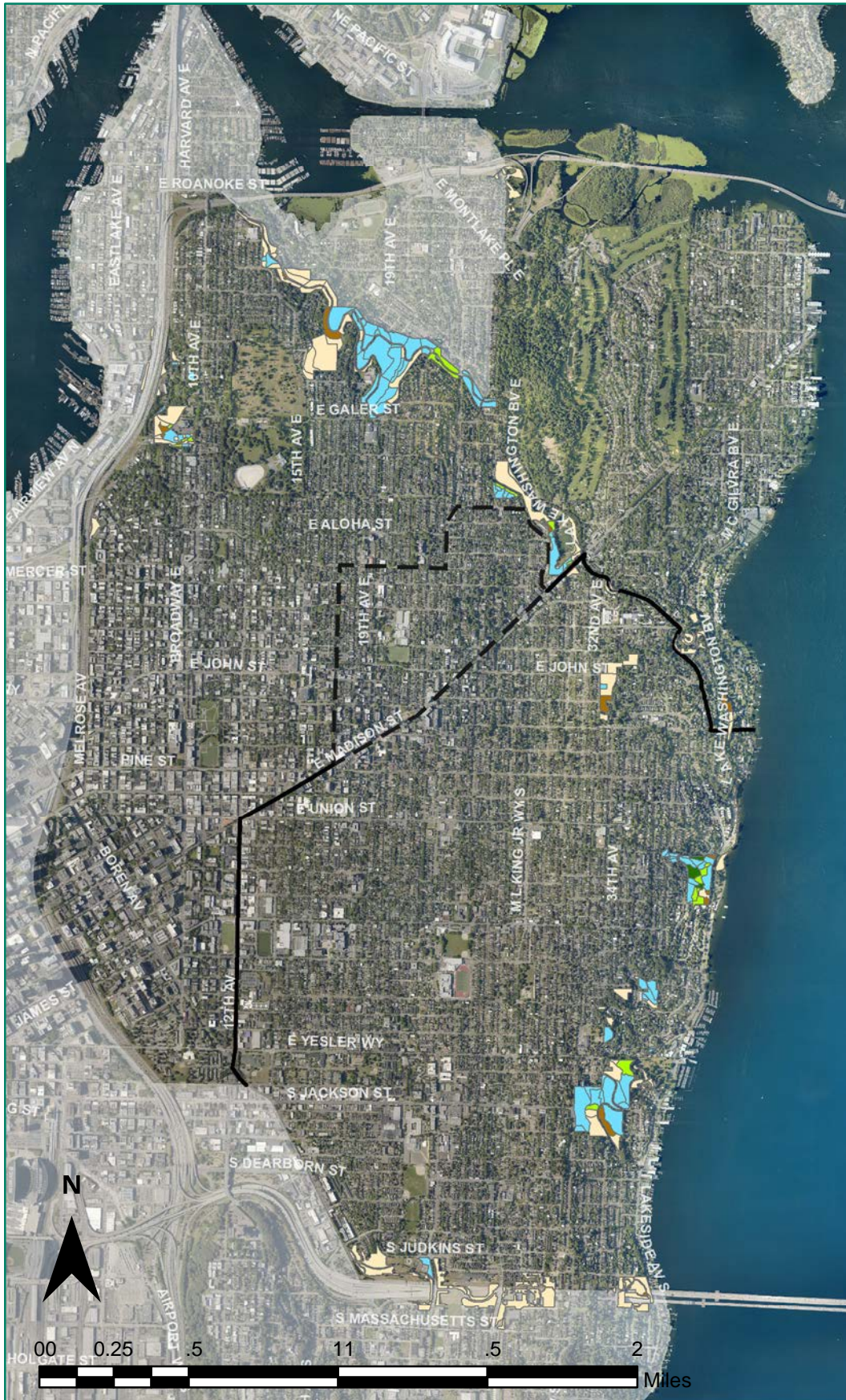


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# EAST CENTRAL (N DISTRICT)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance



