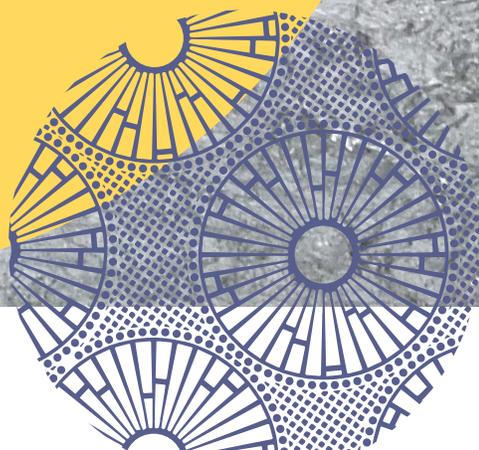




Seattle
Office of Planning &
Community Development

Environment and Climate Change

NORTHGATE SUBAREA



Acknowledgments

The following list identifies the organizations and departments whose meetings and email correspondence are captured in this document.

Seattle Department of Transportation

Seattle Office of Housing

Seattle Office of Sustainability

Seattle Parks and Rec

Seattle Public Utilities

Thornton Creek Alliance

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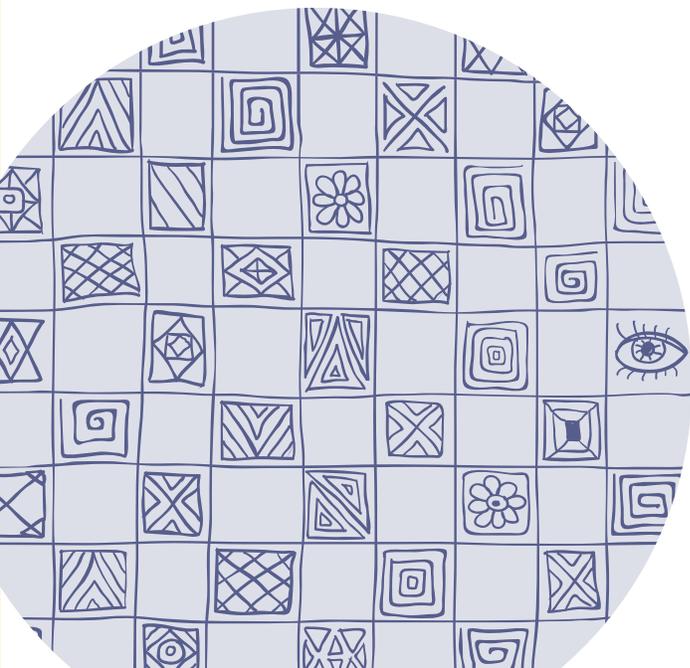
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Northgate in Context

Northgate, located in northern Seattle, has transformed significantly over the decades. Once characterized by wetlands and watercourses, it has become a commercial and residential hub. The development of Northgate Mall and the I-5 Expressway in the 1950s marked a pivotal shift in Northgate's environmental and natural systems. The mall required extensive land clearing and the creation of impervious surfaces, drastically altering natural water drainage patterns. The construction of I-5, which bisected the region, greatly impacted urban runoff as well.

As developments progressed, portions of the Thornton Creek were diverted into underground culverts to accommodate growth and manage stormwater. Enclosing sections of the creek in pipes caused the loss of natural functions like sediment transport, water filtration, and habitats for aquatic and riparian species.

Today, Northgate is one of Seattle's largest retail, medical, and office centers outside of downtown. Its strategic location near I-5 and its history as a traditional automobile-oriented commercial shopping district also provide a variety of medical and educational services to all of North Seattle.

The post-war emphasis on automobile travel greatly shaped Northgate's landscape, prioritizing wide roads, expansive parking lots, and low-density structures. This led to increased surface runoff, higher emissions, and reduced green spaces, along with air pollution and noise, further straining the local environment.



Northgate Mall, 1956



Source: seattlepi.com file

INDIGENOUS ECOSYSTEMS OF THE PUGET LOWLANDS

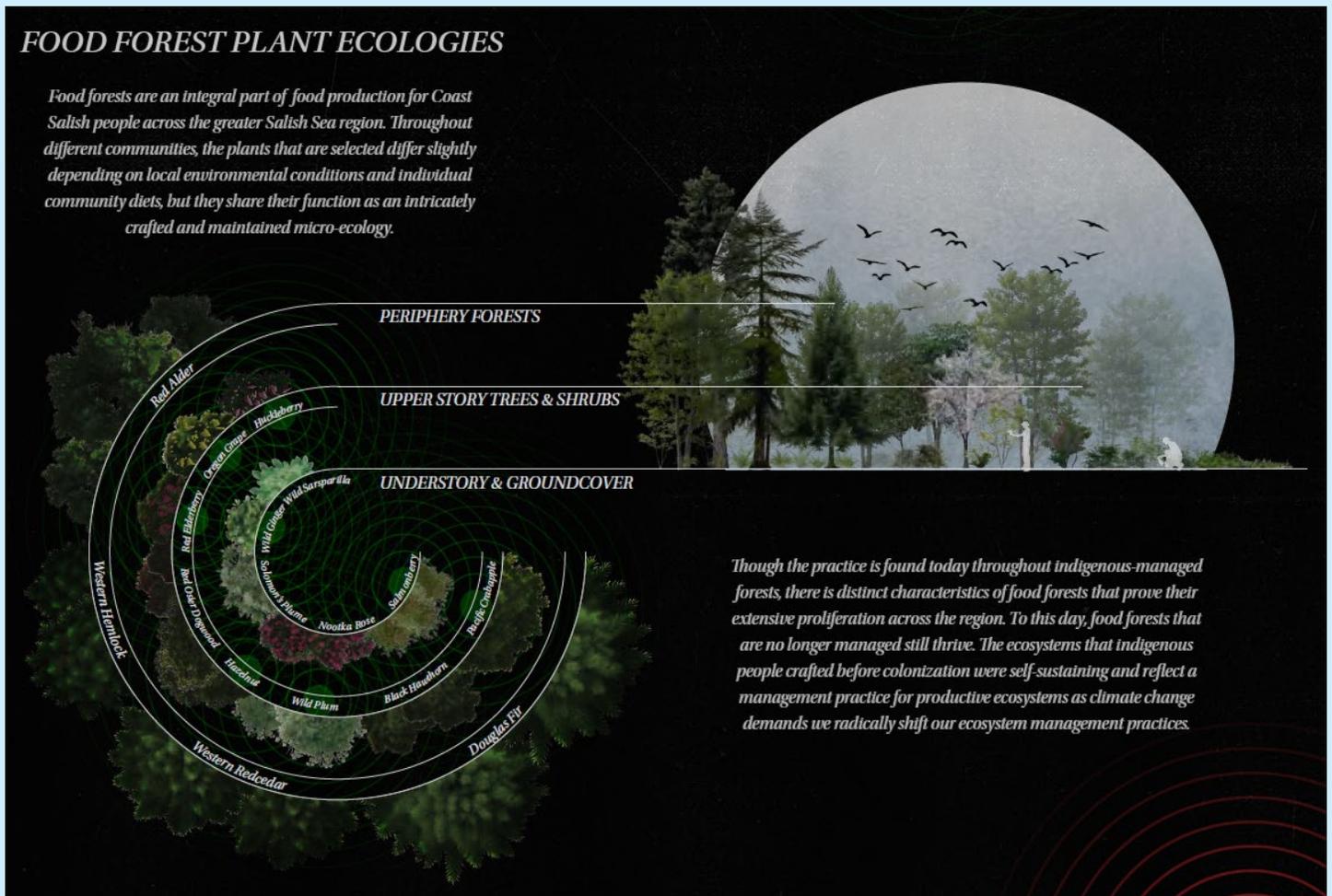
Novel Ecosystems of Northgate Area

The Northgate area is the historic source of the headwaters of Thornton Creek, which is currently the last salmon-bearing waterway in contemporary Seattle. What is now the site of the Northgate Center redevelopment project and a large influx of new urban development was once a large wetland and prairie with periphery forests that surrounded the area. The geography functions as a bowl, collecting water from the surrounding hills which lead to the natural establishment of the wetland areas. This area was highly significant to the indigenous communities that used to live on the site. The site's name in Lushootseed is "tlooqw-QEED" which translates to "Bald Head" and was a vital summer hunting and cultivating site that different longhouse villages from the waterfronts of both Puget Sound and Lake Washington would make temporary summer homes at for resource gathering. The ecosystems on the site were deeply and intentionally curated to maximize their output of food and materials, with food-bearing plants that were both a resource and a lure for animals to create the ideal hunting grounds. Because of this, there is a rich ecological history on the site. In this history, three novel ecosystems stand out: Coast Salish Food Forests, Upland Bog and Wetlands, and Upland Prairies.



FOOD FOREST PLANT ECOLOGIES

Food forests are an integral part of food production for Coast Salish people across the greater Salish Sea region. Throughout different communities, the plants that are selected differ slightly depending on local environmental conditions and individual community diets, but they share their function as an intricately crafted and maintained micro-ecology.



Though the practice is found today throughout indigenous-managed forests, there is distinct characteristics of food forests that prove their extensive proliferation across the region. To this day, food forests that are no longer managed still thrive. The ecosystems that indigenous people crafted before colonization were self-sustaining and reflect a management practice for productive ecosystems as climate change demands we radically shift our ecosystem management practices.

Coast Salish Food Forests

The Food Forest ecosystems were an intentionally planted array of food-bearing plants that maximized productivity while also performing as a fully functioning standalone ecosystem. The plants are categorized in three different levels that create a ringed ecosystem:

Periphery Forests that transition the upland forest ecosystems into the food forest space and often contain Douglas Fir, Western Redcedar, Western Hemlock, and Red Alder, amongst other tree species.

The Upper Story Trees & Shrubs that make up a large number of the plants found in the food forests are Pacific Crabapple, Black Hawthorn, Wild Plum, Hazelnut, Red Osier Dogwood, Red Elderberry, Oregon Grape, and Huckleberry.

The innermost layer, the Understoy, often had Salmonberry, Nootka Rose, Solomon's Plume, Wild Ginger, and Wild Sarsparilla, amongst many others.

Northgate: Recommendations for Re-Indigenizing the Urban Landscape for Climate Change

with permission from Darryl Vallejos and Tahoma Peak Solutions

Upland Bog and Wetlands

The Upland Bog and Wetlands ecosystem were incredibly important in the Northgate area, as the water that created this ecosystem was the source for Thornton Creek. This incredibly productive ecosystem was the source of a vast number of useful and significant plants to the indigenous people who cultivated and harvested them.

The Lagg and Outer Wetland often contained Western Redcedar, Western Hemlock, Sitka Spruce, Pacific Crabapple, Huckleberry, Salmonberry, Lady Fern, Brachen Fern, Salal, Slough Sedge, Horsetail, and Skunk Cabbage.

The Bog and Inner Wetland often contained Skunk Cabbage, Slough Sedge, Cottongrass, Redleaf Sundew, Bog Cranberry, Salal, Bog Labrador Tea, and Bog Laurel amongst others.

Upland Prairies

The Upland Prairies were also an integral ecosystem in the Northgate area. The cultivation of these ecosystems adjacent to the Wetland and Periphery Forests created a vast and productive ecosystem that was beneficial for hunting and resource cultivation. These ecosystems today are very sensitive to climate change and are in decline throughout the greater Salish Sea region.

The plants that were often found in these ecosystems include Garry Oak, Vine Maple, Flowering Dogwood, Snowberry, Ocean Spray, Camas, Fawn Lilies, Lupine, Yellow Montane Violet, Yarrow, Kinnikinnick, Foxglove, and Salal, amongst a larger selection of trees, wildflowers, fruit-bearing shrubs, and native grasses.



UPLAND BOG & WETLAND ECOLOGIES

Bogs and freshwater wetlands are key productive ecosystems for indigenous people throughout the greater Salish Sea region. Their conditions create a unique environment for high yields of food and resources. Their seasonality make them ideal places to garden and curate across seasons.

When paired with upland prairies, wetlands create an ideal environment for hunting. Since time immemorial these ecosystems were curated with plants that not only provided food for indigenous people, but also intentionally attracted a wide array of animals. The depth and intricacy of these micro-ecologies meant that they carried with them immense significance for all Coast Salish peoples.



HISTORICALLY SIGNIFICANT
INDIGENOUS FOOD SOURCES

LAGG AND OUTER WETLAND

BOG CENTER AND INNER WETLAND



Regional Watershed

Seattle is characterized by a network of interconnected watersheds that play a critical role in the city's hydrology and ecology, including the Lake Washington, Puget Sound, and Duwamish watersheds.

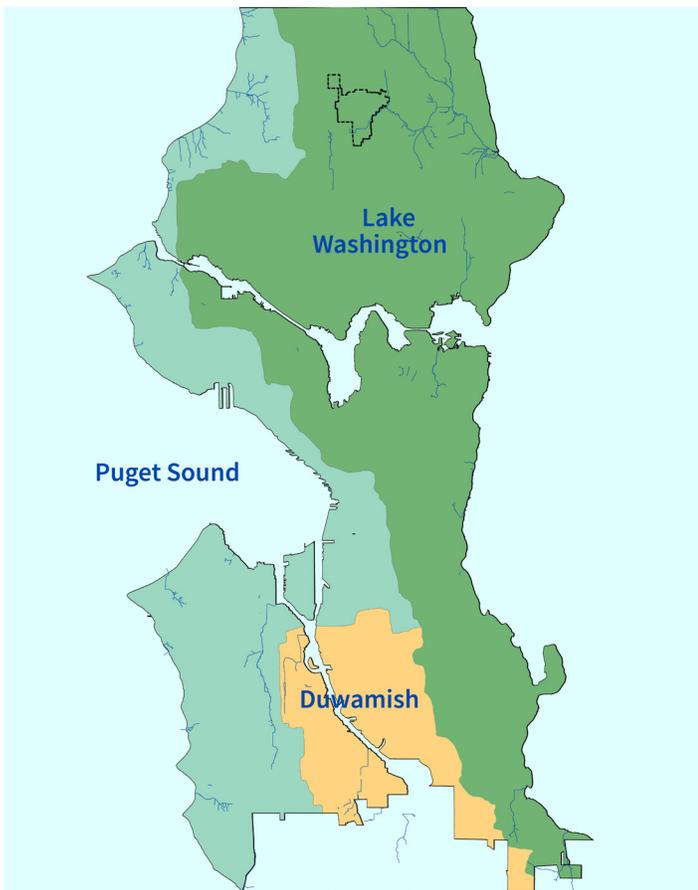
Lake Washington Watershed

Northgate is situated within the Lake Washington Watershed, one of the most significant watersheds in King County. This watershed is the land area in which rainwater drains to Lake Washington and out through the Hiram Chittenden Locks. In Seattle, this watershed includes Thornton Creek, West Lake Washington, Lake Union, and West Lake Washington subwatersheds.

Regional Ecology

The Lake Washington Watershed is a vital ecological area in Seattle, supporting diverse habitats and species. The aquatic habitats are crucial for fish species like salmon and trout, which rely on the clean, cool waters for spawning and development. The mature conifer forests in parks like Hamlin Park provide essential habitats for terrestrial wildlife, including birds, mammals, and insects. Urban green spaces, such as Matthews Beach Park and the areas along Thornton Creek, offer critical habitats for urban wildlife and recreational opportunities for residents.

Additionally, wetlands within the watershed serve as natural water filters, trapping pollutants and sediments, and supporting a wide range of plant and animal species. The riparian zones, or areas along the banks of streams and rivers, are vital for preventing erosion, offering habitat, and maintaining the health of the aquatic ecosystems. Overall, the Lake Washington Watershed is integral to preserving biodiversity and ensuring environmental sustainability in the region.



Seattle Watersheds

Thornton Creek

Northgate is situated within the Lake Washington watershed, specifically in the Thornton Creek sub-watershed, which plays a crucial role in the hydrology of the region. Thornton Creek has a channel length of 20.7 miles and drains a 7,402-acre urban watershed in northwestern King County. This watershed extends roughly between Puget Sound and Lake Washington, with Thornton Creek entering Lake Washington at Matthews Beach Park.

The Thornton Creek watershed highlights the urban, highly developed nature of the Northgate segment. According to the Thornton Creek Alliance,

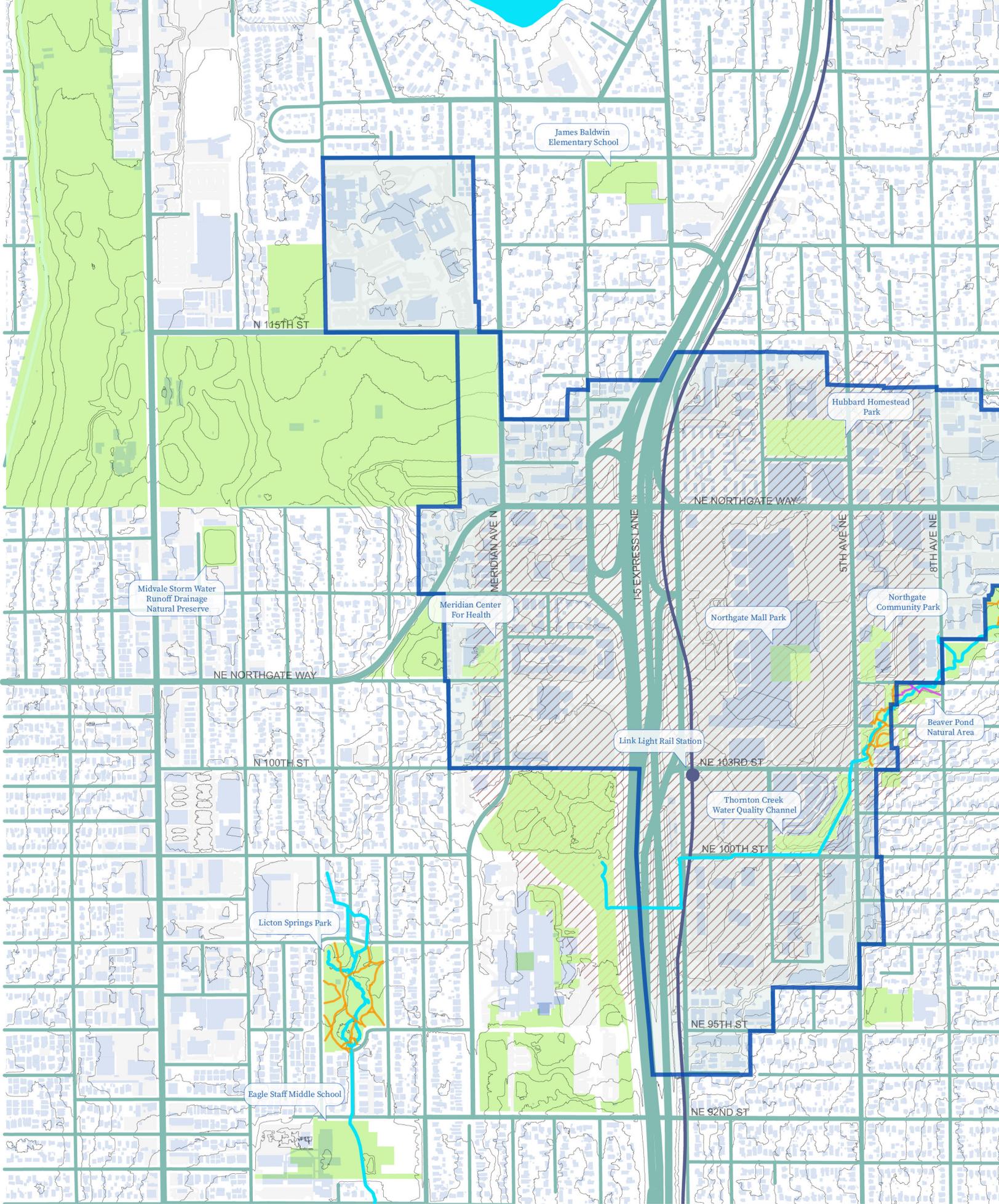
“the watershed is full of contrasts: large, mature conifer forest in Hamlin Park and the busy stretch of Interstate-5 adjacent to the Northgate Mall area; steep ravines and gently sloped floodplains; dense multi-family neighborhoods near retail cores such as Lake City and neighborhoods with large wooded lots.” Over 90% of the creek’s main channel runs above ground, flowing through more than 700 backyards and over 15 parks and natural areas on its way southeast across town to drain into Lake Washington.

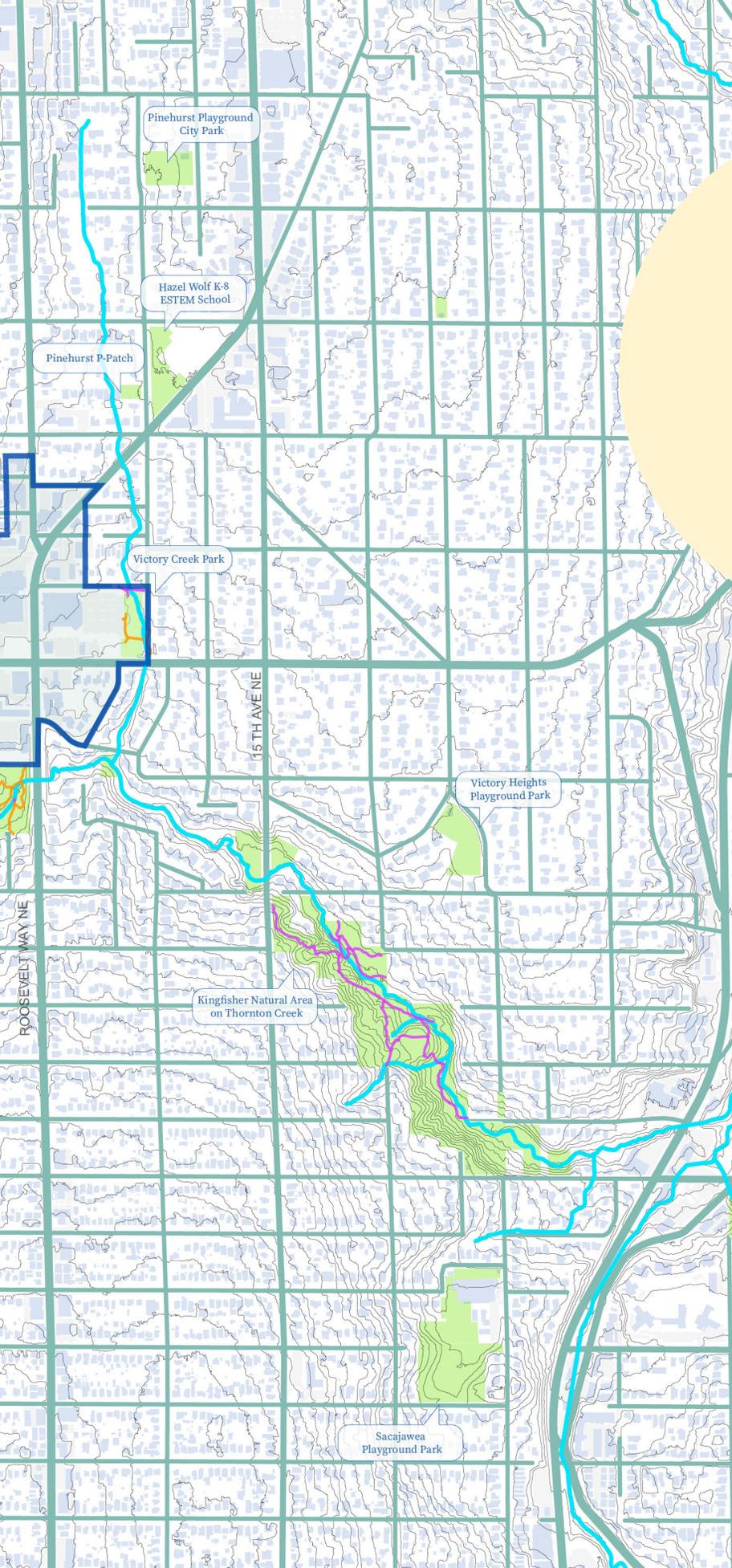
The Thornton Creek watershed is part of the ceded land of the [Muckleshoot Indian Tribe](#), who presently co-manage the fisheries throughout the watershed.

