

TACOMA || TIDEFLATS

SUBAREA PLAN

ENVIRONMENTAL IMPACT STATEMENT

DRAFT EIS

APRIL 2024

Prepared by
CITY OF TACOMA, WASHINGTON





City of Tacoma
Planning and Development Services

April 9, 2024

Dear Reader,

Located in the heart of Commencement Bay, the Port of Tacoma Manufacturing and Industrial Center (MIC) includes over 5,000 acres of waterfront land providing vital saltwater and estuarian habitat for salmon, shellfish and other marine life; an economic center that includes industrial, manufacturing and maritime activity, and a world class Port that serves as an economic engine for the region. The MIC is also located within the ancestral lands of the Puyallup Tribe of Indians and continues to serve as an important location for their cultural traditions and the practice of tribal treaty rights. In recognition of the regional significance of the MIC, the City of Tacoma, Port of Tacoma, Puyallup Tribe of Indians, City of Fife, and Pierce County have partnered to develop a subarea plan for adoption by the City of Tacoma as part of the City's Comprehensive Plan.

The Tideflats subarea planning process is intended to create a shared long-term vision and more coordinated approach to development, environmental review, and strategic capital investments in the Tideflats. Completion of the subarea plan will support the ongoing eligibility for and prioritization of transportation funding in the regional manufacturing and industrial center.

With the issuance of the Draft Environmental Impact Statement (EIS), the City of Tacoma is excited to reach this next milestone in the development of the subarea plan. The Draft EIS considers four alternatives:

- **Alternative 1:** This alternative represents the baseline (called the No Action Alternative in EIS terms) or the policies, regulations, and programs in effect when the EIS process is initiated, and a Determination of Significance is issued. This alternative assumes that future growth will occur under the policies and regulations in place. Alternative 1 maintains existing zoning, with the most extensive heavy industrial zoning among the alternatives. Based on existing employment growth rates, it emphasizes current competitive advantages while allowing most flexibility for emerging markets and other commercial uses.
- **Alternative 2:** This alternative assumes greater restrictions on non-industrial activity in heavy industrial zoning districts. A greater focus on industrial employment is anticipated and industrial uses with higher employment densities are encouraged. Some Transition Areas become Light Industrial in this scenario.
- **Alternative 3:** This alternative represents highest overall employment density, with the same overall growth target as alternative 2, but with more land in restoration/conservation status. Transition areas are a combination of light industrial and transit-oriented manufacturing, and transit-oriented development around the Portland Avenue Station. This alternative represents a greater allowance for non-industrial uses within the Transition Areas.
- **Alternative 4:** This alternative maintains the policies of alternative 1. Transition Areas are zones between heavy industrial and non-industrial areas, providing for a mix of industrial and compatible non-industrial uses and performance standards to address off site impacts.

April 2, 2024

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The Draft EIS identifies environmental impacts and mitigation strategies for each alternative. Environmental topics evaluated in the Draft EIS include land use, population, employment, and housing, plants and animals, cultural resources, air quality, transportation, public services, and utilities.

Agencies, affected tribes, and members of the public are invited to comment on the Draft EIS. You may comment on the alternatives, probable significant adverse impacts, proposed mitigation measures, and licenses or other approvals that may be required. All comments are due no later than 5:00 pm on May 23, 2024, Pacific Standard Time (PST).

In addition, the City invites you to learn more about and comment on the proposal at an upcoming public comment meeting:

Virtual Draft EIS Public Comment Meeting: 6:00 pm PST, Thursday, April 25, 2024, on Zoom: <http://bit.ly/tideflatsdeismeeting>. The purpose of the meeting is to receive verbal comments on the Draft EIS from the public and interested parties. A court reporter will be in attendance to transcribe comments.

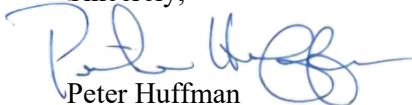
Project-related information can be reviewed on the project website at:

www.cityoftacoma.org/tideflatsplan

Following the Draft EIS comment period, the Tideflats Steering Committee will finalize their recommended draft subarea plan and forward that recommendation to the City of Tacoma for consideration. A Final EIS will be prepared that considers the Steering Committee's Recommended Plan as well as all the comments received during the Draft EIS public comment period. City Council action is anticipated in early 2025.

Thank you for your interest in Tacoma's Tideflats and the subarea planning effort. We look forward to reviewing your comments.

