

TACOMA TIDEFLATS

ENVIRONMENT, HEALTH, & TRIBAL ASSETS

TACOMA TIDEFLATS SUBAREA PLAN & EIS

April 16, 2024

Workplan Outcomes

When the Tideflats subarea planning effort began, the City of Tacoma, the Port of Tacoma, the Puyallup Tribe, Pierce County, and the City of Fife agreed that the eventual adoption of the Tideflats Subarea Plan would lead to outcomes that included environmental protections, environmental remediation, human health and safety, economic development, preservation of manufacturing and industrial lands, and streamlined permitting and review. There was also recognition of the Container Port Element of the One Tacoma Comprehensive Plan and the desire to ensure continued operations of the Port of Tacoma Manufacturing Industrial Center (MIC). The anticipated outcomes that are relevant to this issue paper are:

- The Subarea Plan will establish environmental improvement goals for Commencement Bay, including providing for greater bay-wide diversity of ecosystems, restoration of historic functions and improvement of physical conditions to protect and enhance environmental and cultural resources.
- The Plan will support, protect, and improve health and safety of area employees and residents of surrounding communities.
- The Subarea Plan will be consistent with treaty-protected rights.
- The Subarea Plan will protect the fisheries and shellfish resources that are essential to the tribe both culturally and economically and shall support continued growth of the regional economy and the currently estimated 29,000 existing family-wage jobs in the maritime, manufacturing and industrial sectors, the provision of infrastructure and services necessary to support these areas, and the important role of the Tideflats area as an economic engine for the City of Tacoma, Pierce County, state, and the region while protecting the livability of surrounding areas.



Planning Requirements

The Tideflats Subarea Plan will meet Puget Sound Regional Council (PSRC) requirements around planning for Manufacturing Industrial Centers. The requirements that are relevant to this paper are:

- Encourage coordination with tribes, ports, military installations, and special purpose districts, and adjacent jurisdictions, when applicable.
- Identify significant environmental features in or near the center, including streams and shorelines.
- Recognize the role of land use, development, and transportation on greenhouse gas emissions.
- Promote the rehabilitation of critical/environmentally sensitive areas.
- Support innovative stormwater management.
- Avoid or mitigate environmental impacts for vulnerable populations.
- Support achievement of state and regional greenhouse gas emissions reduction goals.
- Reduce air pollution and greenhouse gas emissions by increasing alternatives to driving alone.
- Expand electric transportation infrastructure such as charging infrastructure for heavy duty equipment.
- Promote innovative green building practices in design, materials selection, construction, and maintenance.
- Encourage retrofitting of existing buildings to reduce building energy use.

Current Conditions

Environment

The Tideflats are an environmentally important area containing shoreline, river deltas, tidal creeks, marshes, naturalized creeks, upland forests, and river channel corridors. These areas support a variety of plant and animal species despite the fact that habitat for plants and animals is limited due to intense industrial and port land uses. Commercial and industrial activity has significantly transformed the Tideflats, and adjacent communities, impacting air and water quality, intensifying the urban heat island effect and reducing ecosystem services.

Air Quality

Air quality is affected by pollutants that are generated by both natural and manmade sources. The largest manmade contributors to air emissions are transportation vehicles and power-generating equipment, both of which typically burn fossil fuels. Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse

health effects than others. Population subgroups sensitive to the health effects of air pollutants include groups that encounter environmental or occupational health exposures (e.g., indoor air quality), which affect cardiovascular or respiratory diseases. Workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupational Safety and Health Administration (OSHA) to ensure the health and well-being of their employees (BAAQMD 2011). There is some concern for cumulative air quality impacts due to multiple industrial discharge points within the Tideflats.

The primary pollutant of concern for the Tacoma Tideflats study area is diesel particulate matter (DPM), primarily because of the number of diesel-fueled vehicles and equipment operating within and near the MIC. On road vehicles, primarily heavy-duty trucks, nonroad equipment, vessel operations, and locomotive operations are existing sources of air pollutants including DPM. Additionally, the subarea is bordered by I-705 and State Highway 509, which carry a high volume of diesel truck traffic. Particulate matter emissions (both PM₁₀ and PM_{2.5}) are also pollutants of interest given the history of elevated concentrations in the region. Summertime wildfire smoke also contributes to unhealthy air.

In 2019, industrial activity city-wide accounted for 30% of Tacoma's total greenhouse gas emissions (GHG). Transportation across the city accounted for 44% of its emissions.¹ The Tideflats receive energy services from both Tacoma Power and Puget Sound Energy. The fuel mix of these providers includes fossil fuels like coal and natural gas as well as renewables such as wind and hydroelectricity. As climate change impacts become more salient, activities to reduce GHG emissions are becoming common practice.

Exhibit 1. GHG emissions reductions comparison.

Local Jurisdictions	GHG Emissions Reductions Target
City of Tacoma	Net zero by 2050.
Northwest Seaport Alliance	Phase out scope 3 emissions from seaport-related activities by 2050, scope 1 and 2 emissions by 2040.
Port of Tacoma	Phase out scope 3 emissions from seaport-related activities by 2050, scope 1 and 2 emissions by 2040.
Puyallup Tribe of Indians	Transition existing fossil fuel facilities to non-fossil fuel sources by 2035. Commitment to a carbon neutral economy by 2050.
Pierce County	Reduce emissions 45% below 2015 levels by 2030.
Puget Sound Clean Air Agency	Reduce regional emissions to 50% below 1990 levels by 2030

¹ Emissions from transportation include gasoline and diesel for personal vehicles, commercial vehicles, public buses, and freight.

Ecology began monitoring air toxics found in the Tacoma Tidelands in 1987. The Tidelands area was designated as nonattainment for PM₁₀ at the time the 1990 Clean Air Act Amendments were enacted. In 1999 the region had demonstrated attainment with the PM₁₀ established National Ambient Air Quality Standards (NAAQS) and the EPA approved the maintenance plan in 2001. With the region's continued compliance with the PM₁₀ NAAQS, the maintenance plan expired in May 2021.

The Tacoma-Pierce County area was designated as nonattainment for the 24-hour PM_{2.5} NAAQS in 2009. In 2012, the region's PM_{2.5} design values demonstrated compliance with the NAAQS and the EPA suspended the need for attainment plans. Despite this suspension, Ecology elected to continue with the plans, with a particular focus on reducing residential wood smoke county. The region's maintenance plans identified wood smoke as a primary driver to the elevated concentrations of PM_{2.5} and, historically, PM₁₀. The ongoing attainment planning proved to correspond with decreasing PM_{2.5} concentrations in the region and in 2015, the EPA redesignated the Tacoma-Pierce County nonattainment area to attainment. The county currently operates under a maintenance plan that will expire in March of 2035. In 2021, The Northwest Seaport Alliance, Port of Seattle, Port of Tacoma, and Port of Vancouver, British Columbia, updated the Northwest Ports Clean Air Strategy (NWPCAS), setting the direction for their air quality and sustainability programs for the next 30 years and beyond. The NWPCAS is an opportunity for ports to align emission reduction strategies with current policy, including the ports' response to the Paris climate accord, align with current technology trends, increase stakeholder involvement, increase visibility and clarity around how emission reduction projects are prioritized, and improve flexibility in achieving performance-based targets. The NWPCAS is a collaboration to voluntarily reduce seaport-related emissions that contribute to air pollution in the shared Puget Sound-Georgia Basin Airshed as well as climate change.