Northgate Watershed

- Watershed
- Historic Kettle Bogs
- Streams and Waterbodies
- Roads







- Public Open Space
- Water
- Watercourse
- Collector Arterial
- Freeways
- Minor Arterial
- Non Designated Roads
- Link Light Rail
- Historic Bog
- Arterial Trail
- Social or Restoration Trail
- Contours
- Urban Center Boundary

Environmental History

The Thornton Creek watershed is notable for its unique kettle bogs and stream environment, historically capable of supporting all five species of Pacific Salmon. These kettle bogs, which have contributed to much of Northgate being classified as a peat settlement zone, have played a vital role in the local ecosystem by providing habitats for various plant and animal species, including blue herons and bald eagles. However, development and urbanization have led to the degradation and loss of many of these bogs, adversely affecting the region's biodiversity and ecological balance. Northgate's regional ecological importance is underscored by the need to preserve and restore these critical habitats to maintain the area's environmental health and resilience.

Previous Planning Efforts

The Northgate Urban Center plan should build on recent studies and resources that provide a strong foundation for climate projections, open space need, and environmental opportunities. The following is a summary of key reports:



Source: <https://www.gaynorinc.com/>

Draft Environmental Impact Statement (DEIS)

The Seattle Comprehensive Plan is the guide for how the city grows and makes investments. The Draft Environmental Impact Statement (DEIS) evaluates five alternatives for providing more housing and improving the jobs/housing balance in Seattle. Each alternative has been reviewed for likely environmental impacts. The purpose of evaluating alternatives is to understand the impacts of different approaches to accommodating housing and jobs. The final plan and implementing legislation would likely implement a combination of changes analyzed in different alternatives. Northgate is within analysis zone 2 in the Draft EIS.

Key Strategies or Actions Impacting Northgate:

- **Green Infrastructure Enhancements:** Projects to manage stormwater and improve environmental quality, including green roofs, rain gardens, and permeable pavements to reduce runoff and improve water quality in the Thornton Creek watershed.
- **Sustainable Building Practices:** Promotion of energy-efficient buildings, renewable energy use, and sustainable materials in new developments to reduce environmental impacts.
- **Public Space Improvements:** Upgrades to parks and creation of new public spaces, along with enhanced pedestrian and bicycle infrastructure to support sustainable urban living.

Seattle Climate Vulnerability Assessment, OPCD (2023)

The City of Seattle's Climate Vulnerability Assessment (CVA) is a detailed assessment of how climate change is already affecting and will continue to affect the community wellbeing, economy, health, infrastructure, and natural systems of the city.

Key Strategies or Actions Impacting Northgate:

- **Resilience Planning:** Implementing strategies to enhance resilience in vulnerable populations and infrastructure.
- **Heat Mitigation:** Increasing tree canopy coverage and green spaces to mitigate urban heat island effects.

Seattle Climate Action Plan, City of Seattle (2018)

The first climate action plan was adopted in 2006. The 2006 CAP laid out a strategy to meet the Kyoto target and identified short-term actions the City should take to achieve that goal. To date, fifteen of the eighteen areas of action identified in the 2006 CAP have been implemented or are in the process of implementation.

Key Strategies or Actions Impacting Northgate:

- **Energy Efficiency:** Promoting energy-efficient building standards and retrofits.
- **Renewable Energy:** Encouraging the use of renewable energy sources in new and existing developments.

Climate Impact Actions, Office of Sustainability (2021)

The Green New Deal Executive Order calls for OSE to convene a Green New Deal City Team, comprised of relevant City departments, such as Seattle Department of Transportation, Seattle City Light, Seattle Department of Construction and Inspections, the Office of Economic Development, and Office of Planning and Community Development, that would engage and collaborate with community-based organizations and residents to develop a brief report identifying the top 10 actions the City could take in order to achieve expeditious reductions in GHG emissions.

Key Strategies or Actions Impacting Northgate:

- **Collaborative Efforts:** Engaging community-based organizations and residents to develop and implement climate actions.
- **GHG Reduction Programs:** Focusing on transportation electrification and sustainable building practices.

Community Greenhouse Gas Emissions Inventory, Office of Sustainability (2020)

The Seattle Comprehensive Plan is the guide for how Tracking greenhouse gas (GHG) emissions across the buildings, transportation, industrial, and waste

sectors helps the City develop effective programs and policies designed to reduce climate impacts. This GHG emissions inventory reports on the sources and magnitude of Seattle’s core GHG emissions and provides short- and long-term trends so the City of Seattle and its residents are better able to take informed actions to combat the climate crisis.

Key Strategies or Actions Impacting Northgate:

- Data-Driven Policies: Utilizing emissions data to inform policy decisions and track progress in emission reductions.

Parks and Open Space Plan, Seattle Parks and Recreation (2017)

The 2017 Parks and Open Space Plan is a 6-year plan that documents and describes SPR’s facilities and lands, looks at Seattle’s changing demographics, and lays out a vision for the future. The 2017 Parks and Open Space Plan is required by the Washington State Recreation and Conservation Office (RCO) to maintain the City of Seattle’s eligibility for state grants and funding programs that will help realize outdoor recreation development and open space acquisition projects.

Key Strategies or Actions Impacting Northgate:

- Park Enhancements: Developing and improving parks and open spaces to serve the growing population.
- Recreational Opportunities: Expanding outdoor recreation options and acquiring new open spaces.

Outside Citywide, City of Seattle (2023)

Outside Citywide is a collaborative initiative to create a flourishing, equitable, well-connected network of public green spaces across Seattle. Through partnerships and innovation, Outside Citywide identifies priority areas and key strategies to improve public space at the city scale, while also testing and improving these strategies by implementing projects at the neighborhood scale.

Key Strategies or Actions Impacting Northgate:

- Public Green Spaces: Identifying priority areas for green space improvements and testing innovative strategies at the neighborhood scale.

Northgate Urban Design Framework (2013)

This Urban Design Framework (UDF) guides future actions that will help realize the vision identified in Northgate’s 1993 neighborhood plan, calling for growth and transformation of the commercial core into a livable, walkable, dense urban center. The UDF recommends both general and specific actions that the City will seek to implement, to achieve goals of the City’s Comprehensive Plan, the neighborhood plan, and related objectives to improve Northgate as a livable and well-served Urban Center.

Key Strategies or Actions Impacting Northgate:

- Urban Design Improvements: Implementing actions to enhance walkability and livability in the urban center.
- Sustainable Development: Encouraging development that aligns with environmental and sustainability goals.

Existing Policies and Incentives

The following existing policies and incentives are pertinent to Northgate's environment and open spaces. They offer a range of tools to help achieve the City's goals for carbon reduction, improved air quality, and the creation of more resilient and healthy communities. These serve as a foundation for future recommendations.

BUILDING PRACTICES

Priority Green Expedited

Offers faster building permit review and processing for projects that meet green building requirements with a focus on clean energy, resource conservation, indoor air quality, and lead hazard reduction. Priority Green Expedited is available for all new construction projects.

Key Strategies or Actions Impacting Northgate:

- Faster Permits: Encourages green building practices by expediting permit processes.
- Sustainability Focus: Promotes the adoption of sustainable building standards.

Building Emissions Performance Standard

The City's Building Emissions Performance Standard (BEPS) Policy, was adopted in December 2023. Building performance standards are energy or emissions targets that existing multifamily and commercial buildings over 20,000 square feet must meet over time to improve energy efficiency and reduce climate impacts. The standard should reduce building emissions 27% by 2050.

Key Strategies or Actions Impacting Northgate:

- Emissions Targets: Encourages energy efficiency in large buildings.
- Long-Term Goals: Supports significant emissions reductions by 2050.

Green Building Standard

Grants projects additional development capacity in specific zones in exchange for meeting green building requirements.

Key Strategies or Actions Impacting Northgate:

- Development Incentives: Encourages developers to adopt green building practices.
- Capacity Increases: Supports higher density development in exchange for sustainability.

Clean Buildings Accelerator

Offers technical support for owners and managers of buildings 20,000 SF and larger to understand the State of WA Clean Buildings law, reduce emissions aligned with the Seattle Building Emissions Performance Standard (BEPS), and comply with City and State legislation.

Key Strategies or Actions Impacting Northgate:

- Technical Assistance: Helps building owners meet clean energy standards.
- Emission Reductions: Supports compliance with emissions reduction policies.

Living Building Pilot Program

Offers additional height, floor area ratio (FAR), and Design Review departure requests for projects that meet aggressive energy and water requirements and Living Building Petal Certification.

Key Strategies or Actions Impacting Northgate:

- Incentives for Sustainable Design: Encourages high sustainability standards through additional development allowances.
- Water and Energy Efficiency: Promotes projects that excel in energy and water conservation.

ENVIRONMENT

Environmentally Critical Areas

The Environmentally Critical Areas (ECA) Code regulates areas in Seattle that serve vital environmental functions. These regulations are detailed in Chapter 25.09 of the Seattle Municipal Code. For the Northgate area, the three most significant ECA sections pertain to peat settlements, liquefaction, and riparian watercourses.

Key Strategies or Actions Impacting Northgate:

- Protection of Sensitive Areas: Ensures that ECAs are preserved and managed responsibly.
- Development Regulations: Guides development to minimize environmental impacts.

EMISSIONS

Commute Trip Reduction Program

In 1991, the State of Washington adopted its Commute Trip Reduction (CTR) law. The law is focused on reducing traffic congestion and air pollution by shifting drive-alone commutes to other modes.

Key Strategies or Actions Impacting Northgate:

- Traffic Reduction: Encourages alternative transportation modes to reduce congestion.
- Air Quality Improvement: Aims to lower transportation-related emissions.

EV Charging Ordinance

This Washington State Law sets forth requirements and minimums for EV charging stations, EV-ready parking spaces, and EV capable parking spaces according to building occupancy type.

Key Strategies or Actions Impacting Northgate:

- Infrastructure Development: Supports the expansion of EV charging infrastructure.
- Promotion of Electric Vehicles: Encourages the adoption of electric vehicles.

Fossil Fuel Free Fleet

Under Executive Order 2018-02, Seattle aims to have a fossil fuel free fleet by 2030.

Key Strategies or Actions Impacting Northgate:

- Fleet Electrification: Supports the transition to a fossil fuel-free transportation fleet.
- Emission Reductions: Contributes to significant GHG emission reductions.

Oil Conversions Fund and Clean Heat Program

The newly passed 2023-2024 City of Seattle budget will fund oil conversions using Payroll Expense Tax revenues.

Key Strategies or Actions Impacting Northgate:

- Heating Transition: Promotes the conversion from oil to cleaner heating options.
- Funding Support: Provides financial assistance for residents transitioning to cleaner energy.

STREETS

Stay Healthy Streets

An initiative created by SDOT in response to the COVID-19 pandemic. Closed residential streets to pass through auto traffic to open them up to people walking, rolling, and biking.

Key Strategies or Actions Impacting Northgate:

- Street Access: Encourages pedestrian and bicycle use by limiting vehicle traffic.
- Health Promotion: Supports healthier lifestyles through increased active transportation options.

Street Vacation

Street Vacations allow property owners to petition the Seattle City Council to acquire a public right-of-way next to their property from the City. Street vacations “vacate” the public’s right to use a street and return it to private property. Street vacations are only applicable when there is an adjacent development project planned.

Key Strategies or Actions Impacting Northgate:

- Public Right-of-Way Management: Manages public space for private development needs.

PARKS AND OPEN SPACE

Privately Owned Public Space program

Privately Owned Public Spaces (POPS) are open to the public, and include plazas, arcades, atriums, hillclimbs, and green streets. These spaces are allowed or required by rules in the Seattle Land Use Code that have been in place for several decades, and are generally located in Seattle's Center City.

Key Strategies or Actions Impacting Northgate:

- Public Accessibility: Ensures that privately owned spaces remain accessible to the public.
- Enhanced Urban Spaces: Promotes the development of accessible public spaces within private developments.

P-Patch Community Garden Program

The P-Patch Community Garden Program, established in 1973, consists of publicly owned gardens managed

by community members and operated by the Seattle Department of Neighborhoods. In the larger Northgate area, there are three P-Patches located outside the Urban Center boundary.

Key Strategies or Actions Impacting Northgate:

- Community Engagement: Supports community-managed gardens to enhance local food production.
- Green Space Enhancement: Provides green spaces for community use and engagement.

Seattle Conservation Corps

Established in 1986, the Seattle Conservation Corps is a unique Parks and Recreation program that provides employment for people experiencing homelessness. This program offers adults the chance to train and work in a structured environment, equipping them with job skills while completing projects that benefit the community and the environment. It operates year-round with an annual budget of approximately \$4 million.

Key Strategies or Actions Impacting Northgate:

- Employment Opportunities: Provides job training and employment for vulnerable populations.
- Community and Environmental Projects: Supports community improvement and environmental conservation projects.

King County Stream and Water Quality Monitoring Program

The Stream and River Monitoring Program, part of the King County Department of Natural Resources and Parks' Water and Land Resources Division, currently monitors Thornton Creek near Matthews Beach, where the creek flows into Lake Washington. Water quality of Thornton Creek was "Moderate" based on data 2019 to 2020.

Key Strategies or Actions Impacting Northgate:

- Water Quality Monitoring: Ensures ongoing assessment of water quality in local waterways.
- Environmental Protection: Supports efforts to maintain and improve water quality in Thornton Creek.

STORMWATER

Rainwise

This rebate program, a partnership between the City of Seattle and King County, assists private property owners in managing stormwater by installing cisterns and rain gardens.

Key Strategies or Actions Impacting Northgate:

- Stormwater Management: Supports private property owners in implementing stormwater management solutions.
- Environmental Benefits: Reduces runoff and improves water quality through rain gardens and cisterns.

Changing Climate

Seattle and the broader Puget Sound region are already experiencing the effects of climate change, including warmer temperatures, more frequent extreme heat events, prolonged wildfire smoke episodes, extreme precipitation, and sea level rise. These impacts are expected to worsen under various future climate scenarios, depending on successes in reducing greenhouse gas emissions and improving adaptation strategies for city systems and communities.

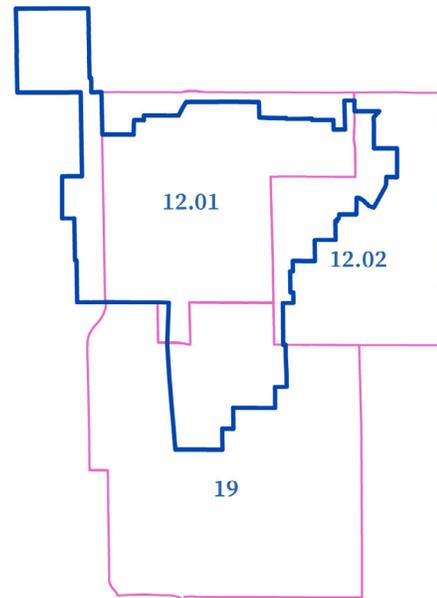
The impacts of climate change will have wide-ranging effects on Seattle. These include disruptions to the local economy, worsening public health disparities, increased stress on infrastructure, and changes to community well-being and local ecosystems. The burden of these impacts will not be evenly distributed. Neighborhoods with fewer community services—such as grocery stores, parks, libraries, and transit options—are often the same areas that were historically redlined and have higher populations of residents of color, non-English speaking residents, and older adults. These neighborhoods will be more vulnerable to climate-related extreme events. In addition, aging infrastructure systems are more vulnerable to climate-related hazards, as they are less able to mitigate climate-related hazards or cope with extreme events. Many systems are inherently connected so impacts to one system will often create cascading impacts to other systems, services, and assets.



Climate Vulnerability Assessment

In 2023, the City of Seattle developed a Climate Vulnerability Assessment (CVA) to support the One Seattle Comprehensive Plan. This report and tool analyzed vulnerability across five focus areas aligned with City departments' operations and planning processes: Economy, Public Health, Community Amenities and Wellbeing, Infrastructure, and Natural Systems. The CVA considers both physical and socioeconomic vulnerabilities to climate change within each focus area.

The climate vulnerability assessment tool provides spatial analysis of relative vulnerability at the census-tract level. Although these boundaries do not perfectly align with those of the Northgate Urban Center, they offer a framework for understanding the vulnerability of the larger Northgate area. The data boundaries used for the climate vulnerability analysis tool are shown below. These five focus areas are grouped into two larger categories: social and economic vulnerability, and physical vulnerability. Additionally, the tool combines natural systems and infrastructure into one category, as these two focus areas are interrelated.



Northgate Census Tract

- Census Tract
- Northgate

Social and Economic Vulnerability

Assess the **relative vulnerability** to climate change that **communities experience**; examines geographic distribution of vulnerability by **census tract**.



Image Source: Business Insider

Economy

Economic vulnerability refers to the impact of climate change on the local economy, including businesses, workers, and other economic factors. Northgate hosts several large and institutional businesses, which positively increases the neighborhood's climate economic resilience. Currently, Northgate does not have a high number of climate-exposed employees, such as outdoor laborers. However, this could change as development and construction in the area increase.

Community Amenities and Wellbeing

The vulnerability of community amenities and well-being is caused by climate change's impact on essential community assets and services, such as food access, parks, and critical facilities that contribute to residents' well-being. In comparison to other Seattle neighborhoods, Northgate has lower access to food and less park space, with only 5% classified as open space. Additionally, the neighborhood faces high heat exposure due to the significant amount of impervious surfaces, with over 73% being impervious (buildings, roads, or parking lots)². These factors worsen existing disparities and make it harder for residents to cope with climate events.

1 Seattle Climate Vulnerability Assessment. The results are ranked on a scale of zero to one, where zero means lower vulnerability and one means higher vulnerability.

2 Data Source: [City of Seattle ArcGIS Online](#)

Physical Vulnerability Assessment

Assess how various **infrastructure assets and natural systems** are vulnerable to climate change and **assess implications**.



Image Source: KING5.com



Image Source: Google Street View

Public Health

Public health vulnerability refers to how climate change exacerbates existing health risks and introduces new health challenges for residents. Northgate has a high percentage of residents with asthma and many with limited or no health insurance. Only 94% of residents within Northgate have health insurance. This makes the population particularly sensitive to environmental changes and reduces their ability to cope with extreme weather, especially during smoke-filled days

Natural Systems

Natural systems vulnerability refers to the impacts of climate change on local natural systems, including watersheds (water supply, quality, and flood risk), urban forests, open spaces, and aquatic habitats. Northgate is inland and therefore not directly affected by sea-level rise, but the area does have lower tree canopy coverage.

Infrastructure

Infrastructure vulnerability refers to the impact of climate change on energy, transportation, and water infrastructure in Seattle. Northgate contains several key infrastructure systems, including the I-5 connector and a major Sound Transit Link station. The neighborhood also hosts important facilities like the UW Northeast Medical Center, Northgate Branch Library, and Community Center, and is near Fire Station 31. However, it does not have any critical facilities located in clear climate impact zones, such as areas affected by sea level rise.

Extreme Heat

Rising Temperatures

Over the past century, Washington State has experienced a 2.0°F increase in average temperatures (Frankson et al. 2022). Specifically in Seattle, the average summer temperature (June - August) has risen by about 1.5°F from 1950 to 2020. This increase in temperature has led to more hot days, contributing to heat-related illnesses and deaths. Additionally, warmer temperatures have put stress on native animals, particularly fish, and have caused more frequent algal blooms in streams. As temperatures continue to climb, certain areas in Northgate, such as those with dense development and limited green spaces, are expected to experience worsening heat conditions.

Heat Island Effect

Heat distribution in Seattle is not uniform across the city due to factors like industrialization, impervious surface coverage, and tree canopy that intensify the urban heat island effect in specific areas. Northgate, for instance, has over 73% impervious surface. Many of these impervious surfaces are dark-colored, absorbing heat and raising local temperatures. This can create discomfort for pedestrians and make the ground too hot to touch, posing risks, especially for children and animals. These hot spots are noticeable in Northgate along I-5, particularly near the off-ramps to Northgate Way, the parking lots around Northgate Mall, and within the UW Northeast Medical campus.

Cooling Mitigation

Certain parts of Northgate exhibit cooler temperatures due to factors like tree canopy, vegetation, bodies of water, and lighter-colored or green roofs. For instance, Meridian Way, stretching from Evergreen Washelli cemetery to the North Seattle Campus, stands out as the coolest area within the Urban Center boundary. Additionally, Thornton Creek, along the southeast edge of Northgate's boundary, acts as a noticeable heat buffer and cooling zone.



Source: Absher Construction



More very hot days
(above 90°F)

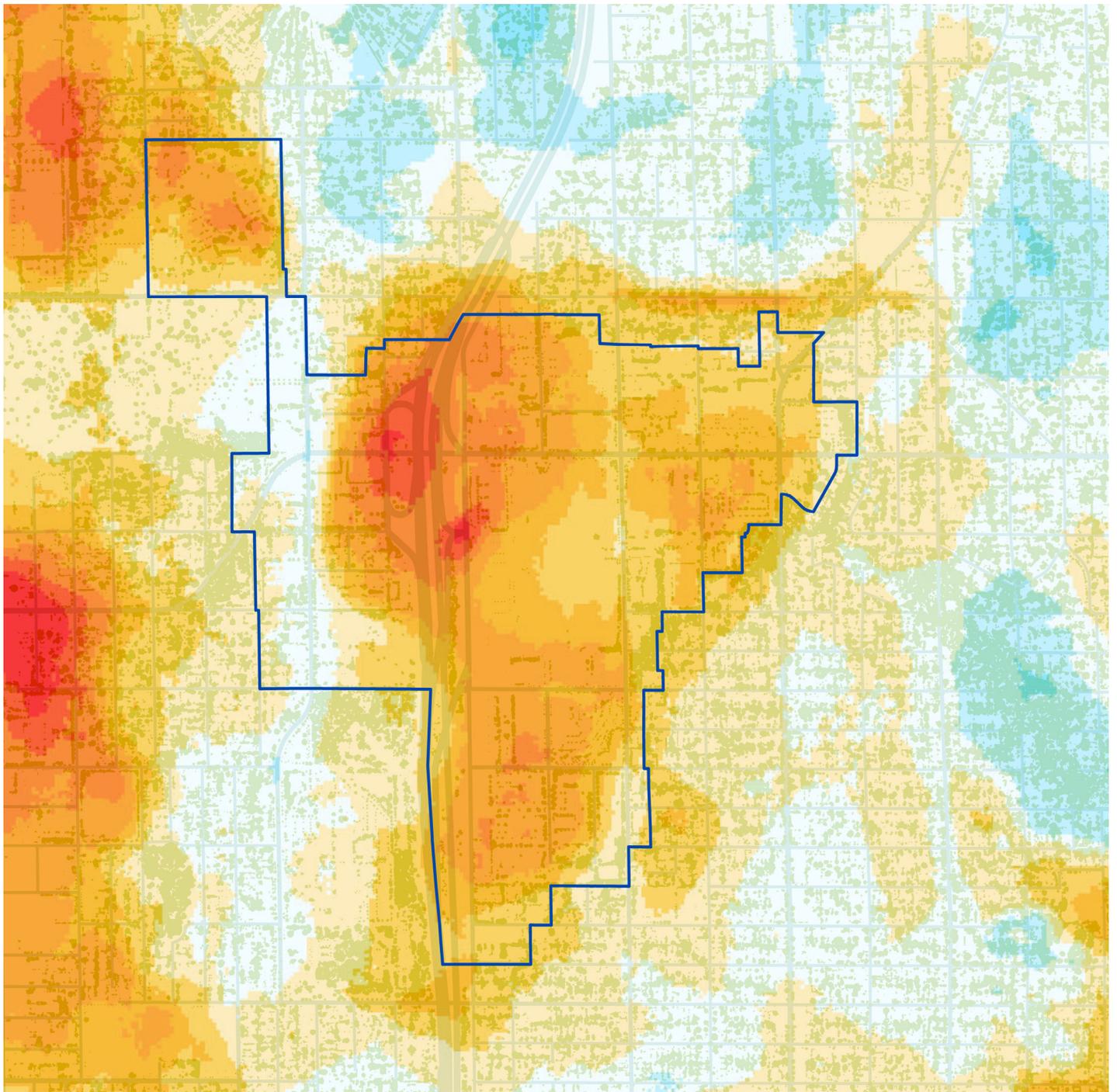
Change with 2.7°F
(1.5°C)



Change with 5.4°F
(3.0°C)



*King County 2020 Strategic Climate Action Plan



Afternoon Temperatures in Summer

86 °F-88 °F

89 °F-91 °F

92 °F-96 °F

○ Urban Center Boundary

Flood Risk

Seattle faces three types of flooding: coastal, riverine, and urban, all influenced by rising sea levels and heavy rainfall. While Northgate isn't directly on a coastal water body and thus not prone to coastal flooding, it is vulnerable to riverine and urban flooding. Within the Urban Center boundary, various smaller water bodies like Thornton Creek, Beaver Pond and Wetland, the Water Quality Channel, Campus Pond, and Victory Creek contribute to the local hydrology. Historically many of these bodies of water received runoff from surface level parking lots nearby during extreme rain events. However, after the reconstruction of the Water Quality Channel, there have been efforts to reroute stormwater runoff.