Sincerely,



Peter Huffman

Planning and Development Services Director/State Environmental Policy Act Responsible Official

FACT SHEET Draft Environmental Impact Statement

Project Name

Tacoma Tideflats Subarea Plan and Planned Action Environmental Impact Statement (EIS)

Date of Issue of Draft EIS

April 9, 2024

Proposed Action

The Proposed Action involves development of an innovative, area-wide Subarea Plan for Tacoma’s Tideflats, which will become an optional element of the City’s Comprehensive Plan. The Subarea Plan will include elements related to land use, economic development, the environment, public facilities and services, and transportation. The Subarea Plan is being developed for consistency with the Growth Management Act, Shoreline Management Act, multicounty planning policies, countywide planning policies, and the City of Tacoma Comprehensive Plan.

The Tideflats Subarea planning process is intended to create a shared long-term vision and more coordinated approach to development, environmental review, and strategic capital investments in the Tideflats. Completion of the Subarea Plan will support the ongoing eligibility for and prioritization of transportation funding in the regional manufacturing and industrial center. The overarching themes for the subarea planning process include:

- Economic Prosperity for All
- Environmental Remediation and Protection
- Transportation and Capital Facilities Planning
- Public Participation and Outreach

Project Proponent

City of Tacoma

SEPA Lead Agency

City of Tacoma

SEPA Responsible Official

Peter Huffman, Director, Planning and Development Services Department

Authors and Contributors

A list of authors and contributors is provided in this Fact Sheet.

Location of Background Materials

Background materials used in the preparation of this Draft EIS are listed in Chapter 11, *References*.

Permits, Licenses, and Approvals Likely Required for Proposal

- This is a non-project EIS for a broad area of the Tacoma Tideflats. While the Proposed Action by the City is described above, the following interim approvals were also made:
 - City of Tacoma:
 - Authorization to publish the Draft Tacoma Tideflats Subarea Plan for public review and comment.
 - Authorization to publish the Draft EIS for the Tacoma Tideflats Subarea Plan for public review and comment.
- Additional permits or approvals will be needed in conjunction with future project-specific development activity. Depending on the scope of development and the site, the following approvals could be required:
 - Puget Sound Clean Air Agency – Asbestos surveys (associated with building renovation/demolition) – Demolition Permits.
 - Tacoma – Pierce County Health Department – Underground Storage Tank Decommissioning Permit (site-specific, if applicable) City of Tacoma.
 - City Council Approval.
 - Planning and Development Services Department – Building permit – mechanical permits.
 - Public Works Department – Grading, Excavation and Erosion Control Permits – Street Use Permits (temporary – construction related) – Street Improvements (i.e., sidewalks, curb cuts, etc.).
 - Tacoma Public Utilities – Electrical Permits – Utility Extensions.

Public Comments on the Draft EIS

Written Comments		Verbal Comments	
Public Comment Period	This Draft EIS will be available for a 45-day public comment period.	Public Meeting Date and Time	A virtual public meeting will be held on Thursday, April 25, 2024, at 6 p.m. to receive verbal comments on the Draft EIS from the public and interested parties. Join by Zoom: bit.ly/tideflatsdeismeeting . A court reporter will be present to receive verbal testimony.
Date Written Comments Are Due	Comments must be received or postmarked by May 23, 2024.	Written Comment Submittal and Contact Information	Comments may be submitted online at: www.cityoftacoma.org/tideflatsplan By mail to: Stephen Atkinson, Principal Planner City of Tacoma, Planning and Development Services 747 Market Street, 3 rd Floor Permit Counter Tacoma, WA 98402

Document Availability

The Draft EIS is available online at the City of Tacoma webpage: www.cityoftacoma.org/tideflatsplan.

Printed copies of the Draft EIS are available upon request to review at no charge at:

747 Market Street
3rd Floor Permit Counter
Tacoma, WA 98402

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Timing of Additional Environmental Review

After the Draft EIS comment period concludes, the City of Tacoma (Lead Agency) will review and respond to comments. A Final EIS will be prepared that contains the responses to the comments and potential updates to the environmental document. The City of Tacoma anticipates releasing the Final EIS in late 2024.



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Abbreviations/Acronyms

Abbreviation/Acronym	Definition
°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
A	Aquatic
ADA	Americans with Disabilities Act
AHAS	Tacoma's Affordable Housing Action Strategy
ALS	Advanced Life Support
ARPA	Archaeological Resources Protection Act
ASA	Abandoned Shipwreck Act
AWC	Auto Warehousing Company
BAAQMD	Bay Area Air Quality Management District
BAS	best available science
BLS	Basic Life Support
BMPs	best management practices
BPA	Bonneville Power Administration
CBAQM	community-based air quality monitoring
CAP	Climate Action Plan
CAPs	criteria air pollutants
CAPCOA	California Air Pollution Control Officers Association
CCA	Climate Commitment Act
CEMP	Comprehensive Emergency Management Plan
CETA	Clean Energy Transformation Act
CFP	Capital Facilities Program
CFR	Code of Federal Regulations