First adopted in 2008, the NWPCAS was the first international strategy of its kind in the Port community. The original Strategy sought to encourage environmental action above competition and created a means for the four Northwest Ports to work collectively and voluntarily to reduce air pollution. To date, the NWPCAS has focused on diesel particulate matter (DPM), the key driver of air pollution related impacts in the Puget Sound region, and greenhouse gasses (GHGs). In the 2020 NWPCAS, the ports place increased focus on other air pollutants and emissions that affect climate such as nitrogen oxides, volatile organic compounds, and black carbon, while maintaining focus on DPM and GHGs.

The ports met the DPM and GHG emission reduction goals for 2020 by the end of 2016. Based on the 2015/16 inventories, a total of 174.8 million metric tons of cargo were moved through the four ports, and port-related activities resulted in the emission of 501 metric tons of DPM and 1.75 million metric tons of GHG emissions.¹ DPM emissions per metric ton of cargo moved: 80% lower in 2015/16, compared to 2005. GHG emissions per metric ton of cargo moved: 17% lower in 2015/16, compared to 2005.

The significant reductions in DPM emissions can be attributed to changes in international, national and provincial regulations, industry action, and port policies and programs to accelerate the

turnover of equipment and use cleaner fuels, with the most substantial impact resulting from implementation of sulfur limits on fuel used in the North America Emission Control Area. Overall DPM emissions also dropped by 75%. Progress continues to be documented in annual *Implementation Reports*.²

In addition to the federal standard, the PSCAA Board of Directors adopted a more stringent health goal for 24-hour PM_{2.5} of 25 µg/m³ in 1999, based on recommendations from the PSCAA Particulate Matter Health Committee. In 2021, the Tideflats had 6 days where air quality exceeded PSCAA's health goal; wildfire smoke contributed to 1 day. In 2022, the Tideflats had 15 days where air quality exceeded PSCAA's health goal; wildfire smoke contributed to 13 days.

More detailed information on [Air Quality](#) can be found in the [Draft EIS](#).

Water Quality

There are six receiving waterbodies in the Tideflats area: Thea Foss Waterway, Middle Waterway, Puyallup River, Sitcum Waterway, Blair Waterway (Including Wapato Creek), and the Hylebos Waterway (Including Hylebos Creek). The Puyallup Watershed drain into these waterbodies through streams, creeks, rivers, ditch systems, and underground conveyance systems. The built environment's stormwater and wastewater systems also drain into these waterbodies through pipes and outfalls. Stormwater from precipitation can carry pollutants such as sediment, debris, oil, grease, and chemicals across land surfaces into waterbodies. In the Tideflats, stormwater flows through approximately 2,200 catch basins, which help capture pollutant and debris, and directly discharges into Commencement Bay through about 130 outfalls. Wastewater (separate from stormwater) for numerous jurisdictions is treated at two wastewater plants before it is released into Commencement Bay; the Central Wastewater Treatment Plant is located on the banks of the Puyallup River in the Tideflats. The Central Wastewater Treatment Plant is permitted a Maximum Month Flow (MMF) of 60 Million Gallons per Day (MDG) or 227,000 m³/day.

The Clean Water Act regulates water quality standards for waterbodies and through the National Pollutant Discharge Elimination System (NPDES), requires discharge permits to manage and control stormwater and wastewater in municipal and non-municipal systems. Discharge permits are also required for operations with manufacturing, industrial, and certain transportation uses. Enhanced water quality treatment is required for projects that discharge to sensitive habitat areas. Tacoma's [Stormwater Management Manual \(SWMM\)](#) Figure 1-4 shows the Natural Resource Damage Assessment (NRDA) areas and other sensitive habitat areas proximate to the Tideflats that would be subject to enhanced water quality treatment requirements.

² [Northwest Ports Clean Air Strategy | Northwest Seaport - Port of Tacoma \(nwseaportalliance.com\)](#)

All of the receiving waterbodies are part of the Commencement Bay Superfund site. Various remediation efforts have occurred and continue to occur. For additional information on past and existing remediation efforts, refer to the Brownfields and Remediation Issue Paper.

The Puyallup River supports several salmonid species including coastal cutthroat trout, bull trout, steelhead/rainbow trout, and Chinook (spring and fall), sockeye, coho, pink, and chum salmon (WDFW 2020a; WDFW and NWIFC 2020). Wapato Creek and Hylebos Creek support a smaller set of salmonid species including steelhead, coho, Chinook (fall), pink, and chum. Three of these fish species are listed as threatened under the federal Endangered Species Act (ESA) (Chinook, bull trout and steelhead), have designed critical habitat in the study area and are also listed in Washington State by WDFW.

Stormwater Management

All surface water in the City of Tacoma drains from two regional watersheds: the Puyallup-White River Watershed and the Chambers-Clover Creek Watershed. The portions of the two regional watersheds that are located within Tacoma's city limits are divided into 9 sub-watersheds and drain into local waterbodies. The Tideflats sub-watershed encompasses over 2,600 acres. In addition to the identified 9 sub-watersheds, there are 15 priority subbasins³ identified in the City of Tacoma's Stormwater Management Action Plan; 3 priority subbasins are located within the Tideflats (Exhibit 5).

Stormwater infrastructure within the Tideflats includes drainage structures, inlets, and catch basins, underground storm drainpipes, and surface ditches. Over 70% of waterfront operations have stormwater treatment/filtration systems installed and operational to capture pollutants from their properties.

As part of the NPDES Phase I Municipal Stormwater Permit (MS4), the City of Tacoma maintains a Stormwater Management Program Plan (SWMP). An Interlocal Agreement (ILA) between the City of Tacoma and the Port facilitates coordinated stormwater compliance. The Puyallup Tribe also manages and permits discharge points within the study area on tribal properties, including the section of the Puyallup River starting at the Lincoln Avenue Bridge and extending beyond the study area boundary upstream (Strobel 2023).

The Port manages stormwater through their own NPDES Phase I MS4 permit as a secondary permittee. As part of this permit, the Port is also required to maintain a SWMP for lands it owns and operates within the Tideflats. The SWMP summarizes how the Port complies with its permit requirements including: an education program, public involvement and participation, illicit discharge detection and elimination, construction site runoff control, post-construction stormwater

³ A subbasin is a smaller delineated area within a larger watershed. Planning at the subbasin level allows for more detailed analysis and understanding of the distribution of water resources, hydrological processes, and potential impacts from human activities. Planning at the subbasin level usually targets localized water quality issues, managing stormwater runoff, protecting sensitive habitats or species, and addressing infrastructure needs such as drainage systems or flood control measures.

management for new development and redevelopment, operation and maintenance program, and source control in existing developed areas.