Riverine Floodings

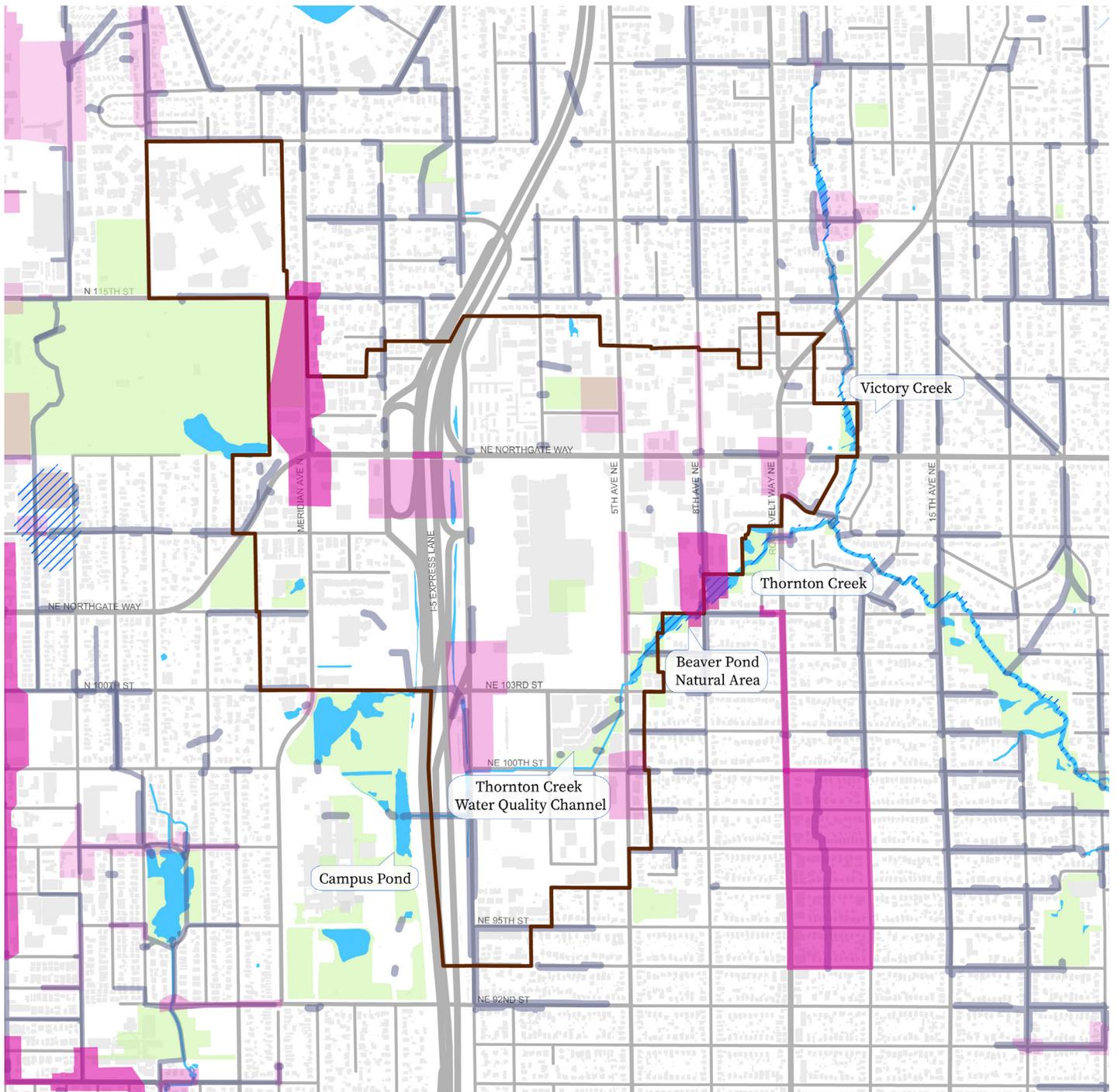
Extreme weather events can cause rivers to swell, resulting in overflow and riverine flooding. Warm spring temperatures can accelerate snowmelt, further contributing to river volume. This scenario is especially likely near Thornton Creek and Beaver

Pond, which pass through residential areas close to buildings. The riparian corridor, the flood-prone area surrounding Thornton Creek, intersects several key roads. Additionally, rising sea levels can elevate water levels near river mouths, potentially hindering Thornton Creek's drainage into Lake Washington. Riverine flooding also poses risks to the species residing in Thornton Creek.

Urban Floodings

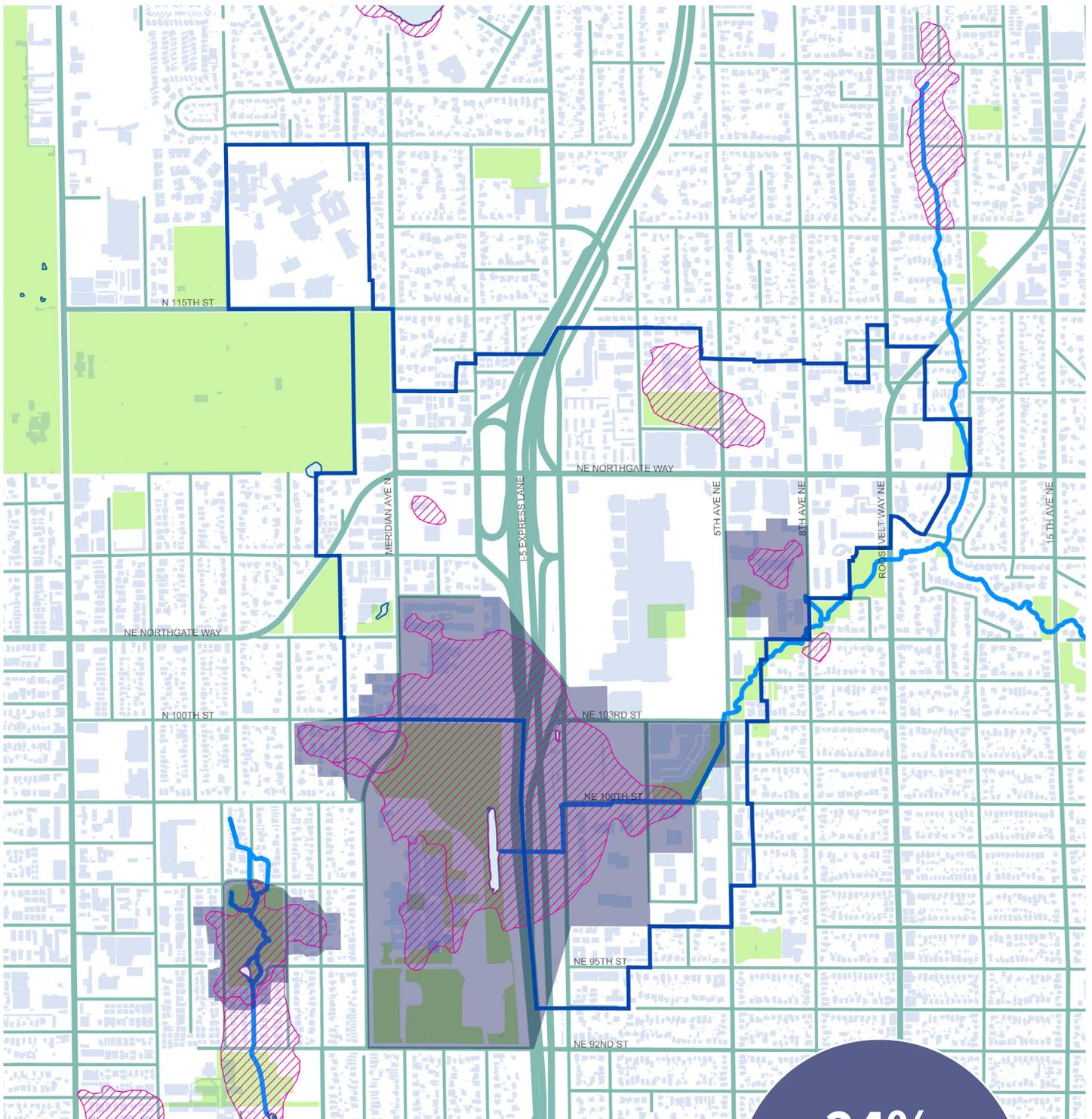
Several areas in Northgate are prone to drainage issues due to low-lying terrain and limited-capacity drainage systems. This increases the risk of flooding on roads and sidewalks, creating hazards for pedestrians and drivers. A notable problematic area is under the I-5 overpass along Northgate Way, a crucial route for both pedestrians and vehicles traveling between the East and West sides of the Urban Center. However, during heavy rain events, this area becomes particularly dangerous, especially for pedestrians. Additionally, Northgate's historical ecology as a kettle bog contributes to a high water table, making it difficult for floodwater to drain away in specific locations. This challenge is compounded by rising sea levels.

	Sea level Rise	Extreme Precipitation
Coastal Flooding	Sea level rise will worsen coastal flooding events, often associated with winter storms or high tide events. Exceptionally high tide events, such as King Tides can happen during winter storms.	Extreme precipitation events can lead to an influx of water volume from rivers and streams, potentially contributing to a “squeeze” effect that can amplify coastal flooding events.
Riverine Flooding	Sea level rise can raise water levels around river mouths and can reduce the capacity of rivers to discharge higher flows.	Extreme precipitation can increase river volume and flow, leading to river overflow and riverine flooding. Warm spring temperatures can lead to rapid snowmelt, increasing riverine flooding risks.
Urban Flooding	Sea level rise can raise groundwater tables, affecting conveyance systems and reducing capacity of flood water infiltration.	Extreme precipitation can increase the water volume and flow into low-lying areas, increasing urban flooding risk.



Urban Flooding

- Drainage Risk Area (potential urban flooding)
- Parks and Open Space
- ▨ Urban Flooding Area
- Capacity Constrained Drainage System
- Watercourse and Wetland
- Urban Center Boundary



Earthquake Vulnerability

-  Liquefaction Zone
-  Peat Settlement Zone
-  Parks and Open Space
-  Watercourse
-  Building
-  Urban Center Boundary

24%
of Northgate's
area is a peat
settlement zone

Earthquakes

Previous Earthquake Amplitude and Damage

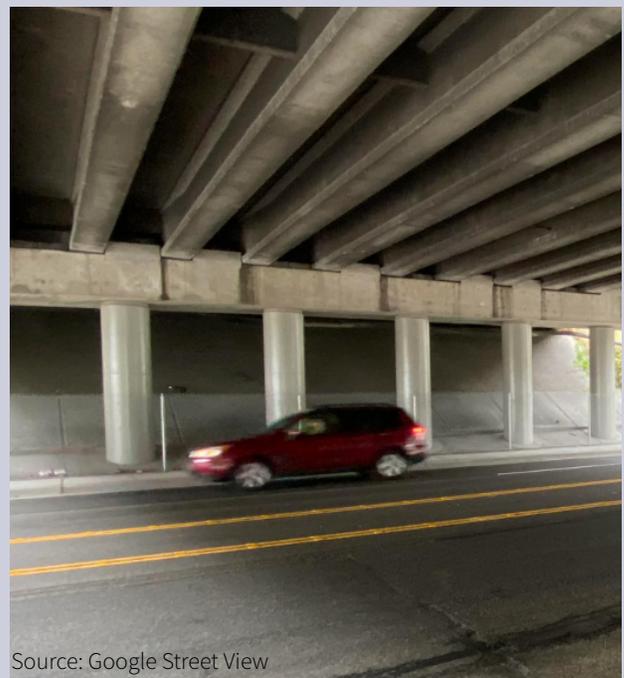
The Puget Sound area has experienced numerous earthquakes, mainly categorized as shallow or deep quakes. The recent Nisqually Earthquake, with a magnitude of 6.8, originated in the South Puget Sound and caused substantial damage to Seattle and its infrastructure. However, it didn't directly impact any structures within the Northgate Urban Center.

The primary seismic threat to Northgate stems from the Seattle Fault, which runs east-west through the city. The last earthquake on this fault occurred 1,100 years ago; its recurrence interval is estimated rather than predicted, with estimates ranging from 200 to 15,000 years. The potential magnitude of a Seattle Fault earthquake is projected to be around 7.0, according to the Seattle Office of Emergency Management.

Earthquakes can trigger a range of secondary impacts that could be particularly harmful in the Northgate region. These include landslides, fires, infrastructure failures, and the release of hazardous materials.

Peat Prone Settlement Areas

The southern part of Northgate faces earthquake vulnerabilities due to being classified as both a peat settlement zone and a liquefaction zone. About 24% of Northgate's land falls within the peat settlement zone, where the soil is soft and likely to shift during an earthquake. Fortunately, there are no unreinforced masonry buildings in this zone, but critical infrastructure like bridges supporting the Sound Transit Link and I-5 are present. This area is also earmarked for future development within the Urban Center boundary. To mitigate earthquake impacts, there are specific Environmentally Critical Area building codes for new construction in both peat settlement and liquefaction-prone areas.



Source: Google Street View

Recent Seismic Retrofits

The bridge supporting I-5 across Northgate Way recently underwent a seismic retrofit. Steel "jackets" were wrapped around the columns supporting the bridge to hold the concrete together during an earthquake, reducing the risk of collapse. Additionally, concrete and reinforcing steel were added between the girders that support the bridge to prevent movement during seismic events.

Greenhouse Gas Emissions

The City of Seattle tracks Greenhouse Gas (GHG) Emissions across the buildings, transportation, industrial, and waste sectors to help the City develop effective programs and policies designed to reduce climate impacts. The GHG inventory tracks “core emissions” which correspond to emission sources that the city can most directly and significantly impact. Most of the City’s climate policies and programs are aimed at reducing “core emissions”. However, the GHG Emissions inventory also tracks “expanded emissions” which correspond to community-wide activities and specific sectors. Some of these sectors provide detailed enough information to be measured at the census block level. While this does not exactly match the boundary of the Northgate Urban Center, it can still be used to understand trends in the surrounding area.

Seattle monitors neighborhood-level emissions on the One Seattle Climate Portal. Depending on the emissions sector, the data covers the years 2020-2023. Some data from the earlier years may reflect the unusual commuting and living patterns experienced during the COVID-19 pandemic. The COVID-19 pandemic shifted everyday lives due to stay-at-home orders and subsequent business closures in March 2020.

Building Emissions

Most of the northern neighborhood (Census Tract 12) in Northgate is highlighted for further discussion here due to its significant building emissions. This area has high concentrations of large commercial uses and therefore has much higher commercial emissions than residential. A building that consumes energy using gas creates higher emissions than the same energy consumption using electricity. At a city-wide level fossil gas and oil are responsible for 93.9%

of the city’s building emissions, but only account for 45.7% of the total energy consumed. (GHG Inventory, pg.19). Referring to the pie chart “Annual Emissions in Northgate (Census Tract 12),” electrical emissions are 11.9%, indicating a higher proportion of electrically powered residential buildings compared to surrounding census tracts. This is likely due to new construction in the Northgate Urban Center that relies solely on electricity. If new construction continues to avoid using gas and electricity generation becomes cleaner, greenhouse gas emissions from residential and commercial buildings should continue to decrease.

At the beginning of the COVID-19 pandemic, the building sector was impacted by office space closures and many shoppers took up e-commerce rather than visiting brick and mortar stores. This caused a shift of decreased energy consumption and waste from commercial buildings to an increased energy consumption and waste from residential buildings.

While the COVID-19 pandemic no longer requires the same shifts to daily lives and commuting patterns as it did in 2020 and 2021, work from home policies and commuting patterns continue to evolve and have not yet consistently returned to the patterns that existed before the pandemic. As a largely residential community, trends towards higher building emissions due to differing work from home policies may continue for some time.

Transportation Emissions

Neighborhoods along I-5 experience higher impacts from vehicle emissions (both passenger vehicles and trucks). While not all of these emissions are created by residents or workers within the Northgate boundary, this does create air quality impacts within the neighborhood along I-5. During the COVID-19 pandemic, transportation emissions decreased as working from home became the norm and commuter traffic dropped sharply. As restrictions have eased, personal vehicle travel patterns are ticking back up to their previous levels. However, public transit ridership has yet to see the same rebound.

Similarly, walking and biking patterns have remained

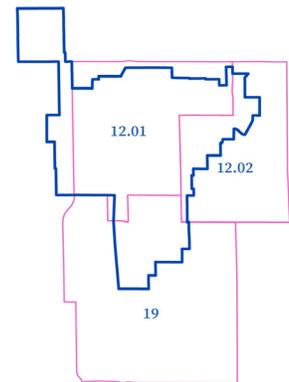
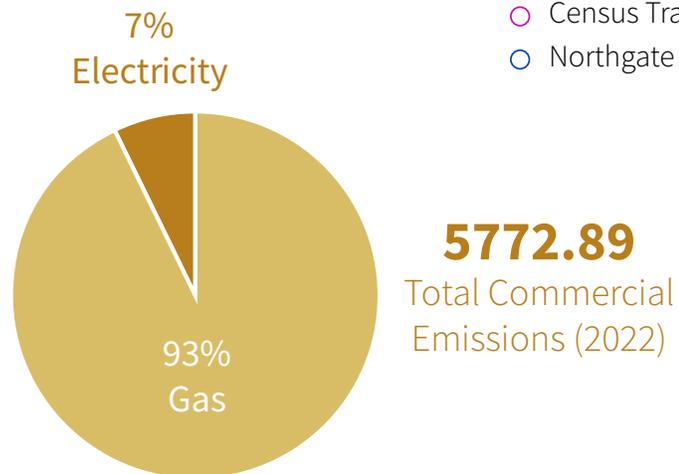
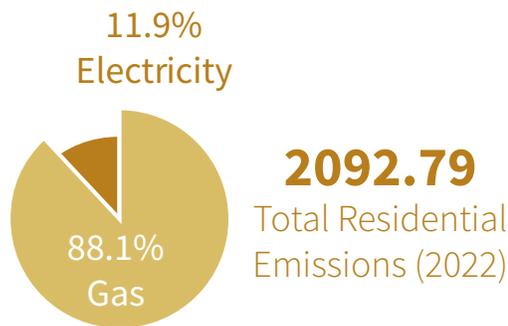
largely unchanged among residents. Investments in safe pedestrian and bike infrastructure to community destinations and transit options would also help to reduce emissions.

The City of Seattle has made significant efforts to promote transportation electrification and reduce single-occupant car trips. In Northgate, there are 11 public-usage EV charging locations. In 2019, the City passed an ordinance requiring a minimum number of parking spots to be either reserved for EVs or equipped with EV charging capabilities. Additionally, the City aims to have an entirely fossil fuel-free transportation fleet by 2030.

Waste: Garbage Tons by Sector

Organics (food and yard waste and compostable food service ware) in the garbage are the biggest contributor to GHG emissions from landfills. In Seattle, organic waste is municipally collected for composting and is prohibited from disposal in the garbage. However, waste consumption studies show that these materials, especially food waste, are still being disposed of in the garbage/landfill stream. More than 30% of garbage is food waste that could be composted and avoid methane emissions that contribute to climate change.

Annual Emissions¹ in Northgate(Census Tract 12)



Northgate Census Tract
 ○ Census Tract
 ○ Northgate

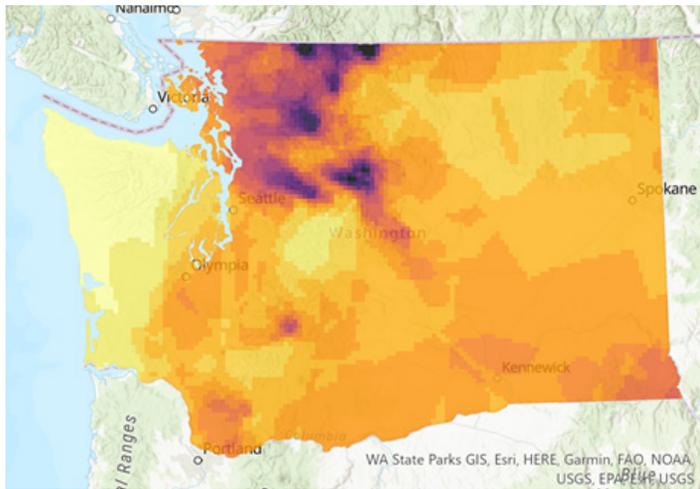
¹ Data Source: [One Seattle Climate Portal](#). Emissions data is provided at the neighborhood level and is measured in metric tons of carbon dioxide-equivalent (MTCO_{2e}).

Air Quality

Wildfire Smoke Impacts

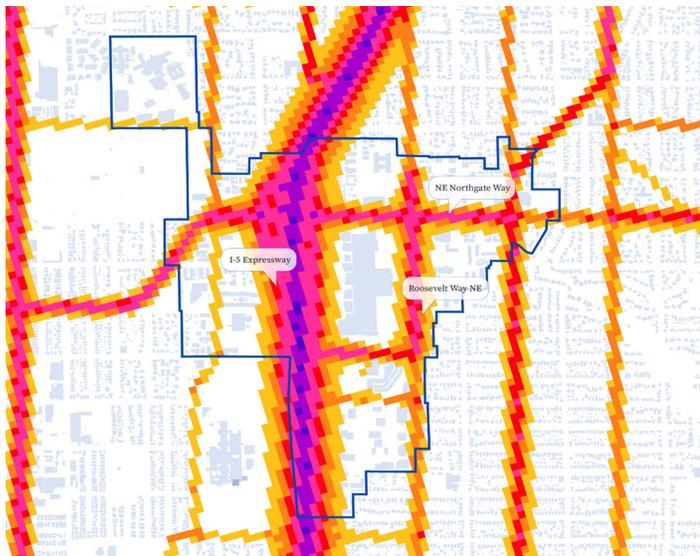
Wildfires in Washington State become more frequent, and their intensity has also increased (Welty & Jeffries, 2020). Exposure to wildfire smoke poses health risks for vulnerable groups such as the elderly, youth, low-income communities of color, outdoor laborers, and the uninsured.

Wildfire smoke days have become an annual occurrence since 2015. However, the Seattle and Northern Cascades region experienced an exceptionally bad fire season from August to October in 2022. A high-pressure weather system trapped smoke in the area, leading to unusually late air quality alerts that extended into mid-October (State of Washington, Department of Ecology, 2022).



of Wildfire Smoke Days 2022

- > 30
- 25-29
- 20-24
- 15-19
- 10-14
- 5-9
- 0-4



Noise Level

- > 90.0
- 80.0-89.9
- 70.0-79.9
- 60.0-69.9
- 55.0-59.9
- 50.0-54.9
- 45.0-49.9

I-5 Noise

Traffic noise exposure consists of several factors: the volume of vehicles per day, the speed of those vehicles, the number of those vehicles that are medium and heavy trucks, the distribution of those vehicles during daytime and nighttime hours, and the proximity of noise sensitive receivers to the roadway.

In the Northgate Urban Center, there is notable roadway traffic and rail noise along the western edge, primarily from the I-5 expressway and the Sound Transit Link 1 Line. Noise levels immediately adjacent to I-5 range from 50 dBA to 75 dBA. (DEIS, pg.3.5-14) Recommended noise levels are closer to 40 dBA. Roosevelt way NE, along the eastern edge of the urban center's boundary is also a major traffic corridor. Decibel levels between NE Northgate Way and 80th St were measured at 60 dBA approximately 70' off of the roadway. This section of Northgate (between NE Northgate Way and 80th Street) was analyzed in alternative impact scenarios for the DEIS. In all 5 scenarios, there was no significant increase in noise levels.

The Washington State Department of Transportation (WSDOT) has constructed noise walls throughout various areas of Seattle to mitigate the impacts of noise from I-5 on adjacent neighborhoods. Advocacy for noise walls along residential sections of Northgate alongside I-5 could alleviate the negative impacts of noise on residents.

Climate Change Threats

Seattle and the broader Puget Sound region are already feeling the effects of climate change, including warmer temperatures and more frequent extreme weather events. These impacts are expected to worsen under various future climate scenarios, which vary based on the ability to reduce greenhouse gas emissions and improve adaptation strategies. While Northgate is not at risk for sea-level rise due to its inland location, it is particularly vulnerable to other climate-related threats such as earthquakes and extreme heat.

Among other areas in the city, earthquakes and extreme heat may disproportionately affect Northgate. The Puget Sound area is susceptible to earthquakes, primarily from the Seattle Fault, which runs east-west through the city. The southern part of Northgate is especially vulnerable since it is a peat settlement and liquefaction zone. Critical infrastructure such as I-5, is present in this area. Recent seismic retrofits, like the I-5 bridge, have improved resilience, but a continued focus on building codes and infrastructure reinforcement is crucial due to these vulnerabilities.