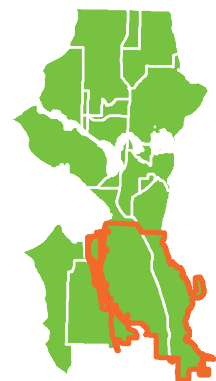
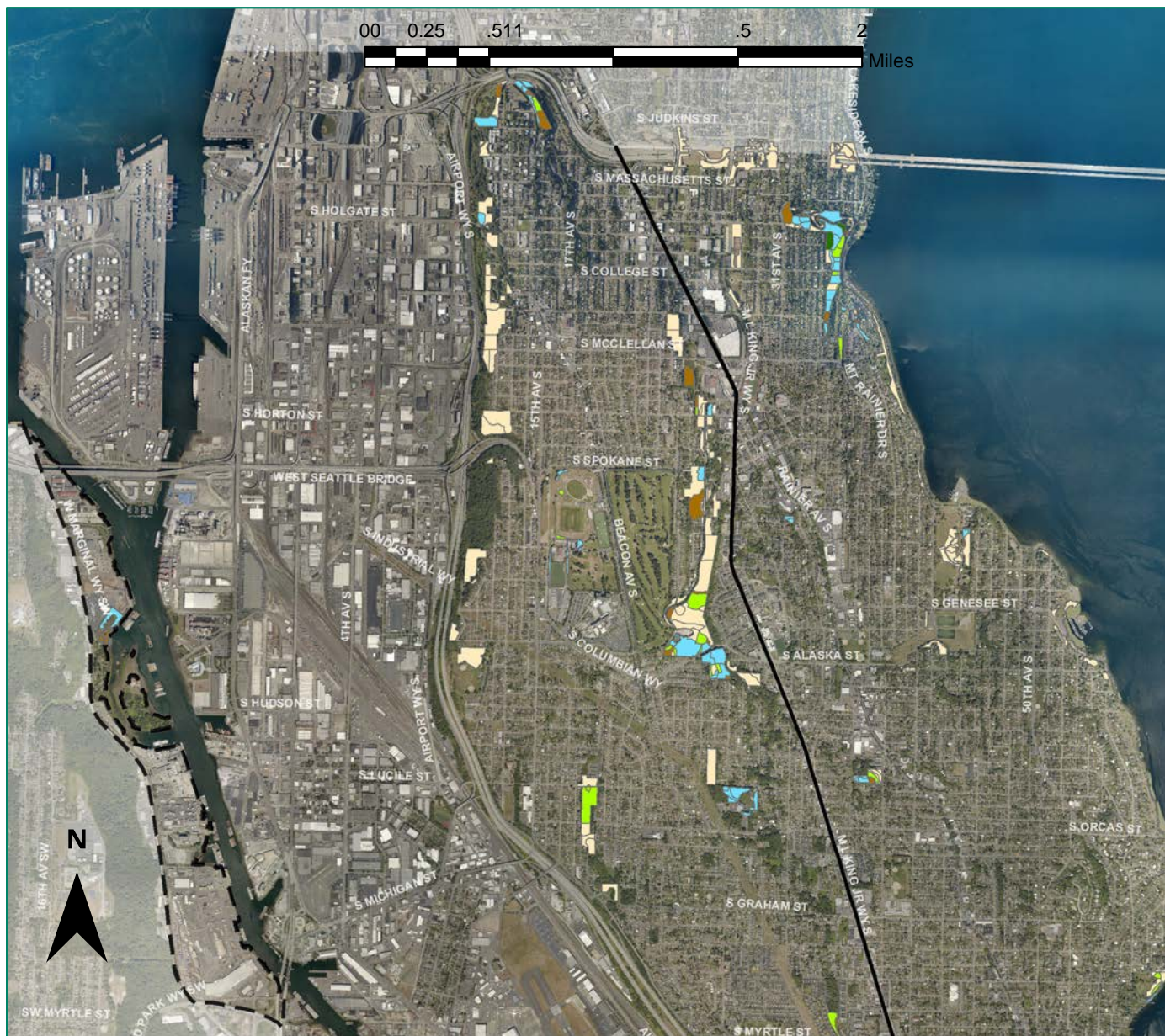
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# GREATER DUWAMISH (SOUTHEAST A)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance

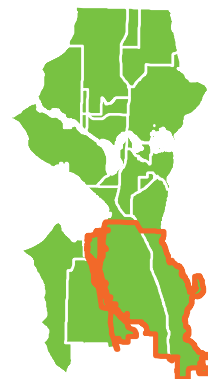
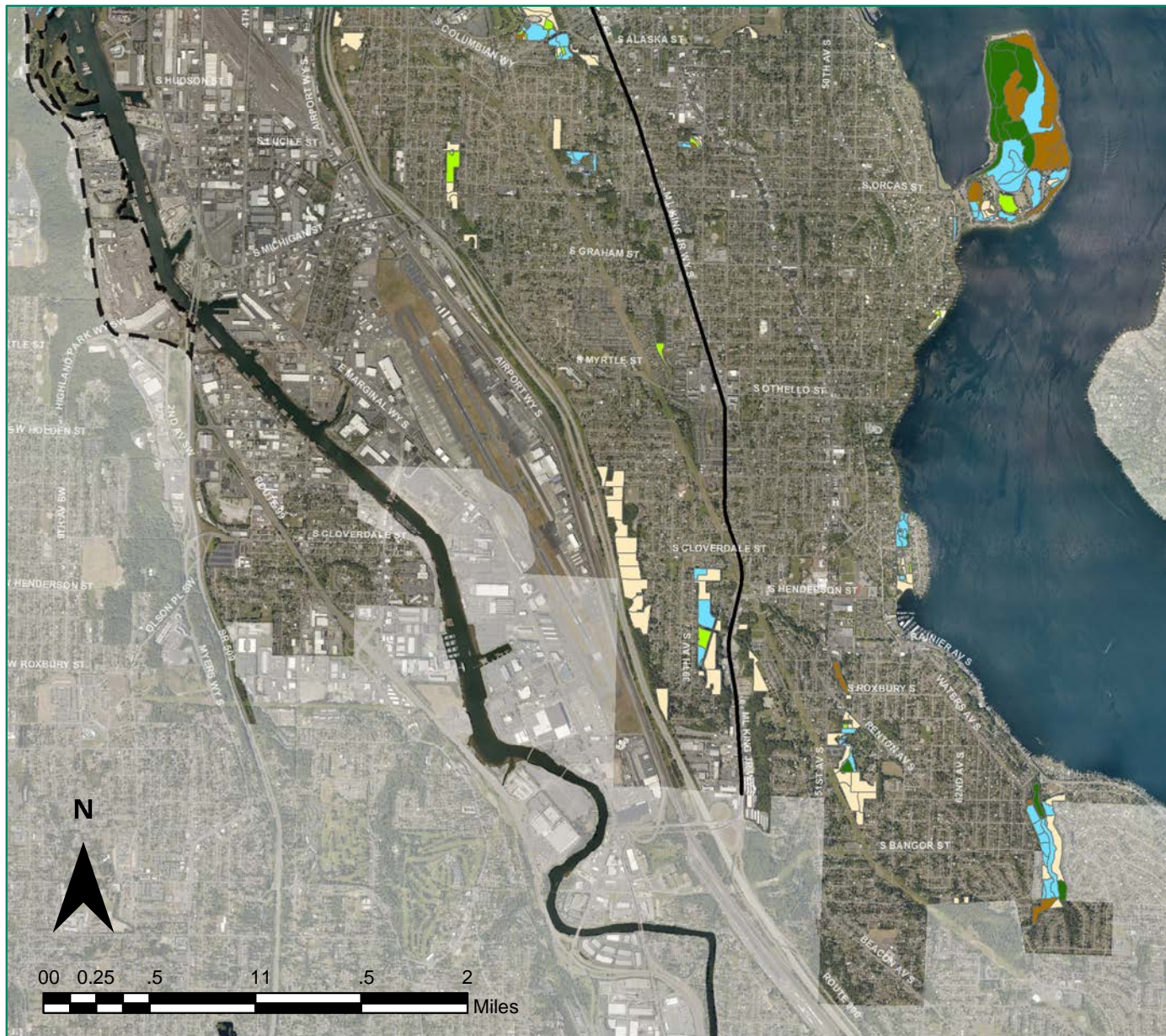


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# GREATER DUWAMISH (SOUTHEAST B)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance

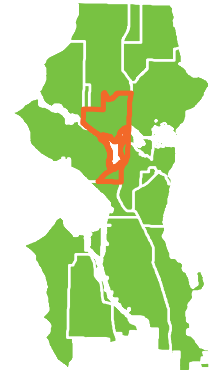
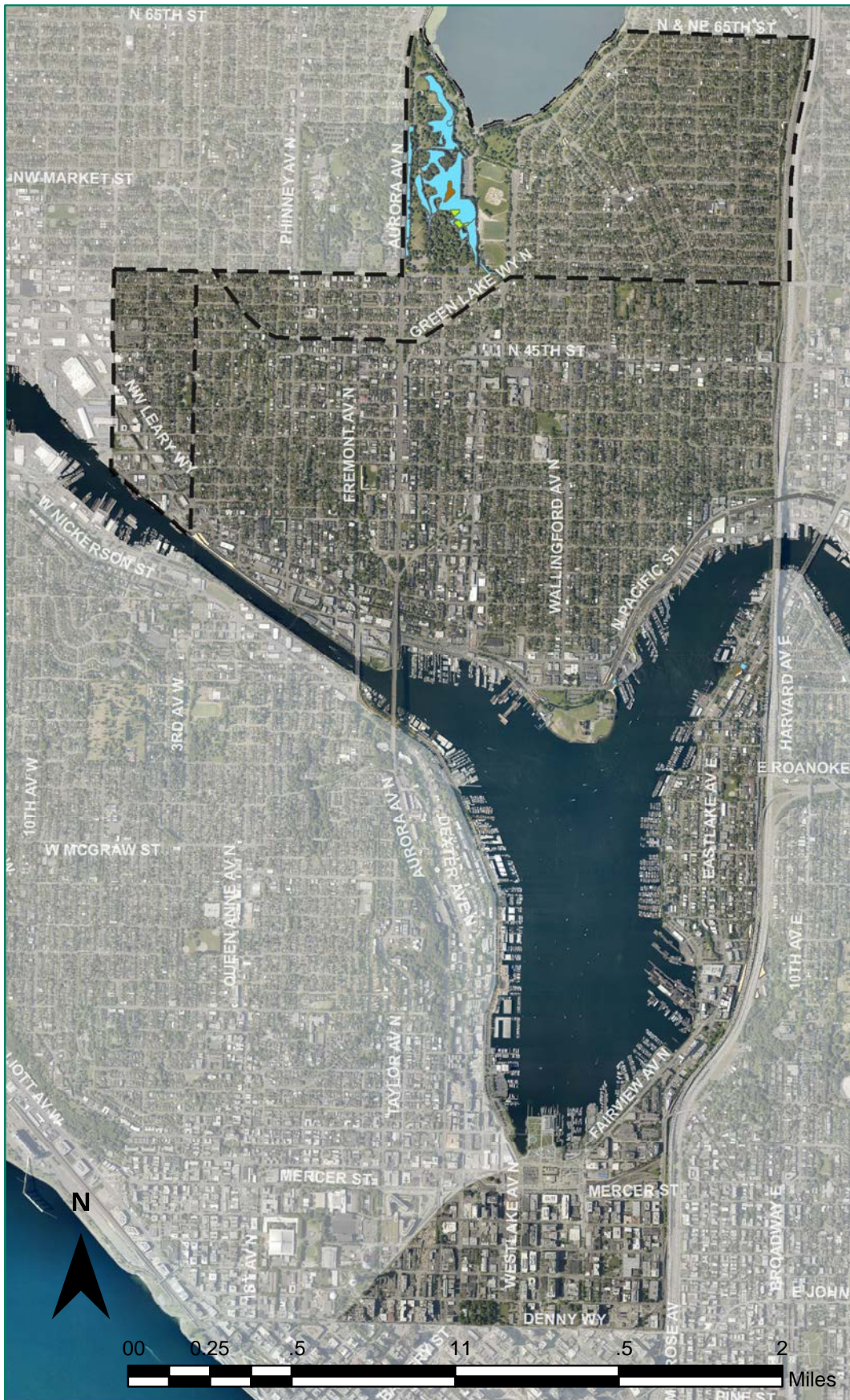