Through the management of the City of Tacoma's SWMP, the Tideflats were identified as a priority area in the City of Tacoma's stormwater planning process. The City of Tacoma is conducting several studies to find ways to improve surface water quality prior to discharge to waterways, such as stormwater treatment devices and Low Impact Development (LID) technologies. Further, Tacoma's Capital Facilities Program plans to expand its stormwater system with an increasing emphasis on green infrastructure. The City of Tacoma is also in the process of developing Tacoma's first Urban Waters Protection Plan, which is a watershed management plan to protect Tacoma's streams, wetlands, lakes, and shorelines from pollutants carried in stormwater.

The City of Fife, through the Western Washington Phase II Municipal Stormwater Permit, manages stormwater through a Stormwater Management Manual. Stormwater runoff generated in Fife reaches the Tideflats waterways through a combination of storm drains, pipes, ditches, and streams. Three natural watercourses flow through Fife before entering the Tideflats: Puyallup River, Wapato Creek, and Hylebos Creek. Two manmade ditch systems provide storm drainage to large portions of Fife, with their outfalls being locating within the MIC boundary. The Fife Ditch discharges into the Hylebos Waterway, and drains approximately 1,205 acres in Fife, including the City Center and ST TDLE station location(s). The Fife Ditch is currently under the control of a special purpose district, Drainage District 23, who has been in conversations with the City of Fife to dissolve into Fife's drainage system. The Erdahl Ditch discharges into the Blair Waterway via a city/private maintained system of ditches which terminate in two pumps in the southwest corner of the Blair turning basin. The Erdahl system drains approximately 1,100 acres of Fife including development on Tribal Trust property (70 acres) and property owned by the Union Pacific Railroad (200 acres). The City of Fife also consults and coordinates with the Puyallup Tribe and Drainage District 23, a special purpose district that manages the drainage ditches and culverts in north Fife and adjoining Pierce County areas.

Stormwater management around the Puyallup River, Blair Waterway, and Hylebos Waterway⁴ is critical as these waterbodies support several salmonid species, including coastal cutthroat trout, bull trout, steelhead/rainbow trout, and Chinook (spring and fall), sockeye, coho, pink, and chum salmon. Three of the fish species found in these waterways are listed as threatened under the federal Endangered Species Act (ESA): Chinook, bull trout, and steelhead.

More detailed information on [Water Quality](#) and [Stormwater Management](#) can be found in the [Draft EIS](#).

Plants and Animals

The Tideflats have been extensively altered by dredging, filling and diking as well as installing high levels of impervious surface coverage associated with the intense industrial and port land

⁴ The Wapato Creek drains to the Blair Waterway. The Hylebos Creek drains to the Hylebos Waterway.

uses. Natural drainage features, which historically supported wetlands and streams important for fish and wildlife, either no longer exist or have been heavily modified. Small areas of restoration activity have occurred as mitigation for impacts in the Tideflats, and these areas provide important habitat patches for fish and wildlife traveling through the Tideflats. The Port has participated in restoration and mitigation activities by building most of the mitigation acreage in the lower Puyallup River.

Despite substantial modification of the Commencement Bay nearshore, Washington Department of Fish and Wildlife (WDFW) has documented forage fish (i.e., surf smelt and sand lance) spawning at the west edge of the Middle Waterway, near the mouth of the Puyallup River, and along the upper intertidal zone of the sand-gravel beaches of the former Milwaukee Waterway, which is a 30-acre habitat mitigation site located between the Puyallup River and Sitcum Waterway. Restored intertidal wetlands and riparian buffers associated with mitigation sites have provided habitat for shorebirds, waterfowl, and upland birds to breed and overwinter. The edges of the Tideflats' waterways are also productive habitats for shellfish.

The Tribe also practices commercial and ceremonial crab, shrimp, sea urchin, sea cucumber, and geoduck fisheries within the Tideflats. Fishing Area Section 26D is the area which includes the entirety of the Tideflats. These fisheries can be seasonal in nature or serve a special ceremonial purpose.

Restoration projects recreating intertidal habitat improve plant diversity in the area by installing native plants. Vegetation, where present, is typically grass, street trees, or shrubs. There are no old-growth forests in the Tideflats study area.

More detailed information on [Plants and Animals](#) can be found in the [Draft EIS](#).

Tree Canopy

The 2018 Tacoma Tree Canopy Report concluded that Tacoma's urban tree canopy represented 20% of the total land area found within city limits; this is the least amount of tree canopy as a percentage of land cover for all communities assessed in the Puget Sound Region.

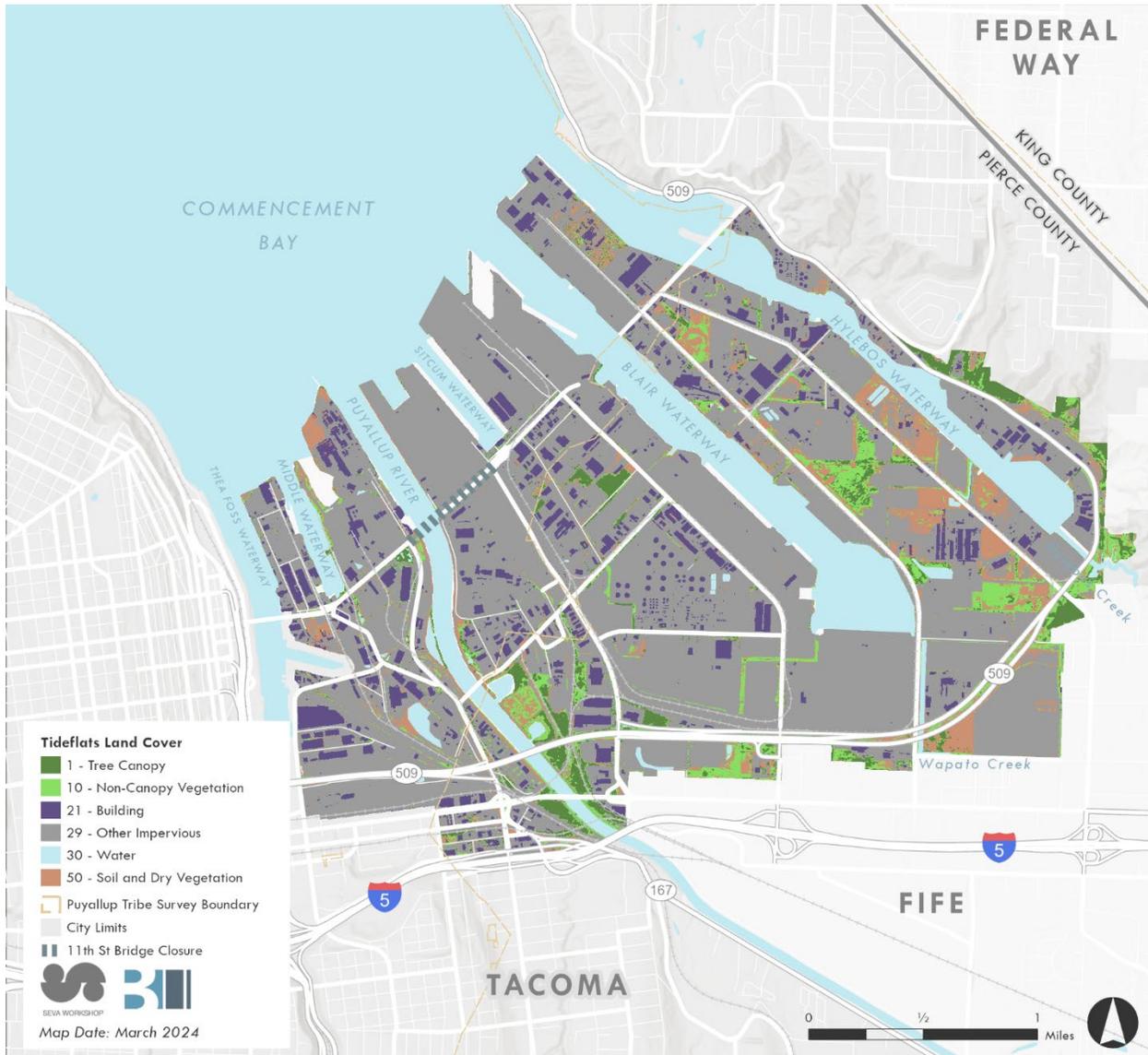
The Tideflats have 4% total tree canopy cover. Non-canopy vegetation, bare soil, and dry vegetation⁵ represents 14% of the land cover. Further, impervious surfaces represent 81% of the land cover in the Tideflats, which reflects the heavy industrial uses found in the area as well as the historic transformation of the Tideflats.