Rising temperatures also pose a significant threat to Northgate. Over the past century, Washington State's average temperatures have risen, leading to more days with high heat, heat-related illnesses, and other environmental impacts. Northgate is particularly vulnerable to extreme heat due to the urban heat island effect. Its high impervious surface coverage worsens heat island effect, posing significant public health risks, especially for vulnerable populations.



Extreme Heat

Mortality rates in Seattle from all causes are estimated to increase by up to 7.7% when regional temperatures exceed 82°F. Seattle experiences 25 days above 82° per year, on average, equating to a loss of 8 – 15 lives each year due to extreme heat. (Earth Economics, Tahoma, WA)



Inland Flooding

According to the State of Washington Department of Ecology, across the state, the costs of flooding exceed all other natural disasters. In any given year, there is a better than an 80% chance that 10 or more floods will occur, including inland flooding.



Landslides

The Seattle Office of Emergency Management has identified 8.4% of the city's surface covered by areas identified as slide prone. 81% of the slide-prone area is zoned for open space, the right of way, or single-family residential areas, including parts of Thornton Creek.

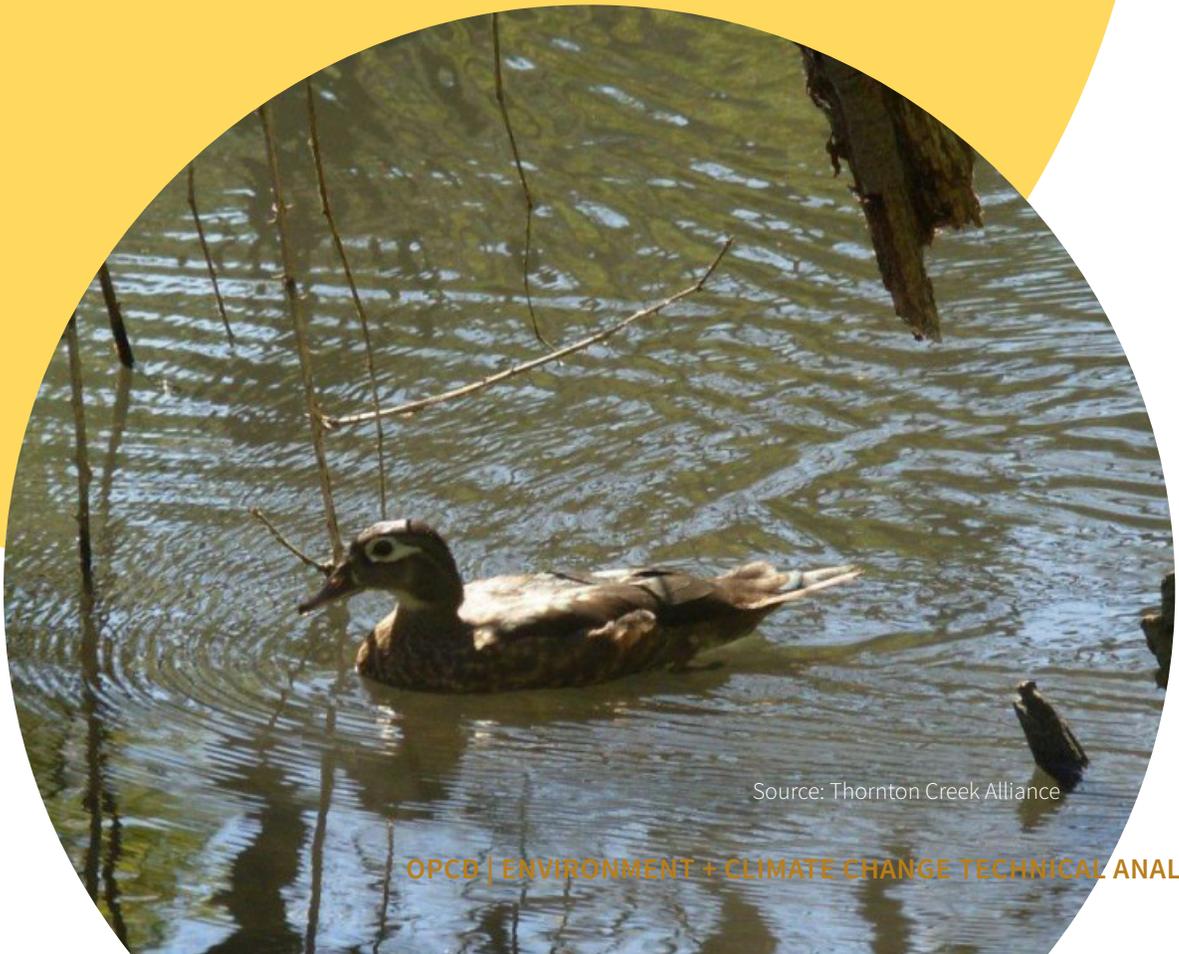


Smoke

King County is predicted to have 21 days this year with an air quality index over 100, a level deemed unhealthy for sensitive groups, according to the First Street Foundation and Puget Sound Clean Air Agency. The vast majority will be caused by heat waves and wildfire smoke.

Environment

Natural and Built

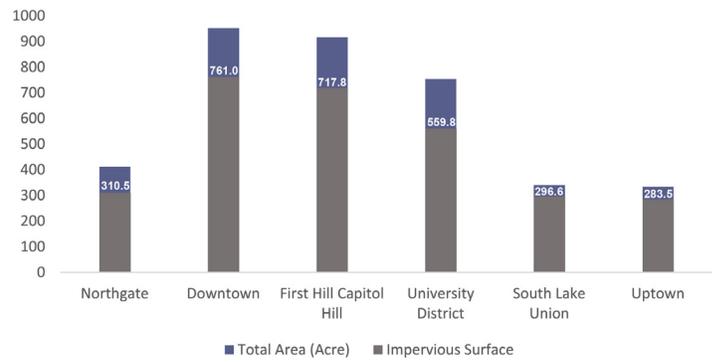
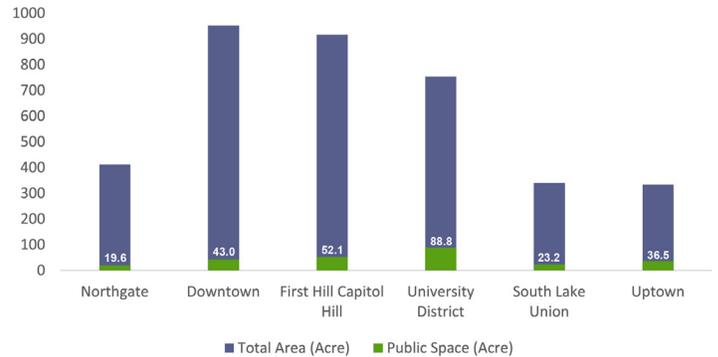


Source: Thornton Creek Alliance

Environmental Amenities

Northgate's built environment is characterized by a mix of natural and developed features. The area offers 15% tree coverage, but 73% is covered by impervious surfaces including buildings, roads, and parking lots, which increase runoff and flood risk.

Despite having two crucial water bodies - Thornton Creek and Beaver Pond - only 5% of Northgate is designated as open space. Additionally, 24% of the area lies in a peat settlement zone, presenting construction challenges due to soil instability. Balancing development and environmental health is a significant issue for Northgate.



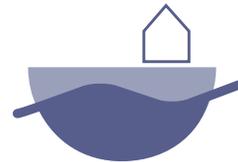
15%
of Northgate
has tree
coverage



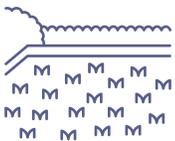
73%
of Northgate is
impervious
(buildings, roads, parking lots)



2
Waterbodies



24%
of Northgate is
within a peat
settlement zone



5%
of Northgate
is open space

Environmental Critical Areas

Environmentally Critical Areas (ECAs) are vital areas for maintaining ecological balance, preventing natural hazards, and protecting water quality. These areas are regulated to ensure that development activities do not compromise their essential functions. Key ECAs in Northgate include wetlands, steep slopes, peat settlement areas, liquefaction-prone zones, and riparian corridors.

Wetlands

Historically, Northgate was dominated by extensive wetlands, especially in the areas where Northgate Mall and North Seattle College now stand. Due to urbanization, most of these wetlands have vanished. Presently, wetlands are dispersed throughout Northgate, mainly along Thornton Creek and near I-5. These wetlands play crucial ecological roles, such as water filtration, flood control, and providing habitat for diverse plant and animal species. Urban growth has diminished the size and connectivity of the wetlands in Northgate, and changes to natural water flows and the presence of non-native plants have further compromised their ecological health.

Steep Slope

Steep slopes are prevalent in certain parts of Northgate, notably along I-5, 5th Avenue, and 95th Street. These areas have gradients of 40% or more, making them highly prone to erosion and landslides. Additionally, steep slopes hinder walking accessibility to certain open spaces, especially along 5th Ave, which is an essential access route to Thornton Creek.

Peat Settlement Areas

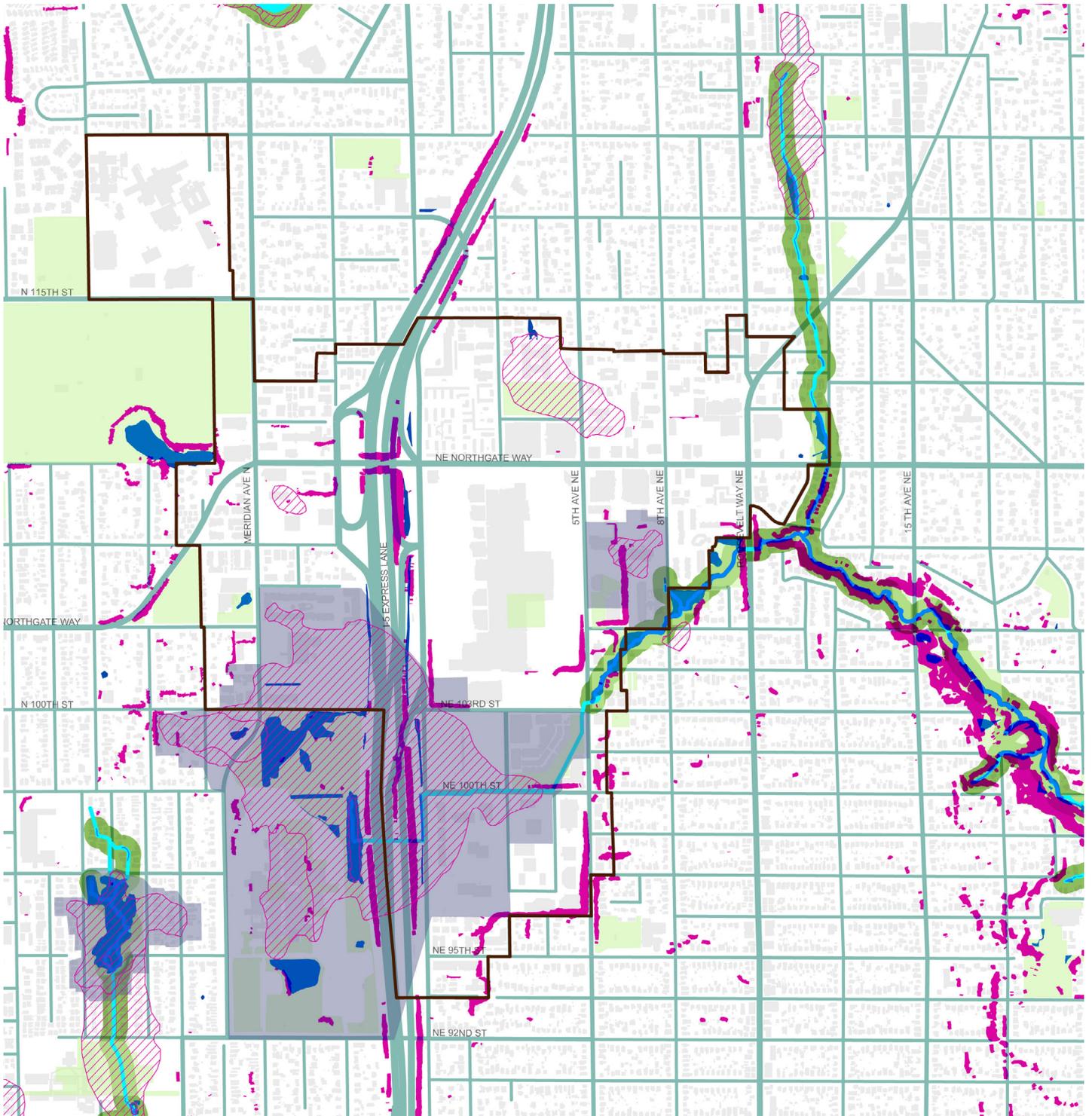
In Northgate, peat settlement areas are mainly found in the southern part and between 5th Ave and 8th Ave. These regions have significant deposits of organic peat soil, known for their high organic content, water retention, and compressibility. This leads to challenges such as ground instability, subsidence risk, and drainage problems.

Liquefaction-Prone Zones

The liquefaction-prone zones are primarily located in southern Northgate, around North Seattle College. Soils in these liquefaction-prone areas are often water-saturated, making them susceptible to liquefaction during seismic events. This poses risks to critical infrastructure, such as bridges supporting the Sound Transit Link and I-5, as well as future development in the area.

Riparian Corridors

Riparian corridors, which are limited within the Northgate urban center boundary, primarily exist along Thornton Creek. These areas play a vital role in maintaining local biodiversity, water quality, and ecological balance. The riparian corridor in Northgate is under significant pressure from urban development. Additionally, pollution from runoff and invasive species degrade water quality and harm the biodiversity and structure of the riparian habitat.



Environmental Critical Areas

- Wetland
- Steep Slope
- / Liquefaction Zone
- Peat Settlement Zone
- Riparian Corridor
- Watercourse
- Parks and Open Space
- Buildings
- Urban Center Boundary

Water and Creek

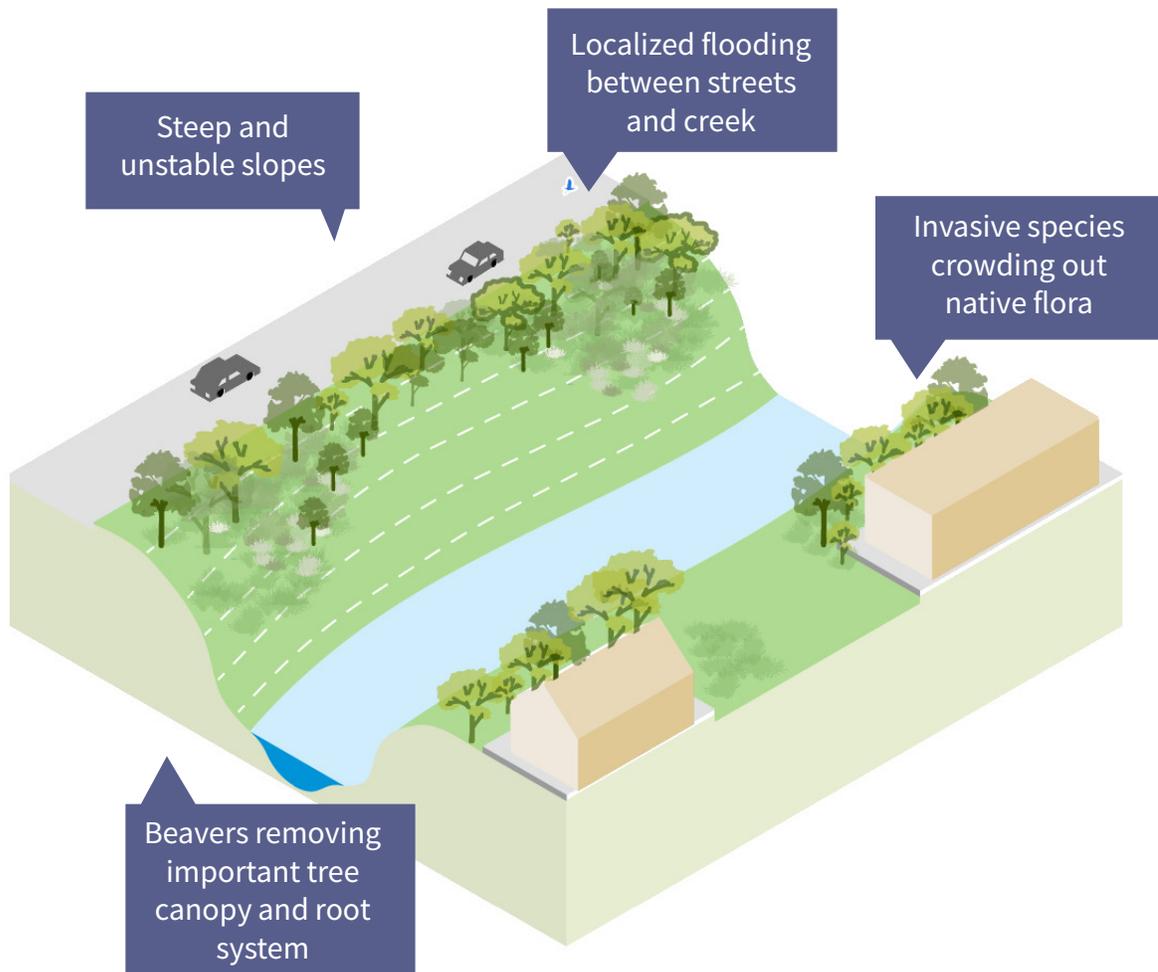
Water Drainage Patterns

Historically, Northgate was covered by extensive wetlands, particularly around the areas now occupied by Northgate Mall and North Seattle College, which were large bogs. These wetlands have mostly disappeared due to urbanization, altering the natural drainage patterns. Today, Northgate's water drainage is significantly influenced by its urban landscape and the presence of Thornton Creek. The area's topography, with gentle slopes and flat areas, directs surface water towards the creek, which serves as the primary drainage basin. The transformation of land for residential, commercial, and infrastructure purposes has modified natural water flow paths, frequently resulting in localized flooding during heavy rainfalls.

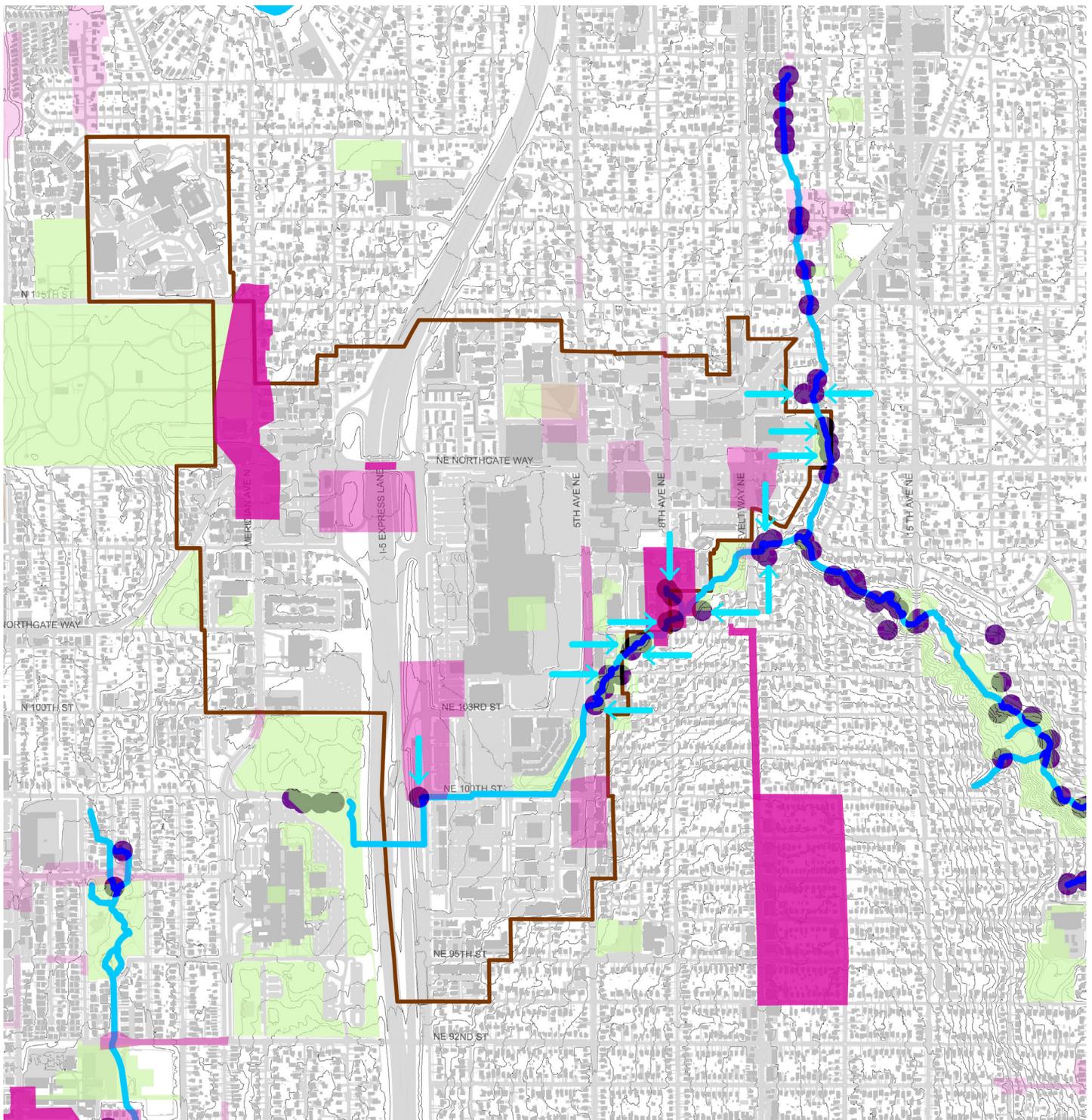
Impervious Surfaces and Drainage Risk Areas

73% of the Northgate area is covered by impervious surfaces such as buildings, roads, and parking lots. This extensive impervious coverage significantly reduces the land's ability to absorb rainwater and increases surface runoff. These challenges not only worsen flooding risks, but also contribute to erosion of stream banks and degradation of water quality in Thornton Creek.

There are three critical drainage capacity risk areas within the Northgate urban center: the eastern area of Evergreen Washelli Cemetery, the intersection of 8th Ave NE and NE 105th St, and the I-5 underpass along Northgate Way. These areas face severe drainage issues due to high concentrations of impervious surfaces and often insufficient stormwater infrastructure.



Existing Environmental Issues in Thornton Creek



Drainage Pattern

Drainage Risk Area (potential urban flooding)

- Critical Risk
- High Risk
- Medium/ Medium Low Risk
- Parks and Open Space

- Drainage Wastewater Outfall
- Flow Direction
- Watercourse
- Contours
- Urban Center Boundary

Thornton Creek

River Ecosystem and Important Habitats

Thornton Creek supports a diverse river ecosystem that is crucial for maintaining local biodiversity in Northgate. The creek and its surrounding riparian zones provide important habitats for various species, including beaver, heron, etc. The health of these habitats is closely linked to the overall ecological integrity of the creek, making it essential to protect and restore these areas.

Water Quality and Conservation

Thornton Creek runs through some of the most developed areas in the Puget Sound Region, as well as over 700 backyards and 15 City Parks. It is an important component of Northgate's ecosystem, serving as a primary drainage basin for the area. Currently, Thornton Creek has numerous water quality problems including fecal coliform bacteria, dissolved oxygen, temperature, and pesticides in summer; and turbidity, total suspended solids, zinc, total phosphorus, and nitrogen during storm events. These contaminants degrade the water quality and threaten the creek's ecological health.

Drainage and Wastewater Outfalls

Thornton Creek receives both stormwater and wastewater discharges from various outfalls located throughout Northgate. The outfalls are crucial points where the collected water from urban

drainage systems is released into the creek. However, these discharges often carry pollutants, including sediments, oils, heavy metals, and organic matter, which can severely impact the aquatic ecosystem, posing significant environmental and public health risks.

Upgrading the drainage and wastewater systems to prevent direct wastewater outfalls is essential for mitigating these impacts and protecting the ecological integrity of Thornton Creek. Implementing additional green stormwater infrastructure projects, such as the water quality treatment project at Thornton Creek (described on page 38), or smaller interventions, can help filter stormwater before it reaches the creek.