Abbreviation/Acronym	Definition
cfs	cubic feet per second
CH4	methane
CIP	Capital Improvement Plan
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent
COLI	Center of Local Importance
Corps	U.S. Army Corps of Engineers
CPE	Container Port Element
CPP	Countywide Planning Policies
CSHI	Comprehensive Scheme of Harbor Improvements
CTP	Central Treatment Plant
CTR	Commute Trip Reduction
DAHP	Department of Archaeology and Historic Preservation
DOD	Department of Defense
DOH	Department of Health
DOT	Department of Transportation
DPM	diesel particulate matter
DW	Downtown Waterfront
EB 1	East Blair One Terminal
Ecology	Washington State Department of Ecology
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMS	emergency medical services
EPA	U.S. Environmental Protection Agency
ES	City of Tacoma Environmental Services
ESA	Endangered Species Act
Esri	Environmental Systems Research Institute
EST	East Sitcum Terminal
EV	electric vehicle
FCC	Federal Communications Commission

Abbreviation/Acronym	Definition
FERC	Federal Energy Regulatory Commission
FGTS	Freight and Goods Classification System
FHWA	Federal Highway Administration
FMC	Fife Municipal Code
FMSIB	Freight Mobility Strategic Investment Board
FTE	full-time equivalent
FWM	Fishing Wars Memorial
GCP	General Central Peninsula
GHG	greenhouse gas
GMA	Washington State Growth Management Act
gpd	gallons per day
HCM	Highway Capacity Manual
HEAL	Homeless Engagement Alternative Liaison
HFC	hydrofluorocarbon
HI	High Intensity
HPA	Hydraulic Project Approval
I-5	Interstate 5
I-705	Interstate 705
ICE	U.S. Immigration and Customs Enforcement
IFC	International Fire Code
IRP	Integrated Resource Plan
ITS	Intelligent Transportation System
JBLM	Joint Base Lewis-McChord
JTC	Joint Transportation Committee
LED	light-emitting diode
LID	low-impact development
LNG	liquefied natural gas
LOS	level of service
MCPPs	Multi-County Planning Policies
MIC	Manufacturing/Industrial Center
MMT	million gross metric tons

Abbreviation/Acronym	Definition
MPO	Metropolitan Planning Organization
MPT	Metro Parks Tacoma
MS4	NPDES Phase I Municipal Separate Stormwater System
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSAT	mobile source air toxic
MT	metric ton
MUC	Mixed Use Center
<hr/>	
N	Natural
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEC	National Electrical Code
NESC	National Electrical Safety Code
NFPA	National Fire Prevention Association
NHPA	National Historic Preservation Act
NIBRS	National Incident-Based Reporting System
NIM	North Intermodal
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	oxides of nitrogen
NPCC	Northwest Power and Conservation Council
NPDES	National Pollutant Discharge Elimination System
NRDA	Natural Resource Damage Assessment
NRHP	National Register of Historic Places
NWDC	Northwest Detention Center
NWPCAS	Northwest Ports Clean Air Strategy
NWSA	Northwest Seaport Alliance
<hr/>	
OHWM	ordinary high water mark
ONE	Ocean Network Express
OSHA	Occupational Safety and Health Administration

Abbreviation/Acronym	Definition
PAAL	Public Access Alternatives Plan
PCC	Pierce County Code
PCT	Pierce County Terminal
PFCs	perfluorocarbons
PFS	Public Facilities and Services
PHS	Priority Habitats and Species
PM	particulate matter
PM ₁₀	particulate matter less than or equal to 10 microns in diameter
PM _{2.5}	particulate matter less than or equal to 2.5 microns in diameter
PMI	Port Maritime Industrial
ppm	parts per million
PMT	project management team
PPP	Power Projection Platform
PRP	potentially responsible party
PSCAA	Puget Sound Clean Air Agency
PSE	Puget Sound Energy
PSRC	Puget Sound Regional Council
PTC	Puyallup Tribal Code
Puyallup Tribe	Puyallup Tribe of Indians
R&D	Research and Development
RAS	Resource Adequacy Standard
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RFID	radio-frequency identification
ROG	reactive organic gas
RSLR	relative sea-level rise
SEPA	State Environmental Policy Act
SF	square feet
SF ₆	sulfur hexafluoride
SHERM	South Harbor Electrification Roadmap
SHPO	State Historic Preservation Office