Impervious surfaces such as pavement and buildings absorb a significant amount of heat during the day and slowly release it back into the surrounding area. Areas with a high prevalence of impervious surfaces, such as the Tideflats, are prone to higher extremes in temperatures, also known as urban heat island effect. Elevated temperatures can pose serious threats to human

⁵ Non-canopy vegetation includes grass, open spaces, and shrubs. Dry vegetation describes landscaping that is dried or dead vegetation.

health, which include increased risk of cardiovascular diseases, respiratory diseases, and heat stroke. The Tideflats subarea currently supports over 10,000 jobs. With limited natural landscapes in the area, workers are exposed to elevated and extreme heat.

Exhibit 2. Land Cover by Classification



Source: City of Tacoma Environmental Services, 2017

The 2018 Tacoma Tree Canopy Report identified over 200 acres of land within the Tideflats that would be suitable for plantings, which would expand the tree canopy to represent 10% of the total land cover in the Tideflats. An expanded tree canopy could provide numerous ecological benefits such as improved air quality, enhanced water quality, stormwater management, and temperature regulation. However, it should be noted that 90% of the land was determined as currently unsuitable for plantings due to existing land cover being primarily paved surfaces and

structures. In order to increase opportunities for tree planting above the 10% of landcover, it would require pavement removal or other considerations to access new planting areas.

Health

Planning impacts health through its influence on the social and community determinants of health. These factors include housing, jobs, access to fresh produce, education, air quality, heat exposure, access to parks, and transportation. Lack of access to economic opportunity, substandard housing, lack of access to grocery stores, good schools and transit are all factors that contribute to poor health.

Housing, transportation, public services, economy, public safety and environmental stewardship are all factors that impact health and are most likely to be influenced by the policies of this Subarea Plan. Policies and actions related to health are therefore discussed across the chapters of the Subarea Plan. This issue paper will include policies and actions related to the Environment topic.

Exhibit 3. Determinants of Health

Topic	Determinant of Health
Housing	<ul style="list-style-type: none"> ▪ Access to affordable housing for workers in the Tideflats ▪ Homelessness response – Access to permanent supportive housing and emergency housing
Transportation	<ul style="list-style-type: none"> ▪ Vehicle Miles Traveled (VMT) ▪ Travel time to work ▪ Public transit access and use ▪ Bike lanes ▪ Pedestrian injuries ▪ Multimodal transit hubs
Public Services	<ul style="list-style-type: none"> ▪ Childcare ▪ After school programs ▪ Restaurants ▪ Emergency response times ▪ Evacuation (disaster response)
Economy	<ul style="list-style-type: none"> ▪ Living wage jobs ▪ High employment rates ▪ High number of jobs that provide health insurance
Income is one of the strongest and most consistent predictors of health and disease in public health research literature.	
Environment	<ul style="list-style-type: none"> ▪ Access to public space and recreation ▪ Total impervious area

Topic	Determinant of Health
	<ul style="list-style-type: none"> ▪ Air quality ▪ Indoor Air Quality ▪ Noise ▪ Water quality ▪ Food Source Purity

Source:

Tribal Assets

The spuyaləpabš, who are also known as the Puyallup Tribe of Indians, have lived on the headwaters of the Puyallup River since time immemorial. The Spuyaləpabš continue to live and practice traditional lifeways in this area such as hunting, fishing, and gathering. There are 19 recorded ethnographic places known to be within or near the Tideflats; these include locations of important events, village sites, burial locations, and geographical features.

Depending on the relative depths of site burial and ground disturbances caused by historic and recent development, this area has the potential to contain Holocene archaeological sites. The Department of Archaeology and Historic Preservation's Statewide Predictive Model classifies the study area as Very High risk for precontact-era archaeological sites (DAHP 2010). This is consistent with the Tribe's Historic Preservation Department models as well.

Activities within the Tideflats have the potential to both directly and indirectly impact cultural resources. Potential restoration work can impact known and unknown archaeological resources because of the associated ground disturbance and associated increases in public access. With increased public access comes the increased likelihood that archaeological resources could be damaged or destroyed, or the character of unknown cultural resources associated with a traditional tribal belief or practice could be impacted. Areas that should be approached with caution are:

- Submerged lands that previously served as coastal areas
- areas above the historic shoreline
- areas near recorded precontact-era archaeological sites
- areas with a high probability of containing unrecorded precontact-era archaeological sites
- areas near spuyaləpabš cultural sites

More detailed information on **Tribal Assets** can be found in the [Draft EIS](#) under *Cultural Resources*.

Environmental Impact Statement Findings

This EIS analyzes four alternatives, including a No Action Alternative and three development alternatives. The alternatives include ideas to be analyzed that would lead to the development of a Preferred Alternative. The three development alternatives are measured against the baseline assumptions in the No Action Alternative. For purposes of the No Action Alternative, it is assumed that development would occur within the Tideflats Subarea based on the land use, zoning, and development standards in the current Comprehensive Plan. The development alternatives are based on variations of components, such as the amount and distribution of growth, and the implementation of new policies.