Run off and Trails

The management of runoff in Northgate is complicated by the lack of clear trails along Thornton Creek, which makes access and maintenance more challenging. Uncontrolled runoff from urban areas often leads to erosion, sedimentation, and habitat degradation along the creek banks. The Beaver Pond and Wetland area of Thornton Creek has experienced degradation due to direct runoff from the Northgate Mall parking lot (see details on the next page). Areas like NE 105th St have obscured signage and poorly marked trails, hindering effective maintenance, conservation activities, and recreational use. Additionally, poor sidewalk quality makes accessing Thornton Creek difficult.



9th Ave NE

Source: Google Earth



NE 106 th St

Source: Google Earth



NE 105 th St

Source: Google Earth

Beaver Pond and Wetlands

Historic Wetland Degradation

The wetlands around Beaver Pond at 105th Street and 8th Avenue NE have historically suffered significant degradation, largely due to surface-level parking runoff from the nearby Northgate Mall site. The runoff severely degraded the wetlands' water quality and ecological health. The loss of natural vegetation and altered water flow further led to habitat destruction and reduced biodiversity, which weakened ecosystem resilience.

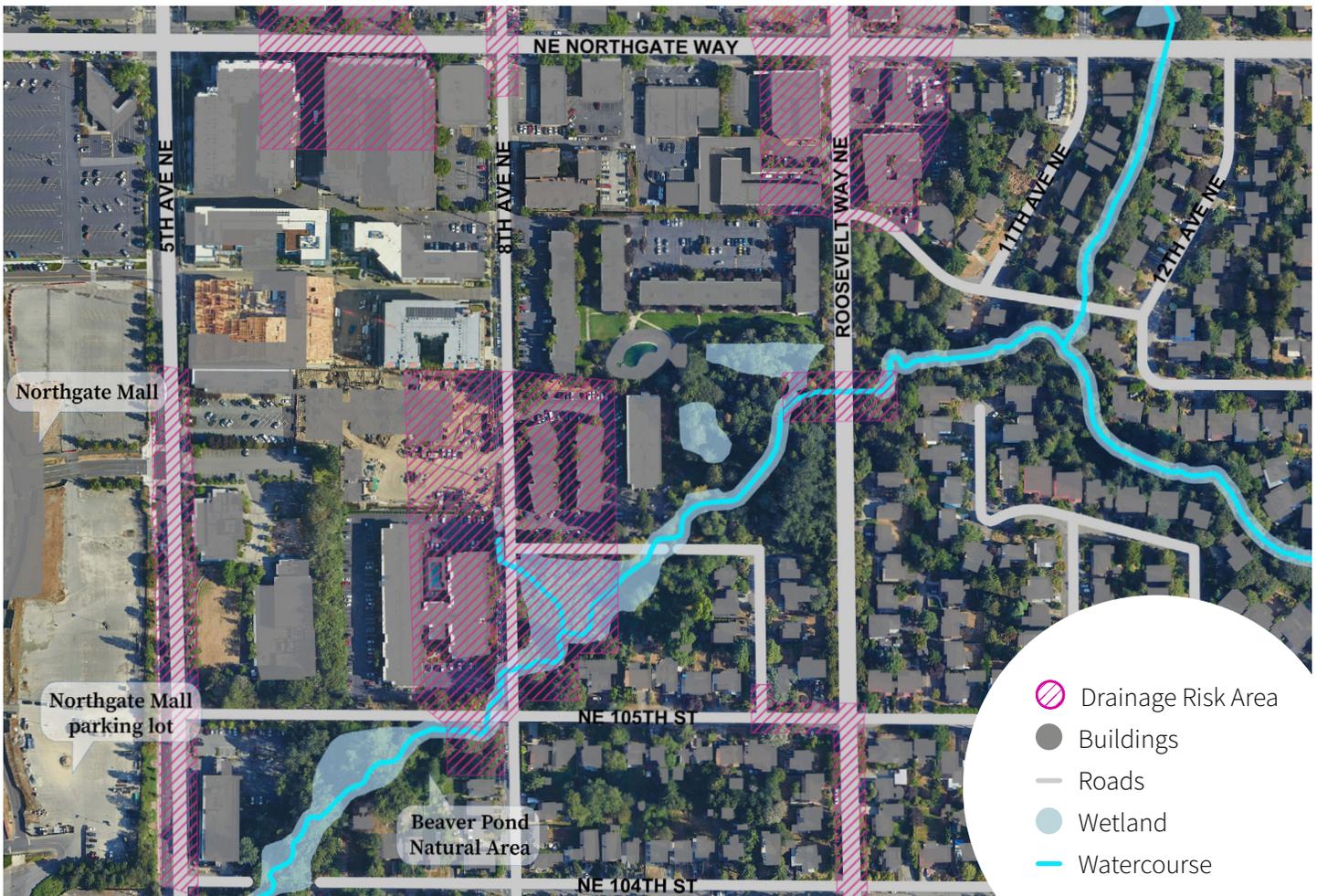
Recent Clean Up Efforts

In recent years, substantial efforts have been made to clean up and restore the Beaver Pond and nearby wetlands. The Northgate Mall parking lot has been

redesigned with vegetative mini-swales to detain water and retain pollutants. Rerouting surface runoff from the mall has been a crucial initial step in reducing pollutant influx.

Seattle Public Utilities, Seattle Parks and Recreation, and the Thornton Creek Alliance have spearheaded a range of initiatives aimed at rehabilitating the wetlands. These efforts include removing invasive species and enhancing water quality through the installation of bioswales and other green infrastructure. Collaboration between these organizations has been instrumental in restoring the ecological balance of the wetlands.

Looking ahead, the future possibilities for the Beaver Pond areas are promising. Continued restoration efforts are expected to further improve water quality and habitat conditions, supporting a diverse array of wildlife and plant species.



Native Species

Thornton Creek and its surrounding areas in Northgate provide essential habitats for a variety of native species. Beavers are among the notable residents. Beavers prefer slow-moving streams and ponds where they can construct their lodges and dams from trees and vegetation found nearby. These industrious animals build dams that create wetlands, which offer a rich environment for other wildlife.

Native birds, like Heron, also thrive around Thornton Creek. These birds are typically found in wetlands, marshes, and along creek banks, where they hunt for fish, amphibians, and insects.

Salmon Reintroduction Efforts

Historically, Thornton Creek was home to salmon, an essential species for the local ecosystem. However, due to urban development, stream disconnections, and the disappearance of bogs, salmon populations

have been excluded from the Northgate section of the creek, disrupting the natural functions that once enabled the ecosystem to thrive. Currently, Thornton Creek within Northgate is not fish-bearing, with salmon populations being nonexistent in this area due to habitat degradation and urbanization.

Efforts are underway to reintroduce salmon in other parts of Thornton Creek outside of Northgate. One notable effort is the Thornton Creek Salmon Habitat Restoration project in the Meadowdale neighborhood of Seattle. In 2014, this project restored the creek's shape and flow to create favorable conditions for salmon, such as clean, oxygen-rich waters with cool temperatures. As a result, Chinook salmon returned in 2018 for the first time in twenty years. These reintroduction efforts not only aid in the recovery of salmon populations but also indicate broader environmental improvements, benefiting all species in the ecosystem.

Thornton Creek runs through some of the most developed areas in the Puget Sound Region, as well as over 700 backyards and 15 City Parks



Beaver



Wood Duck



Ragged Dragonfly



Heron



Owl



Racoon



Bats



Crayfish



Muskrats



Cardinal Meadowhawk
Dragonfly

Tree Canopy

Tree Canopy Loss

Northgate is surrounded by some large green areas but lacks a continuous tree canopy within the area. Although existing trees have grown and people have planted many trees in recent years, net tree loss persists. From 2016 to 2021, Northgate lost 18.55 acres of tree canopy, equating to 4.5% of the Northgate urban center area. Despite the addition of 15.06 newly recognizable acres, there was a net reduction of 0.85% in canopy coverage, decreasing from 16.17% in 2016 to 15.32% in 2021.

Tree canopy loss in Northgate is distributed throughout the area, but is particularly noticeable in certain regions. Due to urban development in recent years, significant tree canopy losses are observed along I-5 Express and 1st Ave NE, where the new transit line has been built. Additionally canopy loss can be seen in the western residential areas and the natural areas around Thornton Creek.

The City of Seattle has committed to achieving 30% canopy coverage. Planting new trees along public rights-of-way and within large-scale private developments can help reach this goal. A noticeable lack of tree canopy exists at the Northgate Mall site. Additionally, planting trees along the I-5 expressway can help buffer noise and pollution from vehicular

traffic.

Tree Ownership

A significant majority of the trees, 75%, are located on private property. Trees maintained by SDOT, primarily along streets and public right-of-ways, make up a notable portion of the public tree population. A smaller segment of public trees are found in parks, municipal properties, community centers, public schools, and other city-managed areas. This distribution emphasizes the importance of tree planting efforts on both private property and public property to enhance and preserve tree canopy in Northgate.

The Trees for Neighborhoods program, operated by the City of Seattle, provides free trees and offers training on planting and maintenance to help residents care for trees in their yards or along their streets.

Tree Species Vulnerability

Approximately 80% of the trees in Northgate are deciduous, and this includes most of the street trees. Maple trees are a prominent feature in Northgate's streetscape, known for their vibrant fall foliage. However, maples are highly susceptible to pests such as the Asian longhorned beetle and diseases like verticillium wilt. Other common street tree species, including tulip trees, sweetgums, red oaks, and lindens, also face threats from various pests like beetles and diseases such as wilt and leaf spot. All trees in Northgate require targeted management strategies to ensure their health and resilience.

Street Trees



13%

Maples have vibrant fall foliage. They face pests like the Asian longhorned beetle and diseases like verticillium wilt.



11%

Tulip trees have tulip-shaped flowers and grow very tall. They are threatened by pests like tuliptree scale and diseases like verticillium wilt.



8%

Sweetgums have star-shaped leaves and spiky fruit, with colorful fall foliage. They are vulnerable to pests like the sweetgum scale and diseases like leaf spot.



6%

Red oaks are valued for their strong wood and pointed leaves. They can be attacked by pests like the oak wilt beetle and diseases like oak wilt.



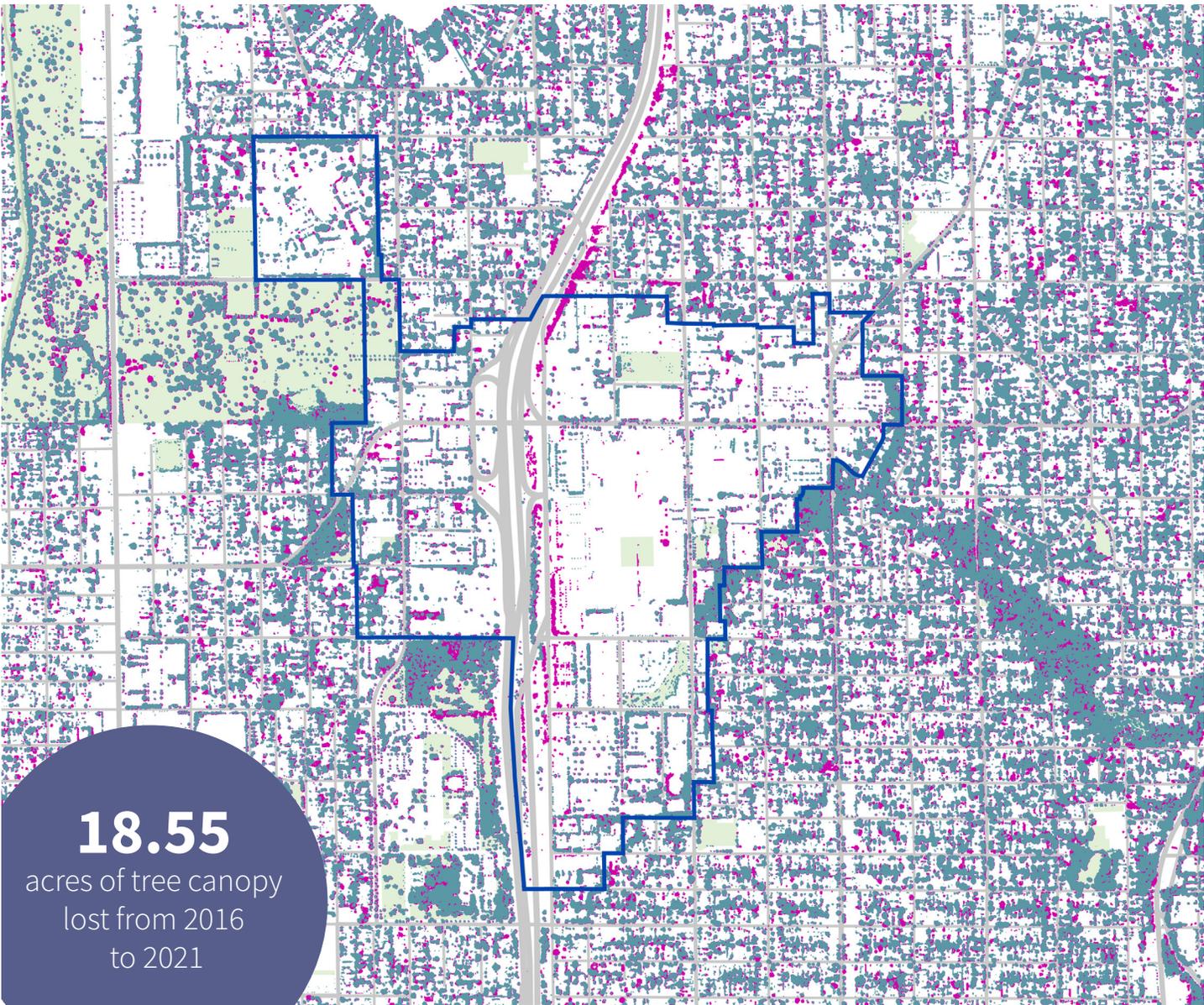
5%

Littleleaf Lindens have heart-shaped leaves and fragrant flowers. They are prone to pests like aphids and diseases like leaf spot.



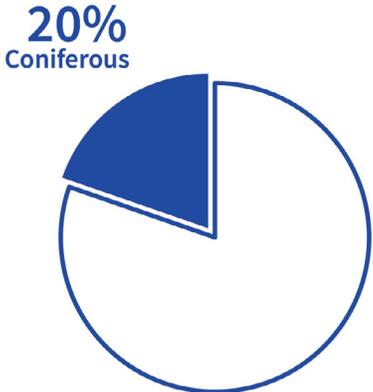
57%

OTHER TREES

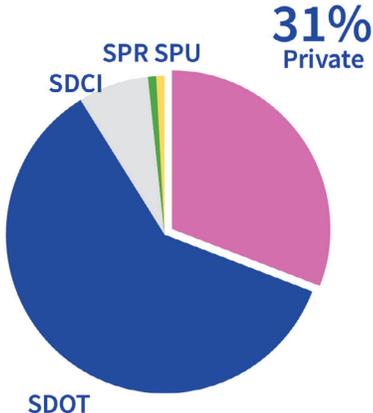


18.55
acres of tree canopy
lost from 2016
to 2021

Tree Type



Tree Ownership



Tree Canopy Loss

- Tree Canopy 2021
- Tree Canopy Loss since 2016
- Parks and Open Space
- Roads
- Urban Center Boundary

New Development

Daylighting of Thornton Creek

Environmentally responsible building practices have improved the neighborhood. One of the most significant recent developments in Northgate is the Daylighting of Thornton Creek at Thornton Place, which was developed by SPU, with funding support from Washington State Department of Ecology. Daylighting involves uncovering a previously buried segment of the Thornton Creek, restoring it to a more natural state. The channel improves water quality by using native plants to slow down stormwater flows, which allows sediment and associated pollutants to settle out. As the plants have taken root, native birds and insects have been observed inhabiting the channel landscape. Cleaner water also helps increase chances for salmon to survive in the broader urban creek watershed. Beyond the stormwater management and wildlife habitat benefits, the project also created a vital new public space for residents and visitors.

Current Green Building Practices

Northgate's new developments are increasingly incorporating green building practices to promote sustainability and environmental stewardship. City-owned properties have adopted the Sustainable Buildings Policy, which requires new construction and major renovations over 5,000 square feet to meet LEED Gold standards. Smaller projects use the Capital GREEN evaluation tool to ensure sustainability.

To reduce climate pollution from buildings, Seattle offers incentives for projects that use clean energy and conserve resources. These include additional height, floor area, or expedited permits for meeting green building goals. Programs like Priority Green Expedited, Green Building Standard, Living Building Pilot Program, and the 2030 Challenge provide benefits for achieving high sustainability standards.



Source: ArchDaily

Existing Plant Communities

Barton Woods Plant Communities

Barton Woods exists as one of the few large green spaces found in the Northgate area. It also sits adjacent to the wetlands found on the North Seattle College campus which is what remains of the historic wetlands that once existed here. The plantings found throughout the site are a mix of natives, non-natives that were common for park design in the 20th century, and invasives that have slowly encroached on the site, most notably Himalayan Blackberry, a hardy and fast-spreading species that overtakes the forested edges of nearly the entire park.

The native species found throughout the park seem as though they were planted long ago with varying degrees of intention in their placement, but have over time been managed less and don't create a cohesive ecosystem that relates to the ecological history of the site. There are meadows throughout the site, but are mostly covered in what appeared to be Creeping

Bentgrass or another type of successive grass species that grows when the original planted lawn has been overtaken. This, along with the “throw anything and see what sticks” kind of palette with the trees seems like this park hasn't been thoroughly examined from a holistic or ecological perspective in quite a while, and also needs intervention to remove the sheer volume of Himalayan Blackberry and Ivy that have taken over large swaths of the site.

Thornton Creek Plant Communities

The Thornton Creek area immediately northeast of the intersection of NE 103rd St and 5th Ave NE is more intricately managed than Barton Woods, and that shows from the prevalence of natives in the area. There are also a number of newer plants with protection throughout that show the intentional management of the ecosystem here. There is a prevalence of invasives, particularly along 105th St, where the plants seem to become less managed as Thornton Creek approaches the Beaver Pond Natural Area. This makes sense, as the Thornton Creek Water Quality Channel is on the other end of this daylight portion of the creek and was established much more recently than the beaver pond or Barton Woods.



Barton Woods Identifiable Plant Species

TREES	SHRUBS	GROUNDCOVER
Black Locust	Osberry	Himalayan Blackberry
Cascara/ Buckthorn	Oregon Grape	Herb Robert
Common Alder	Common Holly	Creeping Bentgrass (?)
Black Cottonwood	Sword Fern	Common Velvet Grass
Western White Pine		Reed Canary Grass
Norway Maple		Bitersweet Nightshade
Western Redcedar		English Ivy
Douglas Fir		Perennial Pea
Bigleaf Maple		
Common Hawthorn		
Sitka Spruce		
Pacific Madrona		
Pacific Willow		
Scotch Pine		
Alaska Yellow Cedar		
Ponderosa Pine		
Western Hackberry		
Tulip Tree		

Thornton Creek Identifiable Plant Species

TREES	SHRUBS	GROUNDCOVER
Douglas Fir	Snowberry	Skunk Cabbage
Big Leaf Maple	Oregon Grape	English Ivy
Vine Maple	Western Sword Fern	Horsetail
Sweetgum	Lady Fern	Reed Canary Grass
Western Redcedar	Rose Spirea	
Flowering Dogwood	Bindweed	
Oregon Ash	American Silverberry	
Western Hemlock	Cherry Laurel	
Mountain Ash	Salmonberry	
Common Hawthorn	Wintergreen	
Black Cottonwood	Purple Flowering Raspberry	
	Elderberry	
	Field Rose (?)	
	Huckleberry	
	Nipplewort	
	Spotted Jewelweed	

■ Native Plants
■ Non-Native Naturalized

■ King County Weeds of Concern
■ Non-Regulated Noxious Weeds

Historical v. Present Day Plant Species

Barton Woods

Barton Woods has a large number of native plant species currently on the site, most notably in the prevalence of a diverse tree canopy, and has a small number of understory plants that are also native. The most notable difference is in the open prairie areas, which are mostly covered in lawn and aren't filled with a diversity of historically significant prairie ecosystem plants. Knowing that these plants aren't present on the site highlights the most noticeable gap between what these ecosystems once looked like and what they are today. The other glaring difference, of course, is the almost complete absence of a functional wetland ecosystem. There is wetlands located on the North Seattle College campus along Interstate 5, but beyond that, where Barton Woods stands, the small wetland areas are mostly filled with Reed Canary Grass (*Phalaris arundinacea*) which is a known invasive species and doesn't serve the local ecosystem.

Because of the lack of understory plant species, the area does little to serve the pollinator population in the area, which means the ecologically beneficial function they serve is distinctly lacking. Without these plants, especially the fruit-bearing plants, this means there is also little to serve wildlife in any significant way. The most prevalent fruit-bearing species on the site is the Himalayan Blackberry, which is a known noxious weed in western Washington, and outcompetes other natives so aggressively, and doesn't allow for the prevalence of these missing components of the ecosystem here.

Thornton Creek

Thornton Creek is more intentionally planted than Barton Woods, and has a large diversity of native species that have historically been found together. The impact on the ecosystem here was immediately noticeable in the large amount of insects and small mammals in the area. There was also a noticeable lack in the prevalence of Himalayan Blackberry, which wasn't found on the site. There are, of course, invasives still prevalent, and English Ivy could be seen slowly encroaching on the site. The prevalence of invasives along 105th St was also noticeable, as unmanaged roadsides tend to be sites where invasive species thrive best. The diversity of invasives was highest here between both sites, where a diverse number of species were located.

The health of the native species on the site was also of significance, as most of the plants seemed to be in good health. The localized reduction of heat island effects due to shade and proximity to the daylight creek makes for a microclimate that stabilizes the temperature, even now in the height of summer. The most notable native performing well was the Skunk Cabbage (*Lysichiton americanus*) which was found throughout the site in the creek bed and along the riparian zone, which is its native habitat.

Climate Resilience Plant Matrix

Given the existing vs historical plant communities that exist on both sites, as well as the considerations for climate resilience in the future, a plant matrix that synthesizes both native and non-native plants and their associated ecosystems has been developed. This gives a clearer picture of what non-native plants should be considered for removal and more importantly which native species should be reintroduced based on ecosystem function and

climate resilience. This is by no means a definitive or exhaustive list, and the climate vulnerability rating is merely speculative based on the volatile and unpredictable changes that lie ahead as a result of climate change, but given these projections as well as an understanding of native ecosystems, this list provides a framework for plants that can continually provide their essential ecosystem services in the face of climate change.