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# LAKE UNION (N DISTRICT)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance

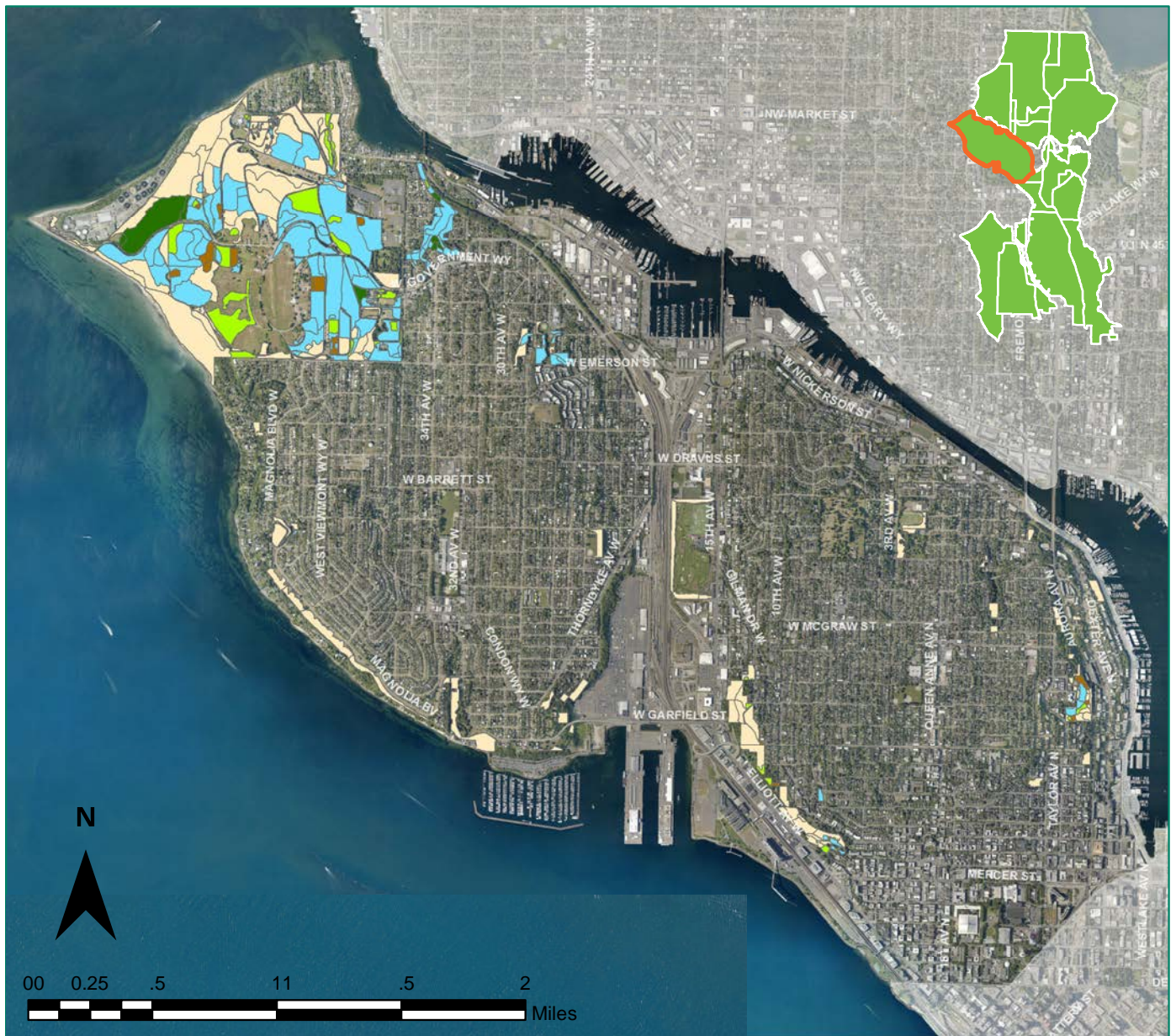


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# MAGNOLIA/QUEEN ANNE (N DISTRICT)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance

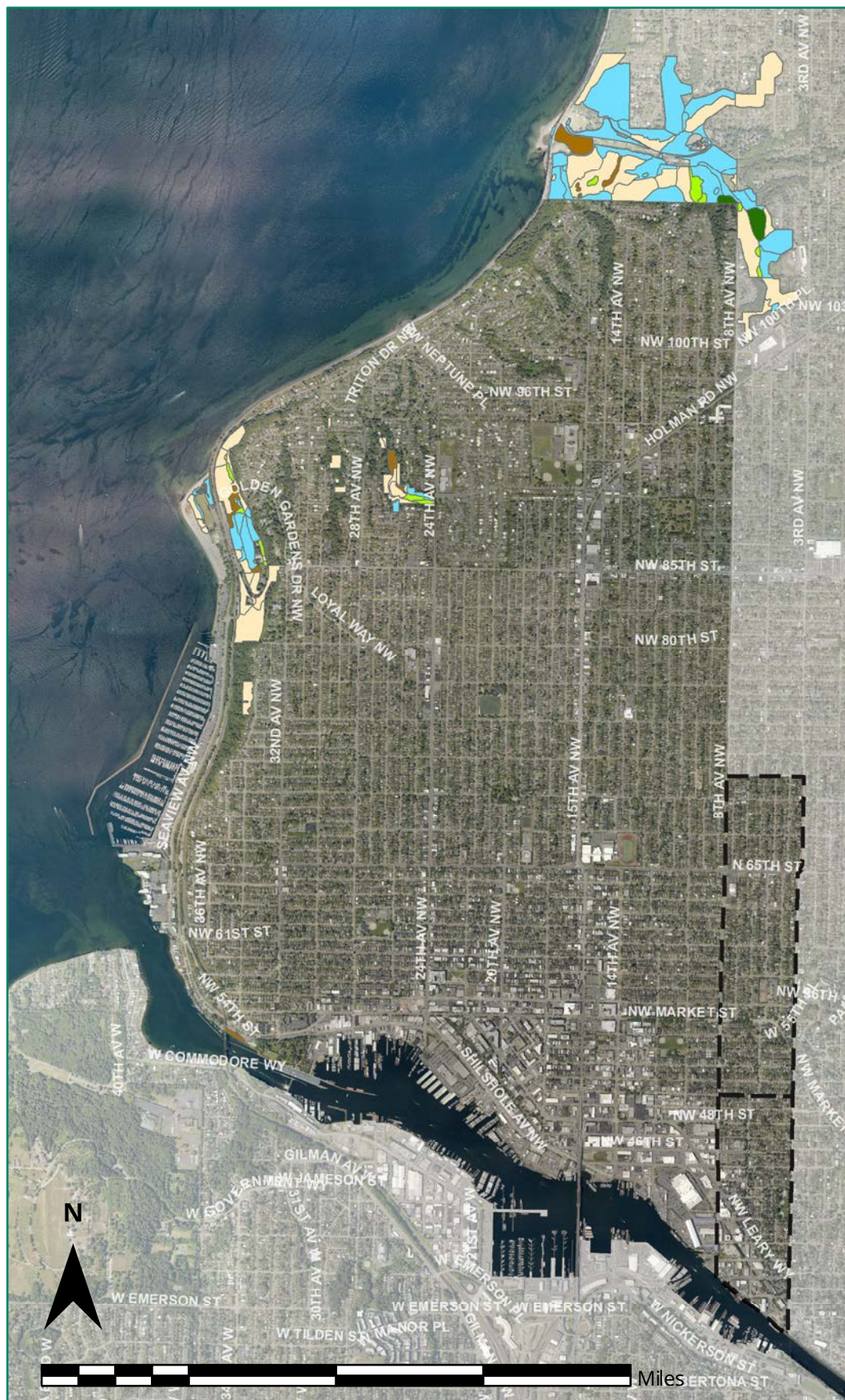


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# BALLARD (N DISTRICT)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance

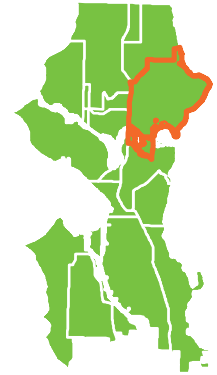
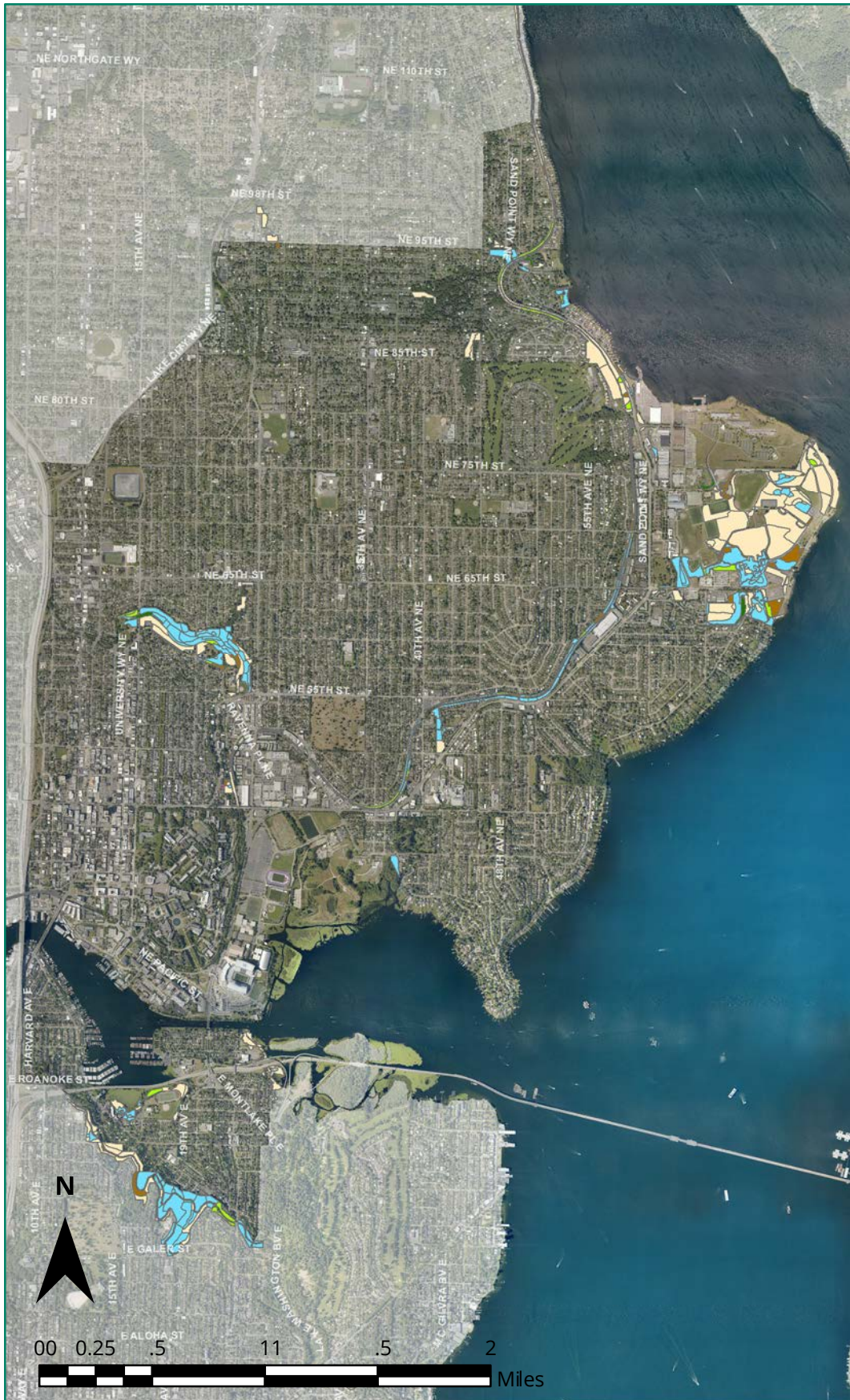


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# NORTHEAST (N DISTRICT)

## PHASE OF RESTORATION

- 0 Not in restoration
- 1 Invasive removal
- 2 Planting
- 3 Establishment
- 4 Long term monitoring and maintenance



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