Analyzing different alternatives, and especially the differences among them, allows decision-makers and the public to compare the effects of different options and ultimately to select a Preferred Alternative. The Appendix includes a table that summarizes the impacts and mitigation measures related to Environment and Tribal Assets that would potentially result from the alternatives analyzed in the Draft EIS. This summary table is not intended to be a substitute for the complete analysis of each element that is presented in the DEIS.

See the [Draft EIS](#) summary for findings of the EIS.

Goals

Guiding Principle 1. Salmon and shellfish are thriving and plentiful in Commencement Bay, the Puyallup River, Wapato Creek, and Hylebos Creek.

Policy EH-1: Monitor salmon and shellfish populations, and work with partners to develop strategies to support them.

Guiding Principle 2. The subarea supports healthy communities and ecosystems with clean air, water, and soil.

Policy EH-2: (GOAL CP-4) Work in partnership with the Port of Tacoma and other property owners to promote protection, restoration and enhancement of vegetative cover, waterways, wetlands and buffers.

Policy EH-3: (Policy CP-4.1) Encourage the use of low impact development standards and stormwater features.

Policy EH-4: (Policy CP-4.2) Partner with the Port of Tacoma and other interested stakeholders to establish environmental improvement goals for Commencement Bay, including providing for greater baywide diversity of ecosystems, restoration of historic environmental functions and improvement of physical conditions. Support efforts to identify funding mechanisms and legislative support for strategies to achieve these goals.

Policy EH-5: Address the legacy of industrial pollution in the center, working with property owners to clean up contaminated sites, and ensuring permitting processes require site-specific evaluation and mitigation.

Policy EH-6: Develop partnerships with local municipalities to advance brownfield cleanup and redevelopment.

Policy EH-7: Pursue public/private partnerships to support cleanup funding.

Policy EH-8: Pursue federal and state grants for Site Assessment and Cleanup.

Policy EH-9: Improve subarea site assessment databases to support brownfield prioritization, cleanup, and facilitate due diligence around future property transactions.

Policy EH-10: Work with Ecology to streamline the MTCA process specific to the Tideflats.

Policy EH-11: Partner with local Universities to advance research and the state of the environmental science while supporting job skills development.

Policy EH-12: Ensure no net loss of ecosystem composition, structure, and functions and strive for net ecological gain.

Guiding Principle 3. Employees in the subarea have a safe and healthy work environment.

Policy EH-6: New critical facilities should be located outside of geohazard and flood hazard areas when possible – however, still close enough to provide workers in the center with services such as police, fire, emergency medical, and childcare.

Policy EH-7: Collaborate with businesses and workers in the subarea to support workplaces that meet or exceed the latest standards for health and safety, reducing employee exposure to air pollution and other occupational hazards.

Guiding Principle 4. An inclusive and equitable growth strategy fulfills environmental justice principles and protects frontline communities from health and human hazards.

Policy EH-10: Seek to avoid or mitigate environmental impacts for vulnerable populations, including communities who already bear a higher burden of environmental impacts within the subarea and neighborhoods immediately adjacent to the subarea.

Policy EH-11: Establish design standards that help mitigate environmental health impacts of manufacturing and industrial activities both within the center and on adjacent areas.

Policy EH-12: Site and design public spaces to minimize exposure to health hazards including those generated by current and past industrial and transportation sources.

Guiding Principle 5. The subarea offers diverse opportunities to participate in cultural, educational, scientific, and recreational activities.

Policy EH-13: Where practical, development should include public recreation spaces within the subarea, including access to tidal areas and views of historic and cultural sites. Within these public spaces provide educational signage or other opportunities for people to learn about the history and culture of the area.

Policy EH-14: Where practical, provide opportunities, spaces, and appropriate facilities for diverse forms of water-oriented recreation that take advantage of the unique waterfront setting within the Tideflats subarea and informs and educates the community about a maritime industrial Port.

Policy EH-15: Promote and protect access to tidelands and waterways within the subarea for traditional Tribal cultural practices like fishing, clamming, crabbing, and canoeing activities consistent with federal maritime security regulations.

Policy EH-16: Ensure shoreline public access within the Port of Tacoma Manufacturing Industrial Center is consistent with federal maritime security regulations and is not focused on the cargo shipping waterways.

Policy EH-17: Coordinate with property owners in the center to provide programming opportunities where people can learn about local industries and the history and culture of the area.

Policy EH-18: Shoreline public access and recreation should be sited in such a way as to:

- Avoid and minimize conflicts with Port operations
- Avoid and minimize conflicts with Tribal Treaty fishing rights
- Ensure safety and security of the site and adjacent uses
- To provide low-impact access to natural areas and habitat sites

Policy EH-19: Where practical, focus shoreline public access and recreation in the transition areas to balance the needs of industrial activities and Port operations in the core area.

Policy EH-20: Where practical, development should include shoreline public access and public recreation spaces within the subarea, including access to tidal areas and views of historic and cultural sites. Within these public spaces provide educational signage or other opportunities for people to learn about the history and culture of the area.

Policy EH-21: Where practical, provide opportunities, spaces, and appropriate facilities for diverse forms of water-oriented recreation that takes advantage of the unique waterfront setting within the Tideflats subarea and informs and educates the community about a maritime industrial Port.

Policy EH-23: Coordinate changes in shoreline public water access and design of public access sites with the Puyallup Tribe to ensure these sites are supportive of Treaty fisheries access.

Policy EH-25: Design facilities to respond to the unique cultural, maritime, and environmental setting of the site.

Guiding Principle 6. Reservation and tribal lands are protected from encroachment, preserving the unique cultural characteristics that support the Puyallup Tribe of Indians' traditional way of life.

Policy TA-1: Coordinate with the Puyallup Tribe of Indians to identify and implement encroachment prevention strategies to protect reservation and tribal lands, such as design standards and allowable uses for adjacent properties.

Policy TA-2: Consult with the Puyallup Tribe of Indians on land use decisions that may impact tribal assets within the subarea as per the Puyallup Land Claims Settlement.

Policy TA-3: Analyze zoning and land use with an environmental justice lens to determine compatibility with tribal lands given the subarea's unique designation as a federally designated Indian Reservation.

Policy TA-4: Protect the Treaty-oriented, traditional, and ceremonial activities of the Puyallup Tribe of Indians from development related impacts.

Policy TA-5: To best promote the need for the Puyallup Tribe to have a consolidated land base to serve its members and meet the intent of Federal Indian policy to avoid further fractionation of the Puyallup Reservation, regional partners should identify surplus land strategies to restore ownership of land within the Puyallup Reservation to the Puyallup Tribe of Indians. (Ex. First right of refusal policies, mitigation project transfers, transfer of unimproved right-of-way that does not serve a public benefit, transfer of sites with severe development constraints due to known cultural resources).