Abbreviation/Acronym	Definition
SIM	South Intermodal
SIP	State Implementation Plan
SMA	Washington State Shoreline Management Act
SMP	Shoreline Master Program
SO ₂	sulfur dioxide
SOV	single occupancy vehicle
SPMCS	South Pierce Multimodal Connectivity Study
SR	State Route
SSSC	Side-Street Stop-Control
STRAHNET	Strategic Highway Network
SWMP	Stormwater Management Program
TAG	Technical Advisory Group
TAP	toxic air pollutant
TCPs	Traditional Cultural Properties
TDLE	Tacoma Dome Link Extension
TDM	Travel Demand Management
TDR	Transfer of Development Rights
TEMCO	Tacoma Export Marketing Company
TEU	twenty-foot equivalent unit
TFC	Tacoma Fire Communications Center
TFD	Tacoma Fire Department
THPO	Tribal Historic Preservation Office
TMA	Transportation Management Association
TMC	Tacoma Municipal Code
TMP	Transportation Master Plan
TOD	Transit Oriented Development
TOTE	Totem Ocean Trailer Express
TPD	Tacoma Police Department
TPU	Tacoma Public Utilities
TSMO	transportation systems management and operations
U.S.C.	United States Code

Abbreviation/Acronym	Definition
UC	Urban Conservancy
UFMP	Urban Forest Management Plan
UP	Union Pacific
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USP	Unified Sewer Plan
VMT	vehicle miles traveled
VOC	volatile organic compound
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WHR	Washington Heritage Register
WISAARD	Washington Information System for Architectural and Archaeological Records Database
WRAP	Western Resource Adequacy Program
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation
WSP	Water Supply Project
WST	West Sitcum Terminal
WTU	Wholesale Trade, Transportation, and Utilities
WUT	Washington United Terminals
WUTC	Washington Utilities and Transportation Commission

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CHAPTER 1 Introduction

This Draft Environmental Impact Statement (Draft EIS) is a disclosure document that provides a qualitative and quantitative analysis of environmental impacts associated with the Tacoma Tidelands Subarea Plan (Subarea Plan) proposal and alternatives.

Located in the heart of Commencement Bay, the Tidelands Subarea is comprised of over 5,000 acres of waterfront land and designated as the Port of Tacoma Manufacturing Industrial Center (MIC). With about 9,800 employees, the MIC is home to Tacoma and Pierce County's highest concentration of industrial and manufacturing activity.

The Tidelands Subarea is a unique environment containing shoreline, river deltas, tidal creeks, freshwater and salt marshes, naturalized creeks, and river channel corridors. Over 1,000 acres of this vital saltwater and estuarine habitat is home for several species of salmon, shellfish, and other marine life.

Development in the Tidelands Subarea consists primarily of industrial and manufacturing uses, with a major focus on port maritime industrial activities. The Tidelands Subarea also serves as an important location for cultural traditions and the practice of tribal treaty rights.

The future of the City of Tacoma is currently directed by the City's existing Comprehensive Plan (City of Tacoma 2019) and the associated subarea plans and implementing regulations. The purpose of this Draft EIS is to inform and assist the public and City of Tacoma decision-makers in considering future growth, transportation improvements, and policy/code proposals appropriate within the subarea.

This chapter provides a background of the Proposed Action for the Subarea Plan and Draft EIS processes. It describes the Proposed Action and location, project purpose, and State Environmental Policy Act (SEPA) process. This non-project EIS includes the development of

Subarea Plan alternatives, environmental analysis of those alternatives, and identification of impacts and mitigation measures.

1.1 Subarea Plan Background

1.1.1 Proponents

The proposed Subarea Plan is sponsored by the City of Tacoma, which serves as SEPA Lead Agency. The Tideflats Subarea is designated as the Port of Tacoma MIC. In recognition of the regional significance of the MIC, the City of Tacoma, Port of Tacoma, Puyallup Tribe of Indians, City of Fife, and Pierce County have partnered to develop a Subarea Plan for adoption by the City of Tacoma as part of the City's Comprehensive Plan.

As established by the partnering agencies in the Tideflats Subarea Work Plan,¹ the future Subarea Plan will present a shared long-term vision and a more coordinated approach to development, environmental review and protection, and strategic capital investments in the area (see Appendix A, *Tideflats Subarea Work Plan*).

1.1.2 Subarea Work Plan and Proposal Objectives

The Tideflats Subarea Work Plan (Work Plan) was adopted by all five participating jurisdictions on February 10, 2019. The intent of the Work Plan is to provide a clear framework for cooperation and information sharing among the City of Tacoma, the Puyallup Tribe, the Port of Tacoma, Pierce County, and the City of Fife while respecting Tacoma's jurisdiction and role as SEPA Lead Agency. The Work Plan also observes all existing substantive and procedural obligations under the Growth Management Act (GMA), Shoreline Management Act, SEPA, and the Tacoma Municipal Code.

Overarching themes of the interjurisdictional approach include economic prosperity for all, environmental remediation and protection, transportation and capital facilities plan, and public participation and outreach.