COMMON NAME	SCIENTIFIC NAME	PLANT TYPE	CLIMATE VULNERABILITY	NATIVE/ INVASIVE STATUS	ECOSYSTEM DESIGNATION
Douglas Fir	<i>Pseudotsuga menziesii</i>	Tree	Moderate-High	Native	Subalpine Forests
Western Redcedar	<i>Thuja plicata</i>	Tree	Low	Native	Subalpine Forests
Western Hemlock	<i>Tsuga heterophylla</i>	Tree	Moderate	Native	Subalpine Forests
Red Alder	<i>Alnus rubra</i>	Tree	Moderate-High	Native	Subalpine Forests
Pacific Crabapple	<i>Malus fusca</i>	Tree	Moderate	Native	Scrub-Shrub Wetlands
Black Hawthorn	<i>Crataegus douglasii</i>	Tree	Low-Moderate	Native	Subalpine Forests
Wild Plum	<i>Prunus americana</i>	Tree	Unknown/Low	Native	Prairie
Hazelnut	<i>Corylus americana</i>	Tree	Unknown	Native	Subalpine Forests
Sitka Spruce	<i>Picea stichensis</i>	Tree	Moderate-High	Native	Subalpine Forests
Garry Oak	<i>Quercus garryana</i>	Tree	High	Native	Scrub-Shrub Wetlands
Vine Maple	<i>Acer circinatum</i>	Tree	Low	Native	Subalpine Forests
Oregon Ash	<i>Fraxinus latifolia</i>	Tree	Moderate	Native	Subalpine Forests
Black Locust	<i>Robinia pseudoacacia</i>	Tree	Moderate	"Weed of Concern"	Non-Native
Cascara	<i>Frangula purshiana</i>	Tree	Moderate	Native	Prairie
Common Alder	<i>Alnus glutinosa</i>	Tree	Unknown	"Weed of Concern"	Non-Native
Black Cottonwood	<i>Populus trichocarpa</i>	Tree	Unknown	Native	Scrub-Shrub Wetlands
Western White Pine	<i>Pinus monticola</i>	Tree	Moderate	Native	Subalpine Forests
Norway Maple	<i>Acer platanoides</i>	Tree	Low	"Weed of Concern"	Non-Native
Bigleaf Maple	<i>Acer macrophyllum</i>	Tree	Moderate	Native	Subalpine Forests
Common Hawthorn	<i>Crataegus monogyna</i>	Tree	Moderate	Non-Regulated Noxious Weed	Non-Native
Pacific Madrona	<i>Arbutus menziesii</i>	Tree	Moderate	Native	Subalpine Forests
Pacific Willow	<i>Salix lucida</i>	Tree	Unknown	Native	Scrub-Shrub Wetlands
Scotch Pine	<i>Pinus sylvestris</i>	Tree	Moderate	Naturalized	Non-Native
Alaska Yellow Cedar	<i>Cupressus nootkaensis</i>	Tree	Unknown	Native	Subalpine Forests
Ponderosa Pine	<i>Pinus ponderosa</i>	Tree	High	Native	Subalpine Forests
Western Hackberry	<i>Celtis occidentalis</i>	Tree	Low	Native	Subalpine Forests

Northgate: Recommendations for Re-Indigenizing the Urban Landscape for Climate Change

with permission from Darryl Vallejos and Tahoma Peak Solutions

COMMON NAME	SCIENTIFIC NAME	PLANT TYPE	CLIMATE VULNERABILITY	NATIVE/ INVASIVE STATUS	ECOSYSTEM DESIGNATION
Tulip Tree	Liriodendron tulipifera	Tree	High	Native	Subalpine Forests
Sweetgum	Liquidambar styraciflua	Tree	High	Naturalized	Non-Native
Flowering Dogwood	Cornus florida	Tree	Moderate	Native	Scrub-Shrub Wetlands
Mountain Ash	Sorbus americana	Tree	Unknown	Native	Subalpine Forests
Red Osier Dogwood	Cornus sericea	Shrub	Unknown/Low	Native	Scrub-Shrub Wetlands
Red Elderberry	Sambucus Racemosa	Shrub	Unknown/High*	Native	Subalpine Forests
Oregon Grape	Mahonia aquifolium	Shrub	Low	Native	Subalpine Forests
Huckleberry	Vaccinium membranaceum	Shrub	Moderate	Native	Subalpine Forests
Salmonberry	Rubus spectabilis	Shrub	Unknown/Low*	Native	Subalpine Forests
Lady Fern	Athyrium filix-femina	Shrub	Unknown/Low	Native	Subalpine Forests
Bracken Fern	Pteridium aquilinum	Shrub	Unknown/Low	Native	Scrub-Shrub Wetlands
Western Sword Fern	Polystichum munitum	Shrub	Unknown/Low	Native	Subalpine Forests
Bog Laurel	Lakima polifolia	Shrub	Unknown	Native	Scrub-Shrub Wetlands
Snowberry	Symphoricarpos albus	Shrub	Unknown/Low	Native	Scrub-Shrub Wetlands
Ocean Spray	Holodiscus discolor	Shrub	Unknown/Low*	Native	Scrub-Shrub Wetlands
Osoberry	Oemleria cerasiformis	Shrub	Unknown/Low*	Native	Subalpine Forests
Common Holly	Ilex aquifolium	Shrub	Unknown/Low	"Weed of Concern"	Non-Native
Rose Spirea	Spiraea douglasii	Shrub	Unknown/High*	Native	Scrub-Shrub Wetlands
Bindweed	Convolvulus arvensis	Shrub	Unknown/Low*	Non-Regulated Noxious Weed	Non-Native
American Silverberry	Elaeagnus commutata	Shrub	Unknown/Moderate*	Native	Subalpine Forests
Cherry Laurel	Prunus laurocerasus	Shrub	Unknown/Moderate*	"Weed of Concern"	Non-Native
Wintergreen	Gaultheria procumbens	Shrub	Unknown/Moderate*	Naturalized	Non-Native
Purple Flowering Raspberry	Rubus odoratus	Shrub	Unknown/Low*	"Weed of Concern"	Non-Native
Elderberry	Sambuca nigra	Shrub	Unknown/Low*	"Weed of Concern"	Non-Native
Field Rose	Rosa arvensis	Shrub	Unknown/Moderate*	Unknown	Non-Native
Nipplewort	Lapsana communis	Shrub	Unknown/Low*	Non-Regulated Noxious Weed	Non-Native
Spotted Jewelweed	Impatiens capensis	Shrub	Moderate	Non-Regulated Noxious Weed	Non-Native
Nootka Rose	Rosa nutkana	Groundcover	Unknown/Moderate*	Native	Scrub-Shrub Wetlands
Solomon's Plume	Maianthemum racemosum	Groundcover	Unknown/Low*	Native	Scrub-Shrub Wetlands
Wild Ginger	Asarum canadense	Groundcover	Unknown/Moderate*	Native	Scrub-Shrub Wetlands
Wild Sarsaparilla	Aralia nudicaulis	Groundcover	Unknown/Moderate*	Native	Scrub-Shrub Wetlands
Salal	Gaultheria Shallon	Groundcover	Low-Moderate	Native	Subalpine Forests

COMMON NAME	SCIENTIFIC NAME	PLANT TYPE	CLIMATE VULNERABILITY	NATIVE/ INVASIVE STATUS	ECOSYSTEM DESIGNATION
Slough Sedge	Carex obnupta	Groundcover	Unknown/Low*	Native	Scrub-Shrub Wetlands
Horsetail	Equisetum arvense	Groundcover	Unknown/Low	Native	Scrub-Shrub Wetlands
Skunk Cabbage	Symplocarpus foetidus	Groundcover	Unknown/Moderate*	Native	Scrub-Shrub Wetlands
Bog Labrador Tea	Ledum groenlandicum Oeder	Groundcover	Unknown/Low*	Native	Scrub-Shrub Wetlands
Bog Cranberry	Vaccinium oxycoccos	Groundcover	Unknown/High*	Native	Scrub-Shrub Wetlands
Roundleaf Sundew	Drosera rotundifolia	Groundcover	Unknown/Moderate*	Native	Scrub-Shrub Wetlands
Cottongrass	Eriophorum angustifolium	Groundcover	Unknown/Moderate	Native	Scrub-Shrub Wetlands
Camas	Camassia quamash	Groundcover	Low	Native	Prairie
Fawn Lilies	Erythronium oregonum	Groundcover	Unknown/Low	Native	Prairie
Yellow Montane Violet	Viola praemorsa	Groundcover	Unknown/Low*	Native	Prairie
Lupine	Lupinus perennis	Groundcover	Unknown	Native	Prairie
Yarrow	Achillea millefolium	Groundcover	Low-Moderate	Native	Prairie
Kinnikinnick	Arctostaphylos uva-ursi	Groundcover	Moderate	Native	Prairie
Foxglove	Digitalis purpurea	Groundcover	Moderate	Native	Prairie
Himalayan Blackberry	Rubus armeniacus	Groundcover	Unknown/Low	Non-Regulated Noxious Weed	Non-Native
Herb Robert	Geranium robertianum	Groundcover	Unknown/Low*	Non-Regulated Noxious Weed	Non-Native
Creeping Bentgrass	Agrostis stolonifera	Groundcover	Unknown/Low*	Unknown	Non-Native
Common Velvet Grass	Holcus lanatus	Groundcover	Unknown/Low	Native	Prairie
Reed Canary Grass	Phalaris arundinacea	Groundcover	Unknown/Low*	Non-Regulated Noxious Weed	Non-Native
Bittersweet Nightshade	Solanum dulcamara	Groundcover	Unknown/Low*	"Weed of Concern"	Non-Native
English Ivy	Hedera helix	Groundcover	Unknown/Low*	Non-Regulated Noxious Weed	Non-Native
Perennial Pea	Lathyrus latifolius	Groundcover	Unknown/Low*	"Weed of Concern"	Non-Native

Examples from Lo-Tek - Julia Watson

The projects highlighted by Julia Watson provide an interesting insight into how we can look to Indigenous tech and sciences to inspire designs, but lacks in how to apply these design interventions in a modern context. As one of the few design-oriented collections of Indigenous design strategies, it provides a starting point to reflect on how Indigenous peoples from around the world have crafted strategies that work in symbiosis with nature. Because she does not approach the precedents with a distinct way to propose design implementation, it does border on appropriative without direction for how these interventions could be proposed.

FOND DU LAC BAND FOREST CARBON PROJECT

Fond Du Lac Band of Lake Superior Chippewa - Minnesota, USA

- Indigenous management of forest to protect indigenous ecosystems
- Southern reaches of boreal forests - highly susceptible to the effects of climate change
- In 2020, 9000 acres of tribal forests became dedicated to carbon sequestration, being led by the National Indian Carbon Coalition
- Will sequester more than 77 metric tons of carbon dioxide per acre
- Carbon credits are sold to buyers who wish to offset carbon emissions
- Intentional management regimes of forest ecosystems allow for plants and soil to sequester more carbon

- Intentional management of invasive species and species who historically did not occupy these lands, like beaver, possums, and the emerald ash borer.
- A great precedent for the shifting of ecosystem management to Indigenous communities to foster greater climate impacts and protect fragile ecosystems
- “Fond du Lac doesn’t manage their forests, they’re in relationship with them — a relationship that is foundational to their culture and ways of life.” - The Nature Conservancy of these missing components of the ecosystem here.

INDIAN MOUNDS CULTURAL MESSAGING PLAN

St. Paul, Minnesota, USA

- A great example of how to integrate indigenous principles into a design and planning project
- Integrating indigenous planting schemes into existing urban contexts
- Can be used as a way to imagine integrating plantings into ROW and other public areas
- Precedent for integrating the historical and cultural significance of place into design elements in a way that pays respects to this significance
- Utilizing culturally and spiritually significant plant species to re-integrate indigenous ecosystems - organizing phasing plan into the reestablishment of ecosystems over time, in the way that supports the resilience of the ecosystems and removes the existing ‘traditional’ park plantings
- Part of the messaging plan is to create slowly evolving indigenous planting schemes that reestablish the native prairie ecosystem into the space along trails throughout. This creates an ecosystem threshold that provides a transition into these reestablished ecosystems on the site.



Image Source: The Nature Conservancy



Image Source: Quinn Evans

Community Amenities and Wellbeing



Source: Seattle.gov

Public Realm Amenities

In Northgate, public realm amenities come in a few shapes and sizes, from connected riparian corridors, and extensive sidewalks to an active private park and vibrant neighborhood park. Hubbard Homestead Park provides walking paths and a skatepark while the Thornton Creek corridor is a shaded respite on a hot day and is surrounded by quiet residential streets. This section provides an overall understanding of the many spaces and places that make up the public realm in this urban center, their recreational amenities, and their relationship to the neighborhoods that surround them.

Recreational Amenities in Northgate



2

Playgrounds



0

Dogparks



1

Skatepark



1

Court



0

Fields



1

Fitness Equipment



1

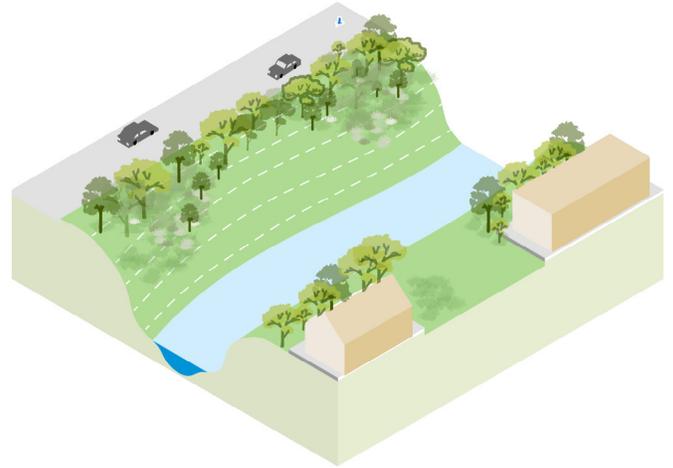
Community Center



Open Space Typologies

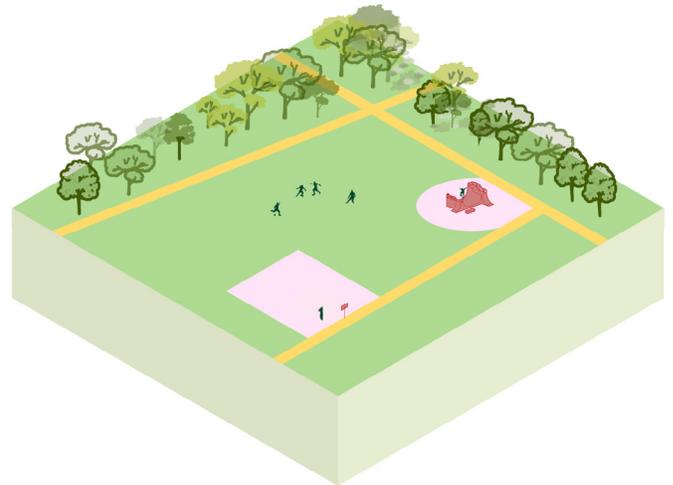
Using the 2024 Parks and Open Space Plan, this report organizes Northgate's parks and open spaces into the following categories: greenbelts and natural areas, neighborhood parks, boulevards and green streets, mini parks and pocket parks, and includes additional underused or private-public space categories: private open space and parking lots, described in more detail below:

Parks



Greenbelts / Natural Areas

Greenbelts and natural areas account for the majority of open space lands across the City, over 22%. In Northgate, over half of the total acreage of the urban center's open spaces are greenbelts and natural areas. These are park sites established to protect wildlife, habitat, and other natural systems' support functions. Some natural areas are accessible for low-impact use. Larger natural areas may have small sections developed to serve a community park function.



Neighborhood Parks

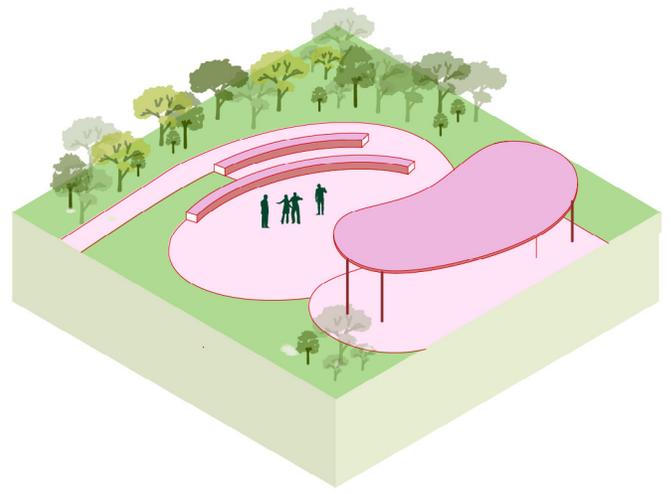
Neighborhood Parks are often much larger than Seattle's pocket parks, and may occupy an area equivalent to a city block, as Hubbard Homestead Park does. Typical park features include play areas and picnic areas. According to the 2024 Parks and Open Space Plan, neighborhood parks are generally between 0.25 and 9 acres in size.

Underused or Private-Public Space



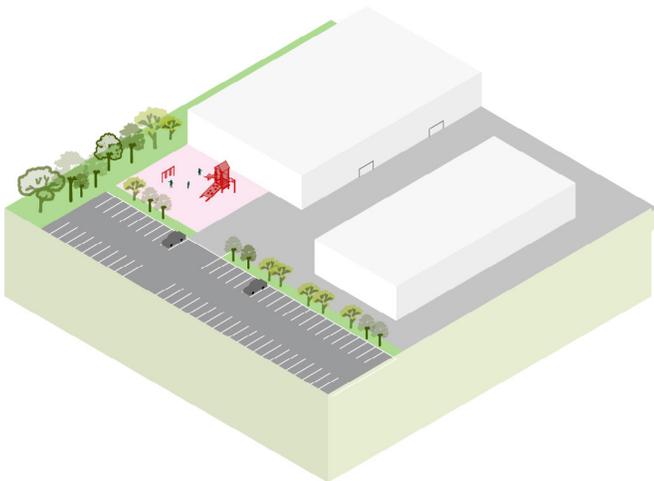
Boulevards / Green Streets

About six percent of Seattle's open spaces are categorized as boulevards, green streets, and greenways. These are established by a city ordinance and defined as extensions or expansions of dedicated streets, which often continue to serve as right-of-way and provide recreation benefits. While these spaces do not yet exist in Northgate, wider streets can enable more of these types of open space amenities.



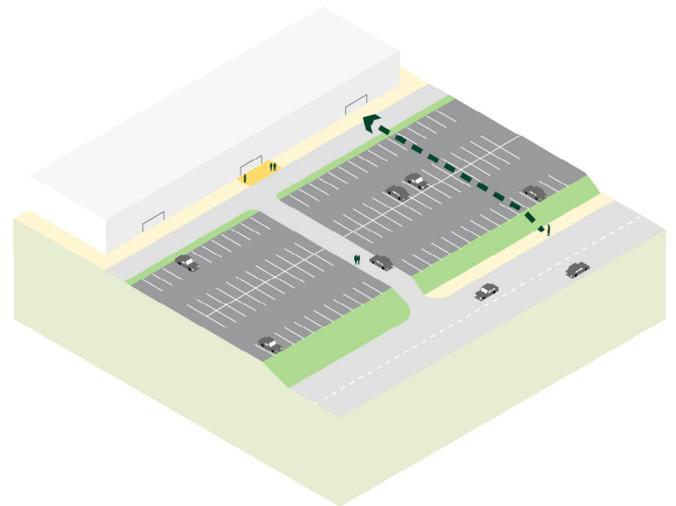
Private Open Space

Beyond what the City owns and manages, private open spaces owned by others also contribute to the open space character in the urban center. There is one private open space currently in Northgate at the Northgate Mall.



Mini Parks / Pocket Parks

are small parks that provide a little green in dense areas. They often incorporate small, sometimes difficult spaces to activate and are typically under 0.25 acres. The Maple Leaf Community Garden P-Patch is an example of a mini-park in Northgate.



Parking Lots

As a historically car dependent urban center, Northgate has many underused parking lots. Investments in sidewalks through these parking lots can expand access to existing parks, and transformation of parking lots into parks can provide more diverse access to amenities that meet community needs.

Existing Park Inventory

While Northgate is well-served by park spaces within a ten-minute walk, the quality of sidewalks and other means of accessing parks, the low number of in-park experiences available to residents in parks, and the number of entrances to parks, create barriers to surrounding residences and limit resident use of the parks closest to their homes. For more information about the types of experiences and amenities in each park, head to page 50-53. For more information about the quality of sidewalks within Northgate, head to page 54-55, figure Sidewalk Experience Analysis.

Northgate has nine open spaces, covering nineteen acres. Only three parks have typical recreational amenities within them, totaling two playgrounds, one skatepark, one basketball court, adult fitness equipment, and one community center. The urban center does not have any dog parks, tennis or pickleball courts, or playing fields.

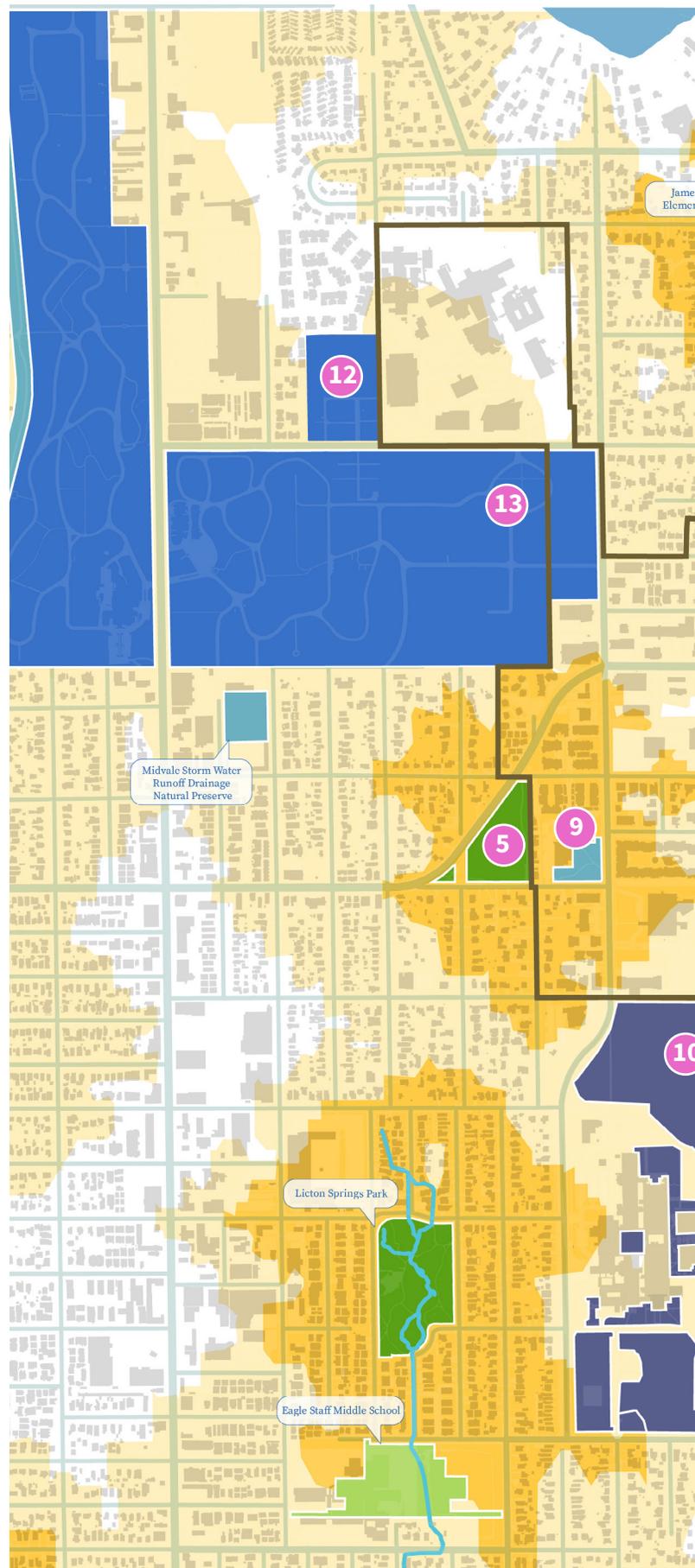
Recently, The City of Seattle Parks and Recreation Department has two projects for Northgate parks. The first project involves decommissioning the playground at Victory Creek Park, which has now been completed. The second project aims to construct a play area within the existing Hubbard Homestead Park. The goal is to provide playground equipment which will include play elements and access for children of all ages and abilities. Improvements will include fall surfacing, seating, stormwater mitigation and limited landscape improvements.