Guiding Principle 7. Cultural and historic resources are protected, elevating the subarea as a site of cultural practices for the Puyallup Tribe of Indians.

Policy TA-6: Conduct best practices to prioritize protection of cultural resources within the subarea such as requiring studies where there is high likelihood for impacting cultural resources and take preventative measures to promote avoidance and disturbance of known cultural resources.

Policy TA-7: Develop measures to protect cultural and historic resources that are exposed due to landslide, erosion, sea level rise, and other climate related impacts.

Priority Actions and Regulatory Recommendations

Action TA-1: For archaeological resources, conduct a thorough review under the existing regulatory framework to avoid, minimize, or mitigate impacts on these resources within the study area.

Action TA-2: Support cultural resources review by undertaking a comprehensive assessment of the Tideflats area to establish a framework for future cultural resources studies. This comprehensive assessment could include:

- Establishing the cultural and environmental context of the study area.
- Reviewing the previously recorded cultural resources within the study area.
- Incorporating information gathered through tribal consultation.
- Developing expectations for the presence of archaeological resources.
- Providing standard procedures for the inadvertent discovery of cultural resources within the study area.
- A review of the Tacoma Municipal Code (TMC) to identify chapters or sections that could be amended to address cultural resources review of projects or permits. Specifically, language in the TMC should be reviewed or amended to specifically identify the study area as an MIC center (TMC 13.12.570.A), and Title 19 Shoreline Master Program should be reviewed.
- Updating cultural resource data and mapping on a regular basis as new information is provided from cultural resource findings.

Action TA-3: Continue historic property inventory surveys, eligibility assessments, and completion of inventory forms to avoid or mitigate any impacts of future development.

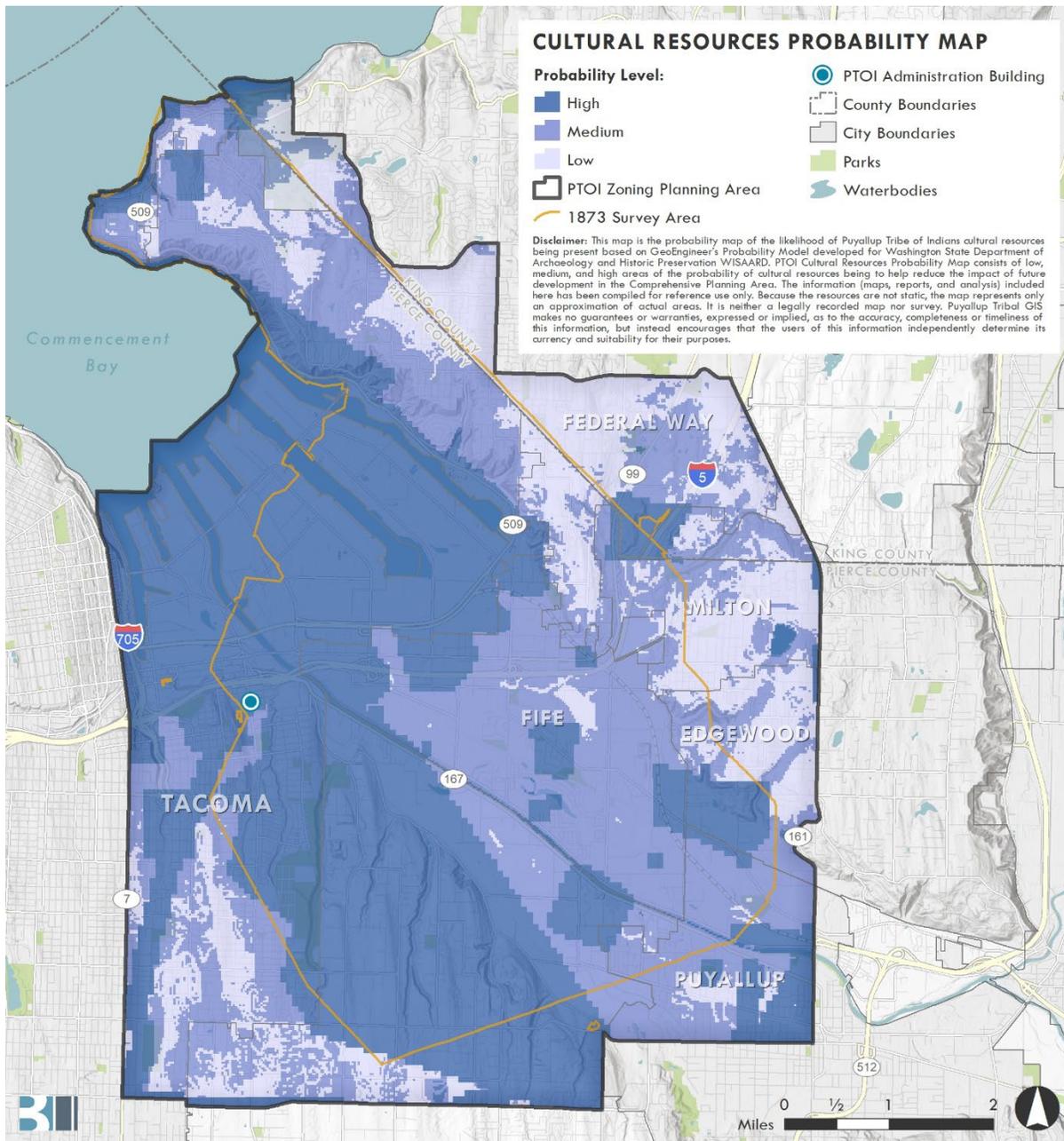
Action TA-4: Develop a Planned Action permit review process with the Puyallup Tribe of Indians. For example, in the Planned Action Ordinance, the City could identify a decision tree regarding cultural resources review requirements at a project level. This could include:

- Require inadvertent discovery language on all related permits (compliance with RCW 27.53, 27.44).
- Develop a “decision tree” for both above-ground and below-ground resources could be developed to determine the appropriate level of investigation and, if necessary,

mitigation. The City could consider the Puyallup Tribe of Indians Cultural Resources Probability Map (see Exhibit 4 below). Less review could be required on sites already previously surveyed in the last 10 years, or on culturally sterile fill, or where no ground disturbance is proposed. If cultural resources are present and ground disturbance is proposed, then a risk assessment and consultation with DAHP and Tribes would be applied. Conditions for monitoring could be developed. Permits could be conditioned with a mitigation strategy.

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Exhibit 4. Puyallup Tribe of Indians Cultural Resources Probability Map



Source: Puyallup Tribe of Indians, Comprehensive Plan, 2023; BERK 2021

Action TA-5: Protect cultural resources at risk due to exposure to sea level rise.

- Protect, enhance, and restore ecosystems to meet tribal treaty rights and conserve culturally important consumptive and nonconsumptive resources including foods, medicinal plants, and materials that could be adversely impacted by climate change.