1.1.3 Objectives and Anticipated Outcomes

The Work Plan process is expected to culminate in the adoption of a Subarea Plan by the Tacoma City Council, as an element of the City's

¹ Tideflats Subarea Planning Work Plan. Approved February 2019 by the City of Tacoma, Port of Tacoma, Puyallup Tribe of Indians, City of Fife, and Pierce County.

Comprehensive Plan, as well as potential text and map amendments to other elements of the City's Comprehensive Plan and amendments to the City's Land Use Regulatory Code, zoning districts, Shoreline Master Program, and Capital Facilities Program. The following excerpts from the Work Plan describe the anticipated outcomes for the Subarea Plan:

-
1. 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.
 2. The Subarea Plan will support and consider transportation and infrastructure that promotes connectivity to other regional employment centers and will provide reasonably efficient access to the core area through transportation corridors to include freight.
 3. 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.
 4. The Plan will ensure the ability of the participating governments to compete effectively for grant funding.
 5. The Plan will support, protect, and improve health and safety of area employees and residents of surrounding communities.
 6. The Subarea Plan will be consistent with Tacoma's adopted planning policies and goals, as well as
-

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- state, regional, and federal law, policies, and regulations.
7. The Subarea Plan will retain sufficient planning flexibility to secure emerging port and manufacturing/industrial opportunities and other economic opportunities.
 8. The Subarea Plan will result in process improvements that will streamline Tideflat project permitting and environmental review and will provide predictable mitigation measures.
 9. The Subarea Plan will materially preserve the area and boundaries of the Port of Tacoma Manufacturing and Industrial Center and will support resiliency strategies to prevent loss of manufacturing/industrial lands, transportation infrastructure, and environmental resources.
 10. The Subarea Plan will promote and support opportunities for voluntary, proactive interjurisdictional plans and projects to clean up environmentally contaminated sites within the Tideflats.
 11. The Subarea Plan will define and protect the core areas of port and port related manufacturing/ industrial uses within the city. The Subarea Plan will resolve key land use conflicts along the edges of the core area, and minimize and mitigate, to the extent practicable, uses that are incompatible with industrial uses along the edge of the core area. The Subarea Plan will evaluate the use of transitions and buffers as a means of addressing compatibility with surrounding communities.
 12. The Subarea Plan will be consistent with treaty-protected rights.
-

For more detail, please refer to the Tacoma Tideflats Subarea Work Plan in Appendix A.

1.2 Proposed Action

1.2.1 Tideflats Subarea Plan

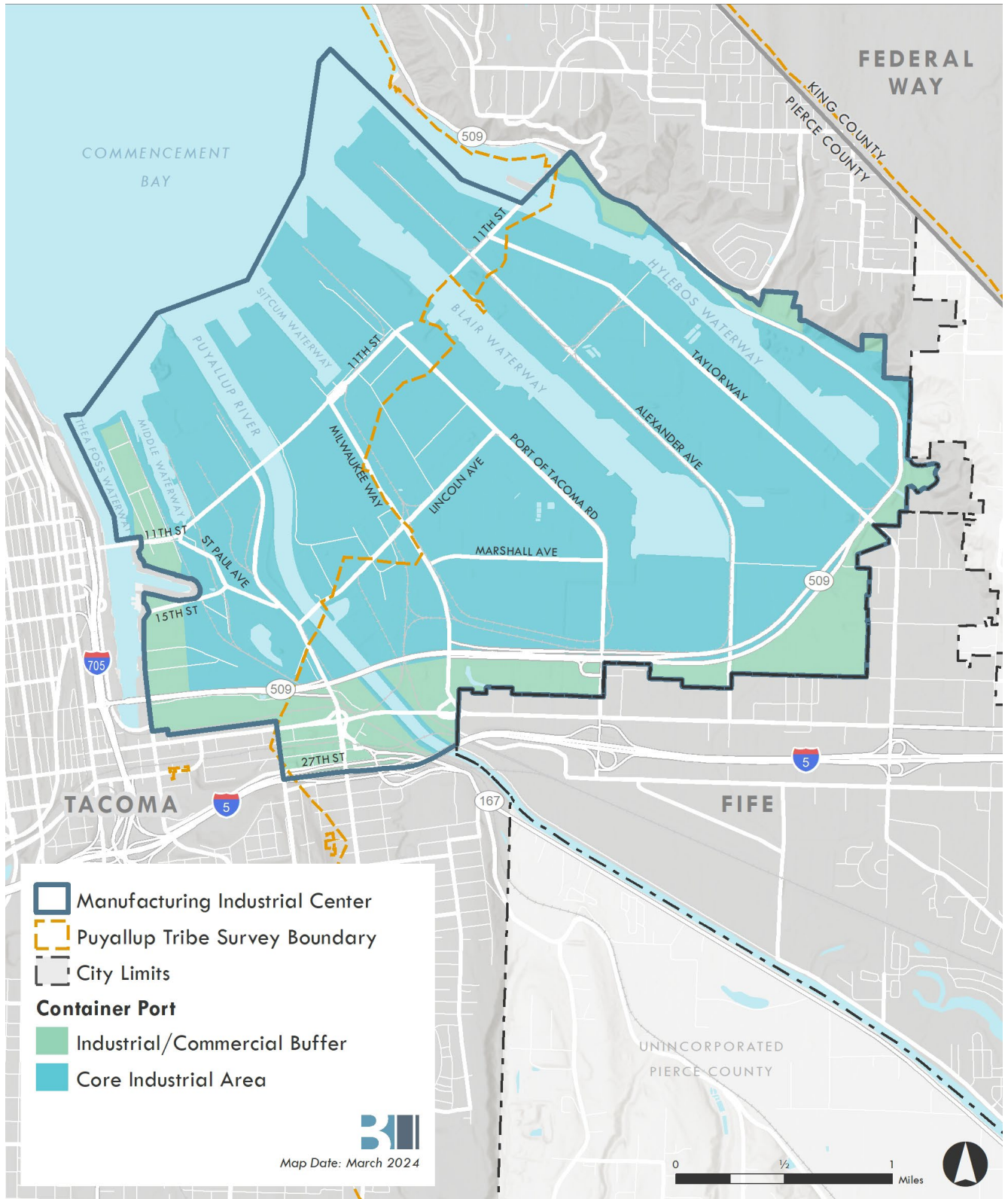
The Proposed Action involves the development of an innovative, area-wide Subarea Plan for the Tacoma Tideflats, which will become an optional element of the City’s Comprehensive Plan. The Subarea Plan is expected to include elements related to land use, economic development, the environment, public facilities and services, and transportation. The Subarea Plan is being developed for consistency with the GMA, Shoreline Management Act, multicounty planning policies, countywide planning policies, and the City of Tacoma Comprehensive Plan.