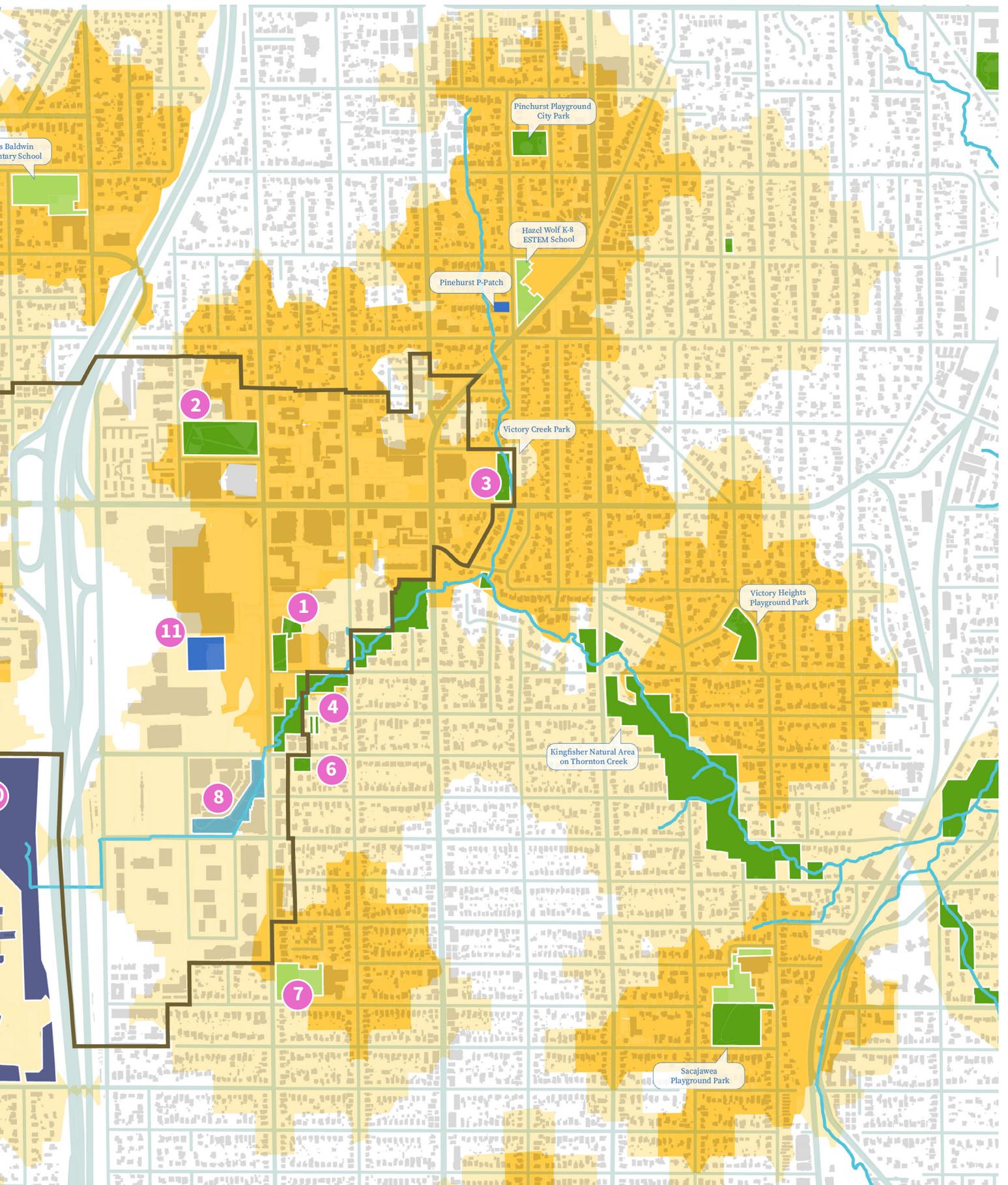
5 Minute Walksheds

- Walksheds to parks with recreational amenities
- Walksheds to all parks

Parks and Open Space

- Seattle Parks and Rec
- Seattle Public Schools
- SPU / SDOT / SCL
- Seattle College
- Private
- Watercourse





The parks and open spaces that provide access to Northgate residents are diverse in nature and provide a variety of different amenities to the surrounding community, however many of these destinations only support specific or special experiences. The size, owner, steward or advocacy group, and amenities offered in each park and open space are shared in more detail on the following pages.

Image Source:

1. Seattle.gov
2. Seattle.gov
3. Yelp
4. feetfirst.org
5. Seattle.gov
6. Maple Leaf Life
7. Seattle.gov



Northgate Community Center + Park

103,764 sq ft

Owner: Seattle Parks and Rec

Steward: Green Seattle Partnership

Amenities: Playground, Greenspace



Hubbard Homestead Park

162,797 Sq ft

Owner: Seattle Parks and Rec

Amenities: Skatepark, Half basketball court, Greenspace (*Playground coming later 2024*)



Victory Creek Park

43,191 sq ft

Owner: Seattle Parks and Rec

Amenities: Creek/Stream



4

Beaver Pond Natural Area on Thornton Creek

312,421 sq ft

Owner: Seattle Parks and Rec / Seattle DOT

Steward: Green Seattle Partnership, Thornton Creek Alliance

Amenities: Pond, Trail



5

Mineral Springs Park

173,101sq ft

Owner: Seattle Parks and Rec

Amenities: Disc Golf, Greenspace



6

Maple Leaf Community Garden P-Patch

15,985 sq ft

Owner: Seattle Parks and Rec

Steward: Green Seattle Partnership

Amenities: Community Garden



7

Olympic View School

92,184 sq ft

Owner: Seattle Public Schools

Amenities: Playground, Basketball Court, Field



Thornton Creek Water Quality Channel

112,377 sq ft

Owner: Seattle Public Utilities

Amenities: Creek/Stream, Trail



Meridian Center for Health

51,442 sq ft

Owner: Seattle City Light / Seattle DOT

Amenities: Greenspace



North Seattle College Woods and Wetlands

1,178,269 sq ft

Owner: North Seattle College

Amenities: Pond, Trails, P-Patch



Northgate Mall Park

81,959 Sq ft

Owner: Private

Amenities: Amphitheater, Ping Pong tables



12

Bikur Cholum Cemetery

273,054 Sq ft

Owner: Private (Cong Bikur Cholim Machzikay)

Amenities: Greenspace



13

Evergreen Washelli Cemetery

6,226,934 Sq ft

Owner: Private (Evergreen Washelli)

Amenities: Greenspace, Trail

Image Source:

8. ArchDaily

9. Google Street View

10. North Seattle College

11. Seattle.gov

12. The Times of Israel

13. Find a Grave

Access to Open Space

Access between Community Destinations

Using City provided mapping and inventories, a sidewalk analysis around comfort, activation, and character concluded that many of Northgate's neighborhood blocks are not pedestrian friendly. The analysis included an aggregate evaluation of

steep slopes of over 8% and over 12% grade that inhibit handicap accessibility, the presence (or lack) of sidewalks along roadways, tree cover, sidewalk pavement quality, and sidewalk width. Together, the evaluation highlighted areas where sidewalks are in physically poor condition, missing segments, lacking tree canopy, or are along long stretches of inactive building faces in alignment with the Northgate Urban Design Framework guiding principle of "accomplishing a network of pedestrian-oriented connections across the Urban Center that will help to break up 'superblocks'."

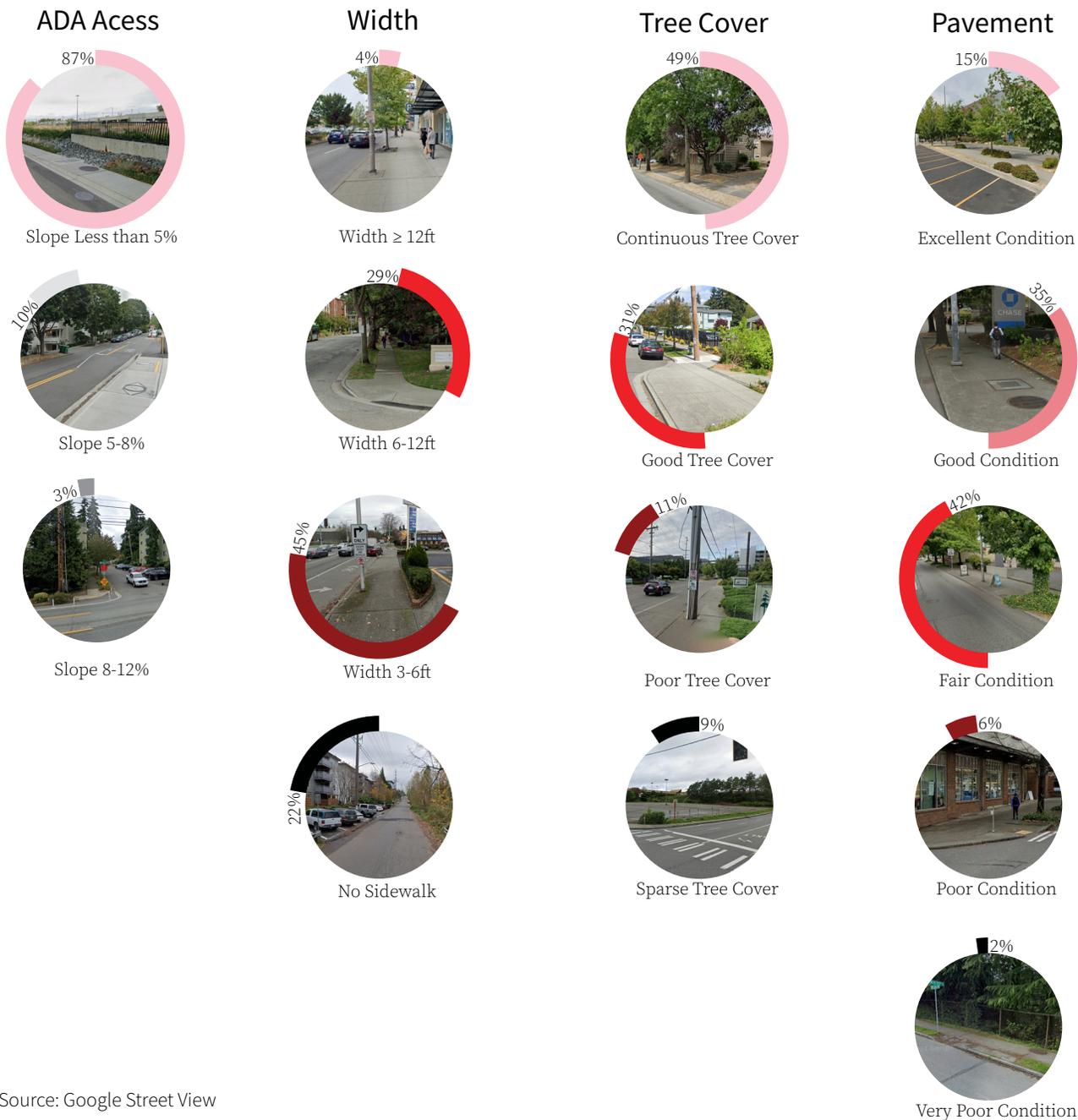


Image Source: Google Street View

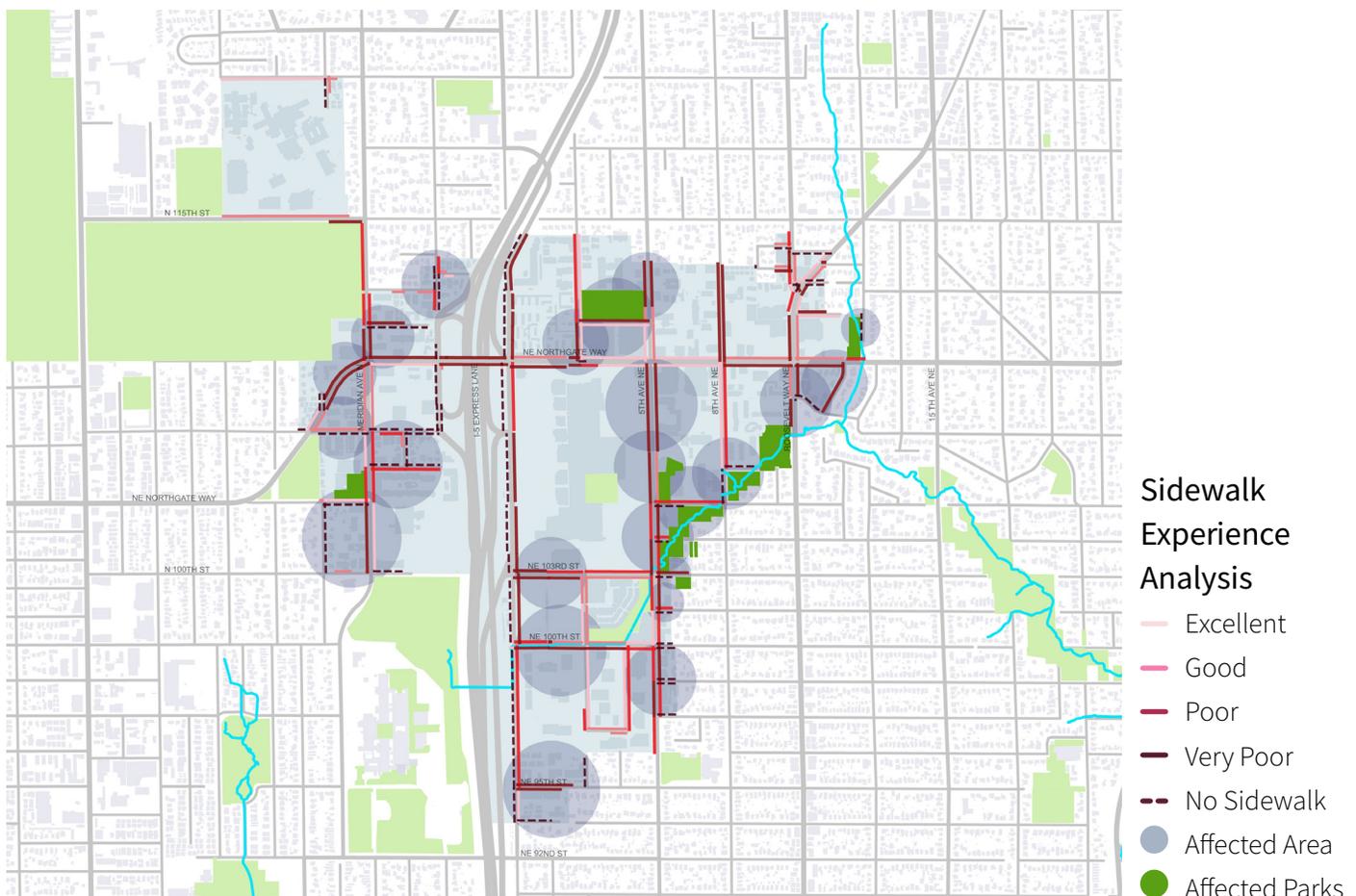
Access to Nature-based Experiences

Thornton Creek acts a southeast boundary for the Northgate urban center. It provides vital habitats for beaver and salmon populations, flood mitigation during major rain events, and reduces the effects of heat island on surrounding neighborhoods. This riparian corridor, particularly the daylighted section near Thornton Place, offers a scenic, creekside walkway that connects to the Northgate Station and Northgate Mall to the west and Kingfisher Natural Area to the east. The westernmost portion of the corridor is pedestrian-friendly, with a path maintained by the Thornton Place development that runs alongside the creek, making it easily accessible from the Northgate Light Rail Station.

From 5th Avenue NE eastward to 8th Avenue NE, the slope conditions make it difficult to access the creek and surrounding natural areas, as noted in the sidewalk analysis maps on prior pages. The corridor also lacks signage, clear pathways, and limited visibility from urban sidewalks into these public open spaces.

The Beaver Pond Natural Area, located near the intersection of 8th Avenue NE and NE 108th Street, is just a short distance from the Northgate Mall and the Northgate Community Center but is only accessible along street right of ways. The Beaver Pond Natural Area features a flat, easy-to-navigate path ideal for a quick stroll or a brief nature escape, despite its proximity to busy urban areas.

Both Thornton Place and Beaver Pond Natural Areas provide important habitats and opportunities to observe local wildlife, including the possibility of spotting beavers, and there are many opportunities to invest in the north south streets and the Thornton Creek riparian corridor to ensure safe pedestrian connectivity between community destinations and neighborhoods.



Priority Areas for Future Investment

Race and Social Equity

Many communities of color and low-income neighborhoods have historically received fewer investments in public amenities like parks, leading to a lack of equitable access to these resources. In Northgate, which is about one-third communities of color, access to parks are just as important as investments in the parks themselves. Illegal activities in parks were identified as a barrier to many residents visiting these neighborhood amenities, especially in areas where residential diversity is highest, like Hubbard Homestead Park.

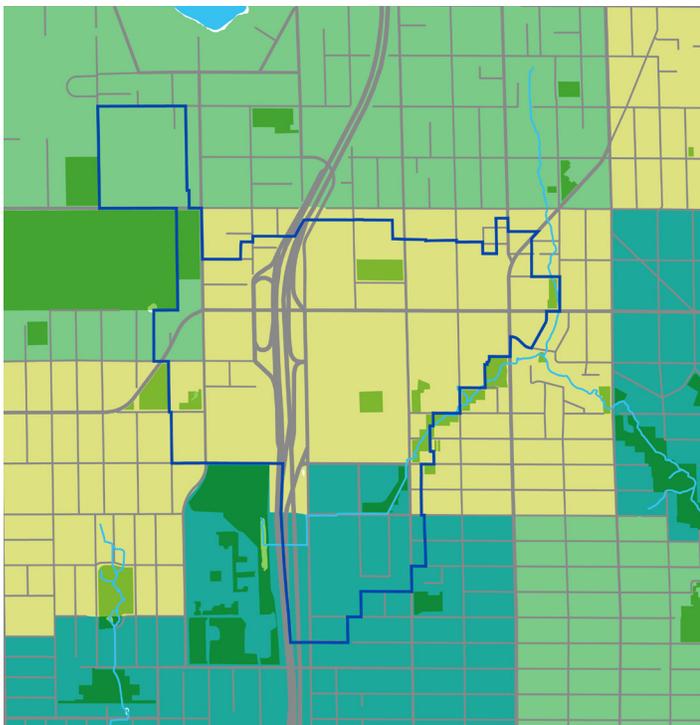
Park Pressure

Park pressure evaluates the ratio between neighborhood population on the total acres of all public spaces serving that community. Today, Northgate's parks support many more households than other neighborhoods throughout the City. With only nine acres of total open space and 6100 households currently in the urban center, almost 680 households share an acre of park space. Northgate is already on track to exceed growth targets of over 2,000 households, which will add an additional demand of 200 households per acre to an already beloved and at-capacity park system.

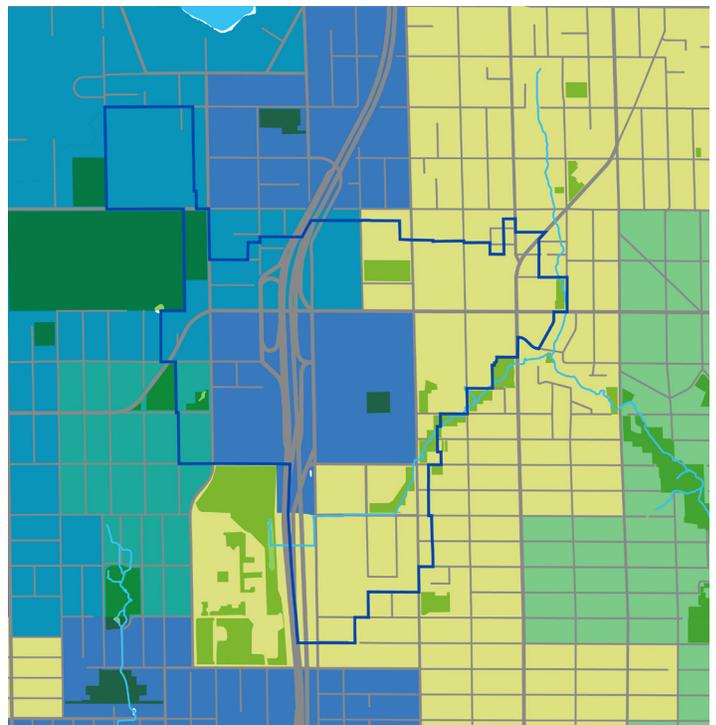
Priority Area

- Lowest Priority
- Low Priority
- Medium Priority
- High Priority
- Highest Priority

Race and Social Equity Index



Park Pressure

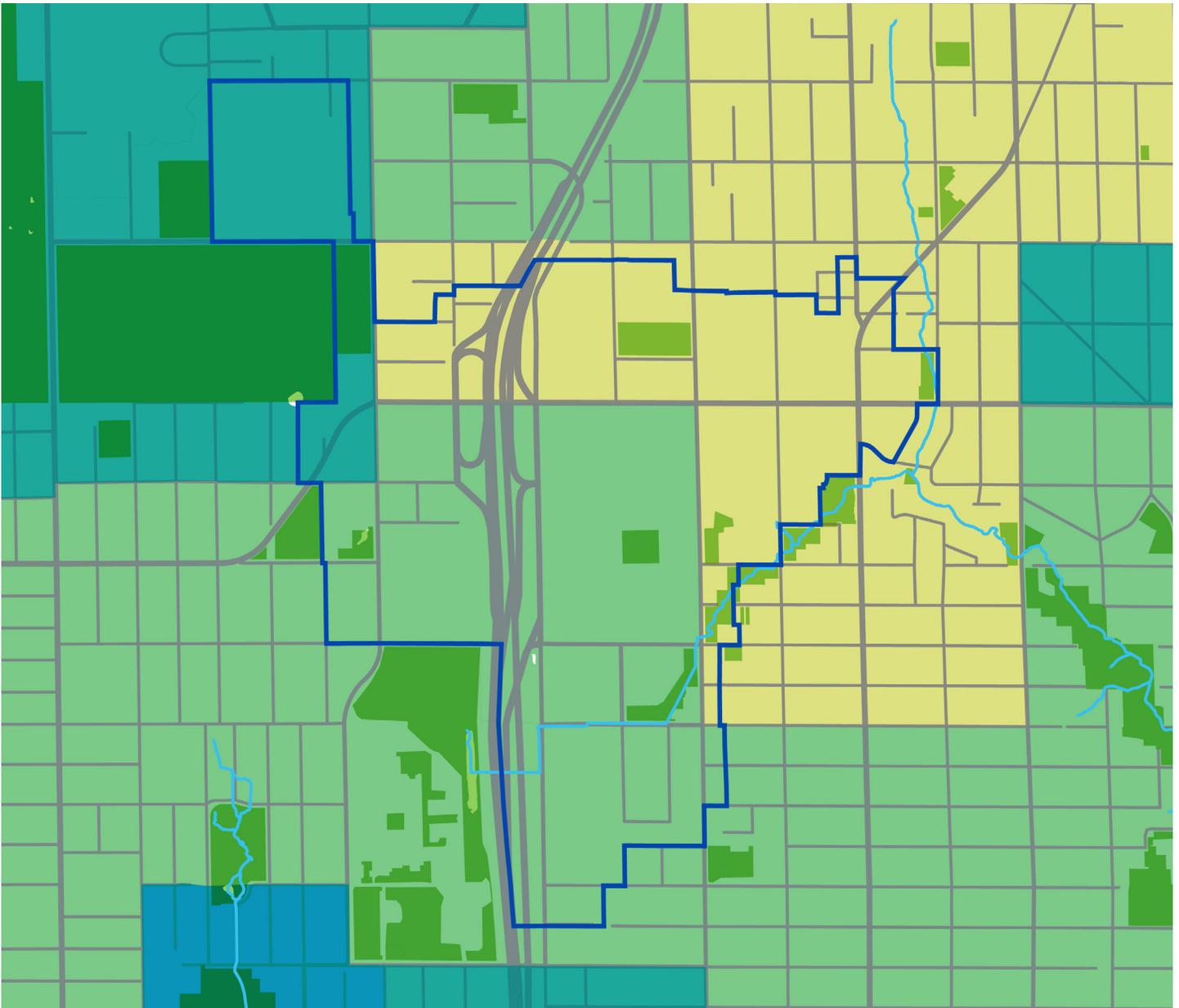


City Acquisition Methodology

To respond to unprecedented demand and limited access, the City of Seattle uses a land acquisition framework to assess acquisition priorities for park investment to address identified gaps. When a suitable property is found based on size and site characteristics, the Department will evaluate it for acquisition. The 2024 Parks and Open Space Plan uses a 10-minute walk distance to identify service areas and gaps and guides the City in finding properties.

Recently, King County Conservation Funding has been a key source for purchasing properties in these gap areas. This funding covers a significant portion of the purchase cost but requires the property to be primarily reserved for green space, limiting impermeable surfaces and active uses to support more efficient use of the budget for a variety of purchases that support human health and recreation access.

Priority Area for Investment



Opportunities and Recommendations

The following recommendations are organized by the open space typologies identified in the existing conditions analysis.



Racial Equity Toolkit Outcomes

Northgate's future environmental and climate resilience is closely tied to realizing several of the Racial Equity Toolkit outcomes defined by the plan. In particular, climate adaptation and environmental health of Northgate's creeks and natural resources are essential for the environmental quality outcome; improvements to and expansion of parks and open space are critical for advancing the social infrastructure + wellbeing and placemaking outcomes. Northgate's environmental systems are also closely linked to other outcomes around alternative transportation through trails and shaded paths, indigenous inclusivity through access and protection of natural resources, and anti-displacement by reducing the impacts of environmental planning or green space investments, also known as "green gentrification".

ENVIRONMENTAL QUALITY

"Northgate is an attractive neighborhood, with high standards for air, noise, and water quality. Environmental assets flourish."

Metrics: Tree Canopy, Water Quality (water quality would require infrastructure to track)

Metrics	Baseline	Goal
Tree Canopy	15%	30%
Water Quality	Moderate concern (WQI) (based on county data)	Low concern (WQI)
Air Quality	347 days air quality index (AQI) below 50	360 days air quality index (AQI) below 50 (based on citywide data)

SOCIAL INFRASTRUCTURE + WELLBEING

"Residents of Northgate feel connected to the natural environment and have safe access to schools, recreational facilities, transit stops, community gathering spaces, and other services at levels of service comparable to other North Seattle neighborhoods."

Metrics: Asset map completeness, Park square footage per resident (or household), active recreation amenities added

Metrics	Baseline	Goal
Asset Map Completeness		
# of household per acre of park space	680 households per acre	880 households per acre (accounting for the projected addition of 2,000 households based on citywide data)
Active Recreation Amenities	4	

PLACEMAKING

"Northgate neighborhoods feel vibrant, comfortable, and culturally relevant to their residents and broader communities. Public and private developments prioritize urban design that builds identity."