- As part of government-to-government efforts with the City and Puyallup Tribe of Indians consider climate impacts on archaeological sites and collaborate on strategies to preserve such sites.
- Protect significant historic sites prone to floods or other hazards worsened by climate change by raising, retrofitting, or relocating buildings that are designated as historic.

Action TA-6: Support cultural and natural resources, and treaty rights, including but not limited to:

- Invite the Puyallup Tribe of Indians to contribute to the design of public development or infrastructure in the subarea.
- Develop joint shoreline restoration plans within the Tideflats with the Puyallup Tribe of Indians as part of the Shoreline Master Program to encourage collaborative decision-making and shared governance.
- Develop native landscape standards for public gathering, rights of way, and other green spaces.

Action TA-7: Identify parcels for strategic acquisition that are not developable, locations that would provide a buffer or transition adjacent to sensitive uses (habitat or cultural sites), locations that have restoration potential or create contiguous sites, locations such as geo hazards, etc. that would help avoid risks to life and property to avoid property speculation.

Action EH-1: Create a proactive habitat restoration plan for the Tideflats to increase restoration acreage to 250 acres. The Plan can address opportunities and priorities for restoration to protect and seek gain in ecological function. This can include:

- A coordinated mitigation and restoration strategy and site prioritization, a greater focus on connectivity among restoration areas, as well as pro-active investments in restoration.
- A programmatic approach to mitigation and restoration that considers the habitats and species utilizing the study area, and opportunities to structurally enhance specific sites and corridors for the benefit of all or portions of species life history stages.
- Consider sea level rise, and plan to enhance habitats at a range of topographic elevations to allow for habitat adaptation and resiliency to sea level rise.
- Opportunities to collaborate with the City of Tacoma to identify and implement further riparian restoration within the Tideflats.
- identifying sites for mitigation or working with property owners to enhance or preserve existing open space to serve as possible mitigation locations.

Action EH-2: Increase tree canopy in the Tideflats from 4% land cover to 8% land cover by 2030 and 16% by 2045. Potential steps to increase tree canopy include:

- Modify existing street tree policy to require street trees for all development regardless of location and type of improvement. Existing policy requires street trees in PM1 and M1/M2 districts under 2 conditions: 1) for new development, alterations, and street improvements

on 4 gateway corridor or 2) for street improvements, sidewalk improvements, or sidewalk replacements.

- Target tree plantings along the gateway corridors: Marine View Drive, E. 11th Street west of Portland Avenue, Portland Avenue (south of E. 11th Street), Port of Tacoma Road (south of E. 11th Street).
- Establish tree credit requirements where active land developments must comply with minimum requirements. Determine the appropriate minimum requirements for PMI and M1/M2 districts. The City of Renton's tree credit minimum requirement is 30 credits per net acre for all development. The City of Kirkland's tree credit minimum requirement is 50 credits per acre for residential developments.

Action EH-3: Increase landscaping requirements. Potential regulatory changes include:

- Increase site landscaping requirements to 10% of total site area. *Currently, in Industrial Districts, parking areas over 20,00 square feet need to landscape only 5% of the area. In the City of Sumner, the total amount of landscaping cannot be less than 10% of the total site area and there are no minimum thresholds for sizes. Pierce County stipulates that each project site must dedicate 10% of the area to landscaping.*
- Establish requirements for site perimeter landscaping, particularly in the Transition Areas and adjacent to other sensitive uses, i.e. public access/recreation sites, or cultural sites. *Currently, site perimeter landscaping is not required in Industrial Districts. The City of Fife stipulates a minimum of 10 feet of perimeter-type landscaping along the front property line.⁶ Pierce County requires planting street trees along all road frontages.*

Action EH-4: Set impervious surface standards for the MIC.

- Require new development to limit impervious areas to 75% of lot area and/or 85% with a mitigation plan.
- Incentivize changes to existing impervious surfaces

Action EH-5: Increase building setbacks from shoreline for buildings that are not a water-dependent use. *Currently, Tacoma stipulates that a setback from the landward edge of the marine shoreline buffer cannot be less than 10ft.*

Action EH-6: Increase marine shoreline buffer. Correct encroachment for areas that have seen a decrease in buffer widths. Review best available science (BAS) to inform updates to the Shoreline Master Program and Critical Areas code. Existing marine buffer widths and functionality, buffer modification allowances, and the potential cumulative impacts of continuing industrial activities should be evaluated. BAS and code updates should also consider increased coastal flooding potential from sea level rise. *Currently, Tacoma stipulates a 50ft buffer for marine habitat areas in S-8 (Thea Foss Waterway) and S-10 (Port Industrial); for riparian habitat areas in S-9 (Puyallup*

⁶ City of Fife has additional stipulations for site perimeter landscaping for Industrial Districts that involve a front yard or interior yard. These may not be relevant to the properties in the Tideflats and were omitted.

River) the buffer is 150 ft from the ordinary high-water mark. Pierce County dictates a 100ft conservation buffer under provisions for ecological protection.

Action EH-7: Inventory and characterize the culverts within the Tideflat Subarea to determine asset age, replacement needs, and assess potential fish passage barriers.