Subarea planning will meet the requirements of the Washington State GMA and support the continued designation of the study area as a regional Manufacturing/Industrial Center by the Puget Sound Regional Council (PSRC). Potential impacts of the Subarea Plan are evaluated through a Planned Action EIS, this document. Completion of the EIS will also support a streamlined environmental review process for qualifying projects.

1.2.2 Study Area for the Tideflats Subarea Plan

The study area is located within Pierce County in the City of Tacoma and the Puyallup Indian Reservation, and it borders the City of Fife. The area is largely used for industrial and port uses. The study area includes 3,963 upland parcel acres spread across 752 parcels with a diverse range of uses.

The location of the Tideflats Subarea is based on the current boundaries of the MIC, which is defined both in the PSRC’s VISION 2050 as well as the City of Tacoma Comprehensive Plan (see **Exhibit 1-1**). The difference is that the studies and recommendations from the Subarea Plan process will likely extend beyond this Subarea Plan area, including the lands immediately adjacent to the MIC and depending on the topic under review (e.g., air and water quality, traffic impacts, freight corridors, land use transitions, economic impacts and strategies, etc.).



SOURCE: City of Tacoma 2020; BERK 2024

EXHIBIT 1-1 Tacoma Tideflats Subarea

1.3 SEPA Process and Public Involvement

1.3.1 State Environmental Policy Act (SEPA) Environmental Review Process

The State Environmental Policy Act (SEPA) is in Revised Code of Washington (RCW) Chapter 43.21C and is a Washington State law that helps agency decision-makers, applicants, and the public understand how a proposal would affect the environment. The EIS process is a tool for identifying and analyzing probable adverse environmental impacts, reasonable alternatives, and potential mitigation. An EIS must inform decision-makers and the public of reasonable alternatives, as well as mitigation measures that would avoid or minimize adverse impacts or enhance environmental quality.

Preparation of an EIS is required for actions that have the potential for significant impacts. This document is a non-project EIS that analyzes the proposal and alternatives broadly across the study area in adherence with the Washington Administrative Code (WAC) 197-11-442. The City of Tacoma has determined that this Subarea Plan and Planned Action would likely have a significant adverse impact on the environment and is required under RCW Section 43.21C.030 to prepare an EIS. For preparation of this Subarea Plan, the EIS describes:

- Existing conditions in the subarea.
- Subarea Plan alternatives (e.g., new policies and growth strategies).
- Potential significant, unavoidable, and adverse impacts under each alternative.
- Mitigation measures to reduce or eliminate adverse impacts.

The EIS process involves the following steps: (1) initial research, issuing a determination of significance, and scoping the contents of the EIS with agencies, tribes, and the public; (2) preparing a Draft EIS with a comment period; (3) responding to comments and developing a Preferred Alternative; and (4) issuing the Final EIS to inform development of legislation.