Metrics: New registered POPs in Northgate

Metrics	Baseline	Goal
# of POPs	2	

Summary of Opportunities

Key opportunities exist to respond to community needs, climate vulnerability, and environmental health in Northgate's open spaces and community amenities, including:

- **Expand Access to More Recreation Experiences:** While the urban center is well-served by park space within a ten-minute walk from residents, the diversity of experiences in Northgate is quite limited. Also, in relationship with other neighborhoods across the City, Northgate has fewer parks and open green spaces. In community engagement and resident surveys, respondents desired more amenities and expanded open space access. Relevant programming and physical amenities will improve community access to open space and recreation.
- **Lean into Growth Pressure:** The construction of new housing and commercial spaces, as well as the recent light rail expansion, are putting pressure on the demand for existing open spaces and creating challenges for expanding park access through new park space acquisition. Partnerships for open space dedication and privately owned public spaces should be strategically aligned with existing gaps in park access and provide for experiences that respond to community demands.
- **Accessibility and Connectivity:** While there are some parks and recreational areas, there are limited safe and direct connections to these places. Expanding amenity gateways and improving pedestrian access to those gateways with lighted, ADA accessible sidewalks that provide shade, waste receptacles, and benches will provide pleasant, safe methods for people to get to their destinations.
- **Provide Consistent Maintenance and Upkeep:** The existing parks and recreational facilities appear to be well-loved and need deferred maintenance and more regular upkeep.
- **Environmental Sustainability:** Balancing growth

and development with the need for protecting ecologically sensitive places like Thornton Creek is critical for the health of today's residents and future generations.

Public Realm Framework

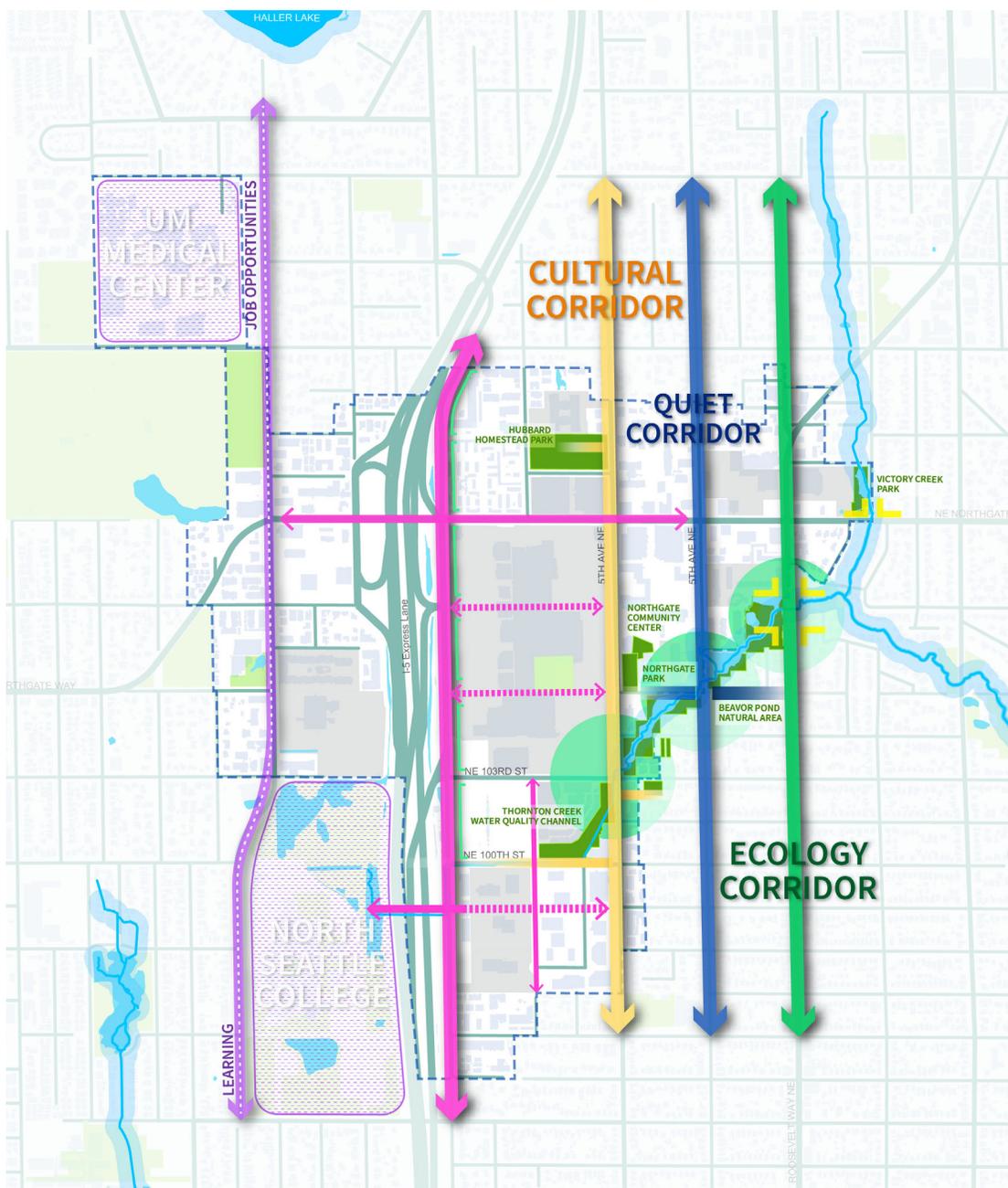
Thornton Creek is a critical, vibrant ecological resource and could become a strengthened community destination and healthy wildlife habitat, by improving connections over the corridor, clarifying the identity and access into the creek, and accelerating the recovery of the watershed.

Northgate historically grew as a strong core at the intersection of I-5 and NE Northgate Way. More recently, new development has begun to shift the core south along Thornton Creek, both daylighting and restoring a section of the creek, and providing a new opportunity for residents to connect with nature alongside an important commercial corridor. An embrace of the unique qualities of nature, culture, and commerce could clarify the relationship and future investments of Thornton Creek, while encouraging investments along streets that amplify their roles in the community. Several areas that connect to Thornton Creek already have unique characters that are defined around four key north-south streets: Fifth Avenue NE, 8th Avenue NE, and Roosevelt Way NE.

- **Commerce Corridor (purple):** Connecting UW Medical Center and North Seattle College to the south, this corridor is one of the more vehicular focused corridors in Northgate. The vision for this corridor is to embrace the many residents, students and workers who traverse this unique roadway safely and comfortably through more expansive tree canopy in the boulevard conditions closest to the College and increased shade for bicyclists further north.
- **Gateway Corridor (pink):** Aligned with Northgate's goals of being more walkable and transit-oriented, the Gateway Corridor is an opportunity to invest in small, connected plaza spaces for people entering Northgate for the

first time, waiting for their daily train, or saying goodbye to visitors. Cultural Corridor (yellow) Bordering the Northgate Mall, and recent new developments to daylight and celebrate Thornton Creek and its natural resources. Beyond opportunities to continue the clear views and pathways into Thornton Creek from the street, investments in streetscape improvements along 5th Avenue should encourage pause points next to ground level retail, and well-lit sidewalks with trees, benches and clear wayfinding to point out cultural destinations, parks, and anchor retail off street.

- Quiet Corridor (blue): This largely fixed use and residential corridor is an opportunity to make improvements in the basic amenities that neighbors rely on to get around, and encourage roadway investments that slow vehicles and increase visibility of people crossing the street.
- Ecology Corridor (green): The future Roosevelt Way should celebrate the longest stretch of open space and riparian corridor in the Northgate neighborhood with overlooks and accessible connections into Beaver Pond and surrounding natural areas.



- Public Realm Framework**
- Commerce Corridor
 - Gateway Corridor
 - Ecology Corridor
 - Quiet Corridor
 - Cultural Corridor
 - Potential Green Street
 - Public Space
 - Signage Improvements

Greenbelts/Natural Areas

1. Conduct a study on water quality and recreational access for Beaver Pond, considering potential collaboration with the Thornton Creek Alliance.
2. Clear the Beaver Pond of invasive species using bio-control methods.
3. Prioritize trail creation and maintenance along Thornton Creek.
4. Integrate trails into existing sidewalks and bike lanes wherever feasible.
5. Reintroduce native and adaptive plant and tree species to Thornton Creek and use enclosures to protect trees and shrubs from resident beaver populations.
6. Unblock culverts along the creek to enable unobstructed salmon, beaver, and other wildlife passage through the habitat corridor.

Neighborhood Parks

7. Improve public water access and cooling areas by installing spray pads or water features in current parks.
8. Invest in new recreational amenities like playgrounds, courts, fields, and workout equipment within existing parks. (Refer to the following map for optimal locations to fill recreational gaps.)
9. Complete updates to the new play area at Hubbard Homestead Park.
10. Establish new park entrances and safe pathways to enhance park accessibility.
11. Dedicate resources to reinvest in Victory Creek Park.

Boulevard / Green Streets

12. Develop urban design streetscapes tailored for Northgate, incorporating branding, signage, designated bike lanes, and design alterations. (See following page for suggestions)
13. Implement stormwater street designs along major corridors that effectively manage runoff and mitigate its flooding impact.

14. Promote developer participation in the Above Code Program offered by SPU (Seattle Public Utilities) to exceed standard environmental standards.
15. Explore options for incorporating solar or green technologies on rooftops, with a focus on mitigating urban heat island effect.
16. Enhance pedestrian safety measures, particularly along NE Northgate Way and First Avenue NE to create a safer and more accessible environment for pedestrians.

Mini Parks / Pocket Parks

17. Establish safe routes leading to parks and open spaces, especially when traveling across major roads or parking lots.

Private Open Space

18. Formalize mechanisms, such as a revamped Privately Owned Public Space (POPS) program, to aid in the design and designation of new open spaces within Northgate.
19. Consider using a developer agreement overlay to address specific open space needs, including increased canopy coverage.

Parking Lots

20. Incentivize tree plantings on private lots, especially parking lots, to combat the urban heat island effect.
21. Encourage walkability by creating cool corridors in parking lots with shade and seating locations to help pedestrians get from public sidewalks to building entrances.
22. Set a minimum requirement for electrical vehicle charging stations in parking lots over a certain size.
23. Incentivize installing solar canopies to harness solar energy and create shade in large surface level parking lots.
24. Install air quality sensors, especially near highways or large parking lots, to monitor air pollution levels.

Area-wide Climate Actions

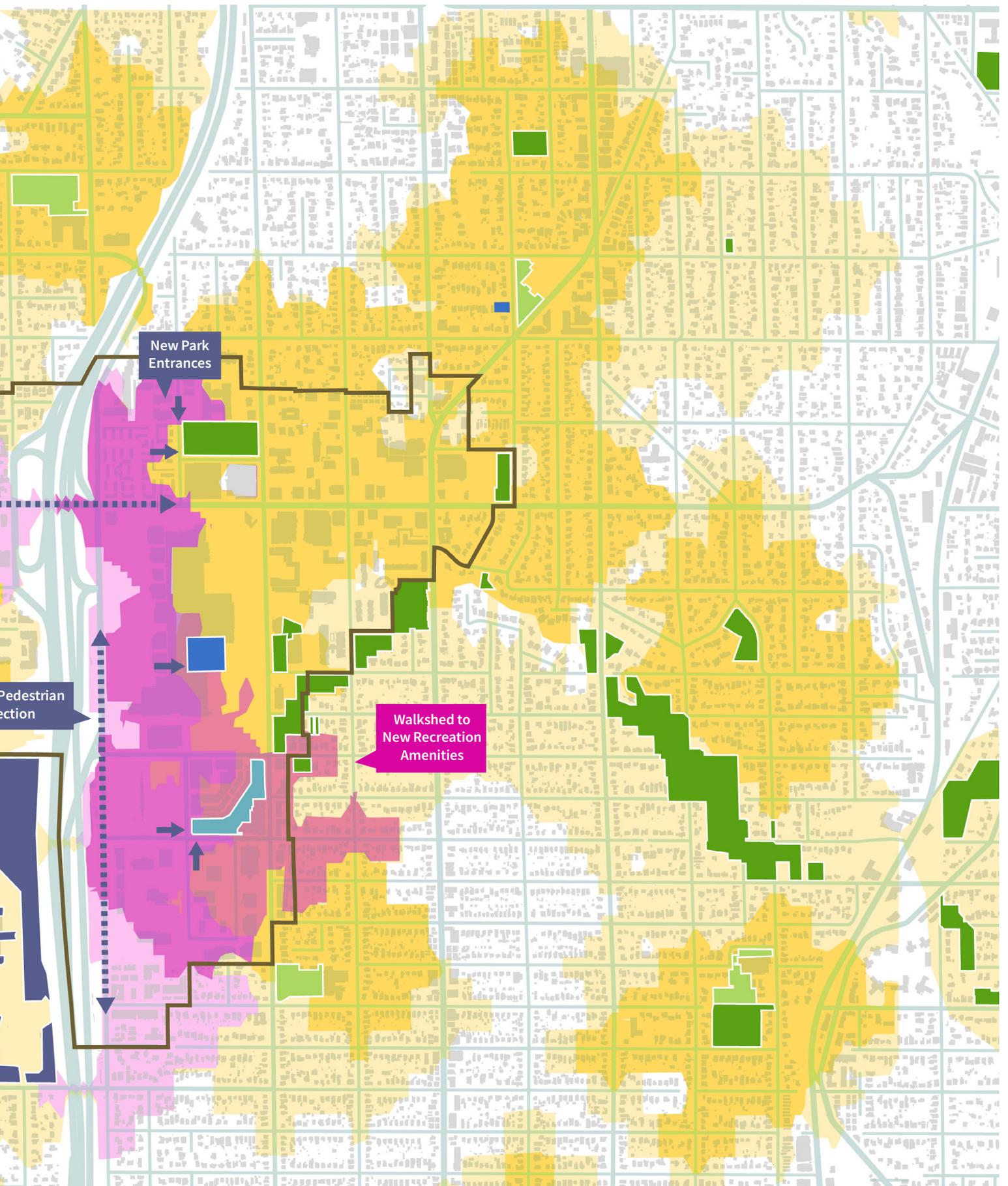
Additionally, there are other opportunities to advance climate change goals in Northgate through everything from ensuring future development is sustainable to minimizing waste. While many of these initiatives are governed and directed at the city or state level, key opportunities that can be undertaken at the Northgate Urban Center scale include:

25. Leverage the City’s available incentives towards the use of green building practices for all new construction projects.
26. Develop the Northgate Community Center into a resilience hub, equipped with generators for backup power and emergency supplies.
27. Consistent with Seattle’s Food Action Plan priorities, seek opportunities to use Northgate’s public or private parks to increase access to community growing space/community gardens. This aligns with the Food Action Plan’s priority to “Increase land access and stewardship rights for community groups to grow food on public, City-owned land and support a continuum of culturally relevant, food and nutrition educational activities to reach diverse communities.”
28. Leverage existing City of Seattle grant programs that seek to expand healthy food access to add growing spaces and gardens to existing capital improvement projects.
29. Consistent with Seattle’s Food Action Plan and if in alignment with recommendations from Tahoma Peak, use public land and open to advance the Food Action Plan’s priority to “Increase the number of low-maintenance or passive food production (food forests, fruit trees) and foraging opportunities within Seattle, stewarded and directed by Native and Indigenous communities and other community partners.”
30. Explore ways to incentivize and increase participation in the existing composting program (both through large institutional and commercial partners or residential scale) to reduce the diversion of food waste and its impact on emissions. This aligns with the Food Action Plan’s priority to “Partner with institutional food services, grocers, manufacturers, distributors, and consumer-facing food service businesses to prevent food waste.”
31. Consider a technical assistance or pilot neighborhood-scale building decarbonization program or developer decarbonization incentive that utilizes the Seattle Building Emissions Performance Standard regulations and Clean Buildings Accelerator program to exceed City and State requirements for emissions and carbon waste and encourages smaller building owners to participate. Currently the minimum required building size is 20,000 square feet.
32. Pilot Northgate as a “low-pollution neighborhood” and invest in Northgate’s only community center as a resilience hub.
33. Consistent with the Clean Building Accelerator Program, provide marketing and communications in for Northgate residents with language isolation that provide incentives and free or low cost access to heating conversion from oil to electric heat, and stoves from natural gas to electric.
34. As residential density increases, the City should work with WSDOT to construct sound barriers along I-5 closest to residential neighborhoods like between 94th and 100th east of I-5 and between 115th and Northgate Way both east and west of I-5.

Re-Indigenizing the Urban Landscape for Climate Resilience

Key Recommendations from Darryl Vallejos and Tahoma Peak Solutions Report

35. Incorporate native plant species, as outlined in pages 51-53, into right-of-way landscaping, prioritizing the most resilient species available to enhance long-term sustainability.
36. Restore the Thornton Creek Protected Area using historically appropriate native "upland bog and wetlands" plant species to revitalize the ecosystem and support biodiversity.
37. Utilize the landscape for interpretive purposes, integrating educational elements and messaging about Indigenous land stewardship practices.
38. Update the City’s approved street tree list to include resilient native species, ensuring alignment with ecological goals and climate resilience.



Site Recommendations

The sites have different needs, functioning as distinct ecosystems with different conditions that call for unique plant palettes. For Barton Woods, the recommendation would be to reestablish a native prairie ecosystem with the introduction of native wildflowers like Camas, Lupine, Yarrow, Fawn Lilies, Foxglove, and Kinnickinick. These should be interspersed with larger shrubs and small trees like Pacific Crabapple, Red Osier Dogwood, Garry Oak, Vine Maple, Huckleberry, Snowberry, Oregon Grape, etc. as well as a solid groundcover of Salal, Horsetail, and Lady Fern.

The more densely forested areas have a diversity of tree species that can be maintained, but should be more purposefully maintained with the removal of the large swaths of Himalayan Blackberry and the reintroduction of functional understory plants. These include Vine Maple, Oregon Ash, Sword Fern, Lady Fern, Oregon Grape, Snowberry, Wild Ginger, and Salal.

The wetland areas could be enhanced with Slough Sedge, Skunk Cabbage, Horsetail, Cottongrass, and other wetland plants.

This is of course not an exhaustive list of plant species that could be introduced into the sites. There is also the question of climate resilience with these plants. A large number of native species are vulnerable to climate change, and should be handled as such. The introduction of variants from their southernmost extents could be used to increase the resilience of the plants, much like the work that Oxbow Farms is using to establish more resilient riparian ecosystems along the Snoqualmie River by using seeds of natives from their southernmost extents in Oregon where the plants are already experiencing much hotter and drier conditions.

As for Thornton Creek, the plants are already managed in a healthy and resilient way with the intentional planting of natives. The slow introduction

of more riparian species like Slough Sedge and Salal could increase the resilience of the site, while naturally holding back the slow encroachment of non-native invasive species. The continual management of Himalayan Blackberry and English Ivy is also important, and the management of invasive plants should be as intentional in the rest of the ecosystem with the removal of the invasives along 105th St. A more densely planted diversity of natives along this stretch like Oregon Grape, Snowberry, and different Fern species along with more intentional diversion of street runoff with the construction of a curb would prevent harmful runoff from harming the natives.

These recommendations are from an observational perspective and are not intended to be considered the only path forward for these areas. Certain plants may not perform well or may interfere with the functioning of the ecosystem, or may require more intensive management in the face of climate change and the prevalence of invasives.

Barton Woods Identifiable Plant Species

As it currently stands, there is no ecological connection between the two areas - divided by the interstate and the large swaths of parking lots and heavy development immediately south of the old Northgate Mall. As it stands, the headwaters of Thornton Creek at Barton Woods and the wetlands on the North Seattle College campus are currently piped to the Thornton Creek Water Quality Channel where the water from Barton Woods, along with the stormwater runoff from the surrounding area is channeled through.

Given the current infrastructure that exists between the sites, Thornton Creek is unable to be daylight through to its historic headwaters, but there is an opportunity to connect the ecosystems back together through intentional intervention between the two. This can be accomplished by utilizing the existing Right Of Way areas to reintroduce native plant communities and create a corridor for wildlife and pollinators.

Opportunity areas for native plant introductions in the Right of Way



01 - 100th Streetscape

Using the Indian Mounds Burial Grounds as a framework for targeted intervention, the streetscape can be reimagined as a space to connect the spaces between Barton Woods and Thornton Water Quality Channel, which then connects to Thornton Creek itself.

02 - I5 Median Spaces

Because I5 cuts directly through the neighborhood, it is currently impossible for Thornton Creek to be daylight across it. This limits the possibilities for extending a green belt through the area. The options that currently exist involve targeted planting interventions in the medians of the highway, which currently are underutilized and have opportunity to provide wildlife and pollinators a safer crossing across the highway.

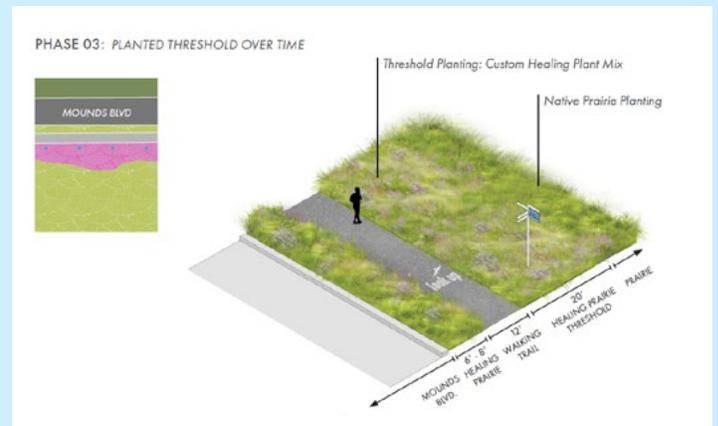


Image Source: Ten x Ten

Northgate: Recommendations for Re-Indigenizing the Urban Landscape for Climate Change

with permission from Darryl Vallejos and Tahoma Peak Solutions

As for the highway medians, a planting palette that is a mix of the Periphery Forest ecosystems as well as the Prairie ecosystem could serve well at both providing a corridor for wildlife, as well as the potential for small scale noise and air pollution from the highway.

01 - 100th Streetscape

The trees featured on this list were curated based on comparison between the Climate Vulnerability Matrix and the Seattle Department of Transportation's Approved Street Trees List. The Tulip Tree* was selected because it was one of the few native species listed in SDOT's list, despite it's high climate vulnerability.

02 - I5 Median Spaces

The plants on this list are meant to be regarded as a speculative list, as the actual regulations governing what can and can't be planted in the medians based on things like site distance, vegetal clearance, design clear zones, etc. ultimately dictate what can be planted on these sites. This is decided by a number of governmental organizations like Washington Department of Transportation, the Federal Highway Administration, etc.

Climate Vulnerability

- Low - Low/Moderate
- Moderate / Unknown
- Moderate - High
- High

100th Streetscape

TREES	SHRUBS	GROUNDCOVER
Tulop Tree*	Oregon Grape	Camas
Oregon Ash	Snowberry	Fawn Lilies
Cascara	Western Sword Fern	Yellow Montane Violet
Vine Maple	Lady Fern	Lupine
Oregon Oak	Huckleberry	Yarrow
Red Osier Dogwood	Salmonberry	Kinnikinnick
		Salal

I5 Median Space

TREES	SHRUBS	GROUNDCOVER
Western Redcar	Snowberry	Camas
Oregon Ash	Snowberry	Fawn Lilies
Cascara	Huckleberry	Yellow Montane Violet
Western Hemlock	Osoberry	Lupine
Douglas Fir	Western Sword Fern	Yarrow
Bigleaf Maple	Lady Fern	Kinnikinnick
Vine Maple		Salal
		Common Velvet Grass



Thornton Creek Protected Area

Because the plantings along Thornton Creek in this area were planted more recently and are more intentionally managed than Barton Woods, the recommendations here are much less intricate. The slow introduction of more riparian and wetland plants like Salal, native Sedges like Slough Sedge, and others would only stand to improve the ecosystem functioning, there isn't a pressing need to create large-scale interventions like Barton Woods. The area with the highest need for intervention is along 105th street, where, as stated before, is a large concentration of invasives. Because of that, the following recommendations are made for the improvement of the health of the ecosystem in this area.

105 Streetscape

TREES	SHRUBS	GROUNDCOVER
Pacific Willow	Oregon Grape	Skunk Cabbage
Red Osier Dogwood	Snowberry	Slough Sedge
Western Redcedar	Lady Fern	Horestail
	Western Sword Fern	