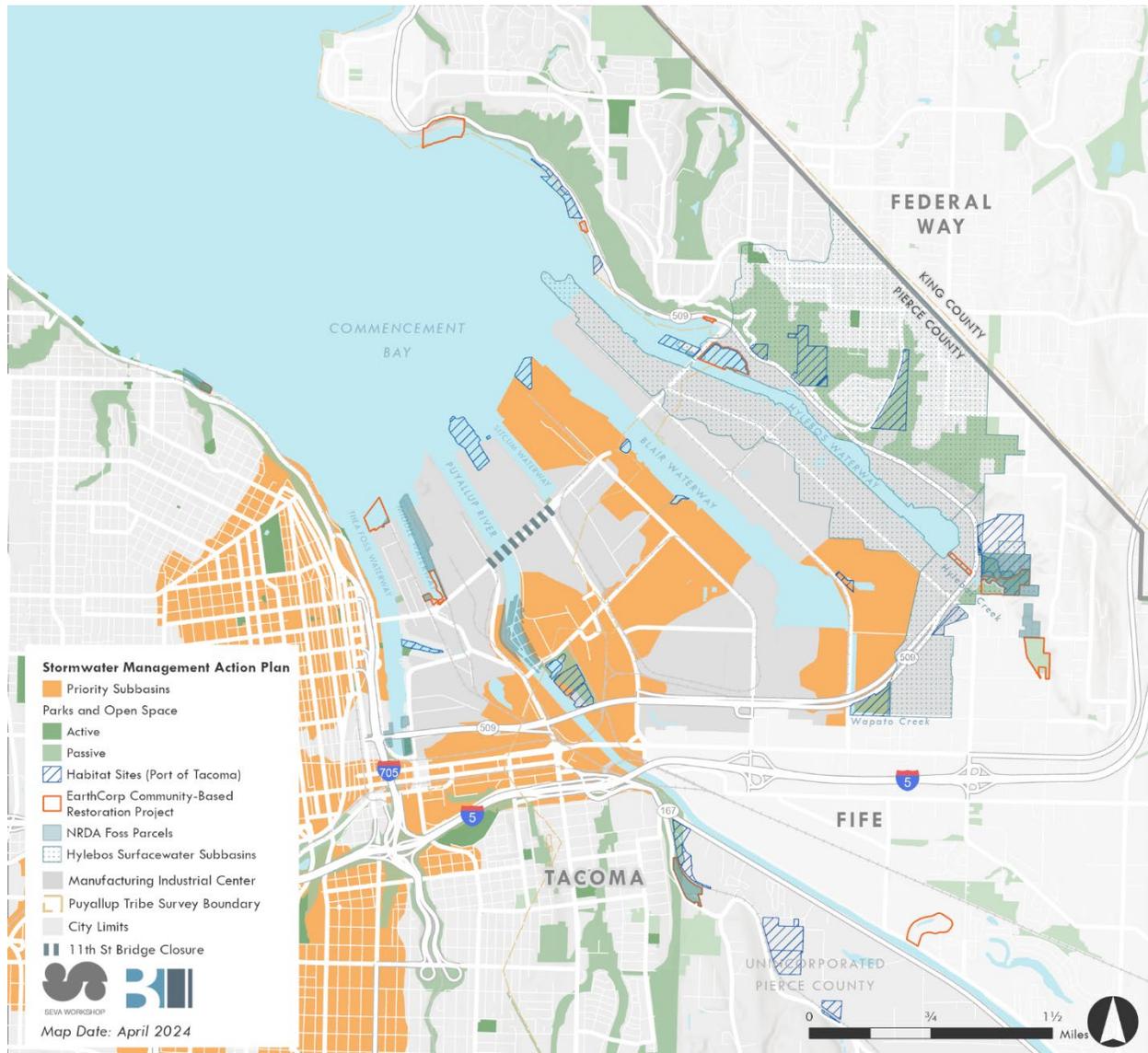
Action EH-8: Implement riparian improvements along Alexander Ave E between 4th St E and 509 to manage stormwater runoff and further improve water quality of Wapato Creek.

Action EH-9: Increase habitat restoration activities along Puyallup River. Activities include correcting encroachment for areas that have seen decreases in buffer widths, designing and implementing projects that ensure ecologically productive buffers.

Action EH-10: Require the use of green stormwater infrastructure and low-impact development to address increased storm intensities and stormwater runoff, especially in areas found within the priority subbasins for Stormwater Management defined below. See *related action EH-25*

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Exhibit 5. Priority Subbasins for Stormwater Management



Source: City of Tacoma, 2024; Seva Workshop, 2024.

Action EH-11: Establish an Equitable Climate Action Plan Consistency Checklist. Proposed projects must submit the Checklist; the project must demonstrate it aligns with the Tacoma Climate Action Plan and has a greenhouse gas emissions reduction plan that aligns with local greenhouse gas emissions reduction goals.

Action EH-12: Increase street sweeping along roads and highways to decrease exposure to road dust and improve stormwater management. See *related action EH-25*

Action EH-13: Consider a local pollution surcharge for large producers of air pollutants and wastewater. The funding can help support habitat restoration and meditation projects.

Action EH-14: Develop and implement an urban heat resilience strategy.

Action EH-15: Explore with the Puyallup Tribe a phased transfer of ownership of open space and land designated for habitat or habitat protection.

Action EH-16: Require health risk analyses for new projects (including housing units).

Action EH-17: Update required mechanical ventilation systems based on the best available science to ensure indoor air quality in any proposed housing, workplaces and uses where people gather like schools.

Action EH-18: Require new projects that require registering air pollution equipment with the local air agency or substantially altering transportation volumes (road, rail, or marine) to demonstrate that they do not cause an increase in ambient air quality concentrations at the local air monitoring sites. The modeling demonstrations will also consider decommissioned air emission sources associated with the project.

Action EH-19: Update Tacoma Code to require new projects to achieve net zero emissions using the following, as applicable:

- Electrification of combustion activities
- Increase the number of EV-capable or EV-ready parking spaces
- Mandate the use of energy efficient appliances
- Use transportation routes away from residential regions
- Provide environmental complaint contact information along the fenceline (e.g., QR codes to connect to PSCAA complaint site or City of Tacoma complaint site)

Action EH-20: Incentivize projects which are focused on clean technologies and/or processes as well as those operators that deploy clean fleet relative to fleet standards in Washington.

Action EH-21: Improve community information and action for air quality:

- Implement community-based air quality monitoring (CBAQM). Lower-cost air quality sensors could be installed and help identify micro-climates and exposures. It could help inform equitable policies, investments, or actions. *The City of Tacoma is working with the Nature Conservancy to set up an AQ monitoring program in specific neighborhoods (currently working on Tacoma Mall Subarea).*
- Sponsor Community Action Plans to address environmental justice and health impacts. The City could support communities in Tacoma to create the strategic plans, in conjunction with the Tacoma-Pierce County Health Department, PSCAA, or Ecology.

Action EH-22: Incentivize industries focused on clean technologies/processes. Consider strategies in Tacoma's Green Economic Development Strategy (RM Donahue Consulting et al, 2023).

Action EH-23: Support zero emission technology innovation in the marine, trucking and rail sector. Offer more incentives to replace diesel trucks with cleaner engines or zero emission engines.

Action EH-24: Adopt applicable best management practices (BMPs) to manage particulate tire wear, 6PPD, and 6PPDquinone and their effects on fish habitat:

- **Stormwater source control BMPs:** prevent stormwater contamination with methods such as roof or street sweeping to control runoff from tires, tire products, and tire wear particulates.
- **Flow control BMPs:** slow runoff down and reduce runoff volumes by holding water back via infiltration methods such as ponds, infiltration basins, and bioretention where possible.
- **Runoff treatment BMPs:** reduce concentrations of the targeted pollutants, typically through physical filtration or chemical sorption media like biofiltration swales, bioretention, and manufactured treatment devices.

Action EH-25: Fund grants for building energy efficiency upgrades to reduce infiltration of pollutants and to install high-efficiency air filtration systems at critical and sensitive facilities (schools, day care facilities, apartments, other).

Action EH-26: Urban greening to filter pollution – equitable funding strategies to advance Tacoma’s Urban Forest Management Plan in overburdened communities.

Action EH-27: Consider adopting noise standards for areas in the periphery of the Tideflats MIC.

Note: Tideflats does have a noise exemption (passed by City Council in 2015). Residents in Northeast Tacoma have petitioned to get it repealed. Schnitzer Steel is working to develop a noise compliance plan with measures to reduce noise levels after receiving a noise violation unrelated to marine activities.

Action EH-28: Coordinate regularly with agencies who rely on public utilities within the Port of Tacoma MIC to meet state and federal requirements within their jurisdictions. Provide unified support, and funding where appropriate, for necessary upgrades to these facilities.