As the SEPA Lead Agency for this proposal, the City of Tacoma has identified the following areas (elements of the environment) for analysis in the EIS:

- Land Use

- Population, Employment, and Housing
- Plants & Animals
- Cultural Resources
- Air Quality and Greenhouse Gas (GHG) Emissions
- Transportation
- Public Services
- Utilities

These elements are presented in Chapters 3 through 10 of the EIS, respectively, including an analysis of the affected environment, potential impacts, and mitigation measures.

1.3.2 Planned Action EIS

The City is proposing a Planned Action for the Subarea Plan. A Planned Action environmental review involves detailed SEPA review and preparation of EIS documents in conjunction with subarea plans, consistent with RCW 43.21C.031, RCW 43.21C.440, and WAC 197-11-164 through WAC 197-11-172. Completing a non-project EIS presents a cumulative impact analysis for the entire subarea, rather than piecemeal analysis of the environmental impacts and mitigation on a project-by-project basis. As a result, the environmental impacts and mitigation are comprehensively evaluated at the subarea-wide level. Such up-front analysis of impacts and mitigation measures facilitates future environmental review of subsequent individual development projects.

The City would not make a threshold determination and may not require additional environmental review for a future development proposal that is determined to be consistent with the Planned Action. This will provide certainty and predictability for both development proposals and the community, streamline the environmental review process within the subarea, and encourage the goals of SEPA and the GMA (Chapter 36.70A RCW). Community members, agencies, and tribes are encouraged to participate and provide comment during this Planned Action environmental review effort while the evaluation is under preparation since it will guide future development proposals, and future threshold determinations would be limited.

1.3.3 Public Involvement Opportunities

Visioning Process

Community engagement began during the visioning phase of the planning process for the Tideflats Subarea Plan. The visioning phase lasted from January 2021 through the final public meeting in May 2021. The purpose of this phase was to provide an opportunity to think broadly about the desired future in the Tideflats Subarea and develop preliminary future scenarios for further consideration and analysis. Engagement was designed to hear from a broad group of community members who reflect the many interests and perspectives about the history, current uses, and future of the Tideflats.

Engagement was promoted via communication materials and outreach methods designed to build awareness about the project and advertise opportunities to engage. These methods included a branded project identity, emails to the project listserv, an active project website, social media posts, press releases, a promotional video, and a FAQ sheet. The five participating governments actively participated in engagement and promotion of communications.

With the onset of the COVID-19 pandemic shortly after launching the outreach and engagement efforts, it was necessary to rethink the approach and pivot to virtual interaction rather than the in-person engagement opportunities originally envisioned. The revised outreach approach included virtual public meetings, focus groups, expert panel discussions, an online survey, small group briefings, social media, and participation by the Tideflats Advisory Group (TAG).

As was defined in the project Work Plan, the TAG was formed to “provide input and feedback as a sounding board for the Subarea Planning Process and the City during their respective parts of the project” and to “serve as liaisons to the broader stakeholder groups they represent.” The first meeting of the TAG occurred in February 2020 as an in-person working session that offered both insights toward the vision and guidance on the Public Engagement Plan. The subsequent four meetings were held virtually and continued to contribute to the visioning process. The collective feedback that resulted from all engagement provided guidance for developing the vision.

EIS Process

The EIS process consists of three phases: EIS scoping, Draft EIS, and Final EIS. Each phase is briefly described below:

- **EIS Scoping** – This is the first crucial step in the EIS process and is the opportunity for the public and agencies to provide input to shape the process of developing the alternatives and the range of environmental issues to be evaluated in the EIS. The purpose of scoping is to narrow the focus of the EIS and address those environmental parameters that could be significantly affected as a result of the alternatives.
- **Pre-Scoping Notification** – Although not a requirement of SEPA, the City engaged in a robust public notification outreach effort prior to the official start of scoping. The following public notices were provided to encourage participation in the pre-scoping meetings:
 - Updates to the project website.
 - Notice to the Planning Commission e-mail distribution lists.
 - Mailed public scoping notice to 9,500 taxpayers and occupants within 2,500 feet of the Port of Tacoma MIC.
 - E-mail notice provided to approximately 400 interested parties.
 - Information on how to participate in the Community Information Meeting was shared at the Planning Commission and the Tideflats Advisory Committee.
- **SEPA Threshold Determination and Scoping Comment Period** – A SEPA Determination of Significance and Notice of Scoping was issued by the City on June 21, 2022 (see Appendix B, *Determination of Significance and Notice of Scoping*). The EIS scoping process for this proposal occurred June 21 through August 5, 2022. A virtual EIS scoping meeting was held on July 13, 2022, to provide an opportunity for agencies, organizations, and the public to present comments in addition to submittal of written comments. Forty-three attendees joined the virtual public scoping meeting and 15 provided verbal scoping comments. A combined total of 103 verbal and written comments were received during scoping (see Appendix C, *Scoping Summary Report*). Of this number:
 - Fifteen verbal comments were provided at the scoping meeting.
 - Comments were provided at the June 23, 2022, TAG meeting and are counted as one comment from an organization, although themes from individual commenters at the meeting are included within the topic in the summary.
 - Eighty-seven unique comments were submitted via writing, including through the online comment portal, email, and mail.

Scoping comments were received on topics including air, environmental health, earth, land use, plants and animals, public services, water, energy, population, employment & housing, transportation, cultural resources, public health, economic development, climate change and resilience, and environmental justice. At the conclusion of the scoping process, the City confirmed the scope of the EIS.

- **Draft EIS** – The Draft EIS (this document) describes the affected environment and analyzes potential impacts from each alternative. Potential mitigation measures are also proposed.
- **Final EIS** – A Final EIS will include responses to public comments received during the 45-day comment period that follows issuance of this Draft EIS. The Final EIS will also evaluate the Preferred Alternative. Information in the Final EIS will inform the Subarea Plan that will be developed to serve as the basis for amendments to the City’s Comprehensive Plan, Land Use Code, and Zoning Map for City Council consideration.

1.3.4 Public Comment

The City of Tacoma as Lead Agency determined that this non-project proposal is likely to have a significant adverse impact on the environment. Preparation of an EIS is required under RCW 43.21C.030 (2)(c). Opportunities to comment on the Draft EIS are provided in more detail below.

Written Comments		Verbal Comments
This Draft EIS will be available for a 46-day public comment period.	Public Meeting Date and Time	A public meeting will be held on Thursday, April 25, 2024, at 6 p.m. to receive verbal comments on the Draft EIS from the public and interested parties. A court reporter will be present to receive verbal testimony.
Comments must be received or postmarked by May 23, 2024.	Written Comment Submittal and Contact Information	Comments may be submitted online at: www.cityoftacoma.org/tideflatsplan By mail to: Stephen Atkinson, Principal Planner City of Tacoma, Planning and Development Services 747 Market Street, 3 rd Floor Permit Counter Tacoma, WA 98402

1.3.5 Summary of Description of Alternatives

Alternatives are different ways of achieving a proposal’s purpose and need and serve as the basis for environmental analysis relative to elements of the environment. The alternatives under consideration for

the Tacoma Tideflats Subarea Plan are described in greater detail in Chapter 2 of this Draft EIS.

Environmental analysis is the process of studying each alternative and forecasting impacts on different elements of the environment, such as land use, air quality, noise, transportation, and others.

Environmental impact statements must include an alternative that represents “no action” and one or more alternatives that include changes to land use or policies, called the “action alternatives” (referred to as development alternatives in this EIS). Development alternatives allow the City to understand the impacts of a range of growth scenarios and test ideas, implications, benefits, and impacts and compare them to the impacts of the No Action Alternative.

The City may consider additional analyses including the Baseline Report (BERK et al. 2023) for the Tideflats Subarea prior to selection of the alternatives analyzed in this EIS.

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 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 alternatives are described in detail in Chapter 2, *Alternatives*.

1.3.6 Summary of Impacts and Mitigation Measures

Table 1-1 summarizes the impacts that would potentially result from the alternatives analyzed in this Draft EIS. This summary table is not intended to be a substitute for the complete analysis of each element that is presented in Chapters 3 through 10.

TABLE 1-1 Summary of Impacts and Mitigation Measures

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
LAND AND SHORELINE USE				
Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
None.	<p>Consistency with Plans and Policies: Although the No Action Alternative does not involve changes to plans and policies, some inconsistencies with existing plans and policies would remain and are expected to increase due to the evolving land use trends over the next 20-year period. The existing zoning of the study area could be made more consistent with the Container Port Element's (CPE's) identification of Core Areas and Industrial/Commercial Buffer areas.</p> <p>Considering PSRC's current minimum eligibility criteria for designation as a new Industrial Growth Center MIC or an Industrial Employment Center MIC, the Port of Tacoma MIC today would not meet all of the eligibility criteria for an Industrial Growth Center MIC.</p> <p>It would be less consistent with Countywide Planning Policies to prohibit housing in the MIC.</p> <p>Alternative 1 would not adjust the development standards to balance industrial viability with livability or compatibility with adjacent areas in Fife consistent with current Buffer Area policies, and M2 would continue to be included in the Buffer Area in proximity to Fife's City Center.</p> <p>Alternative 1 is less consistent with the Puyallup Tribe of Indians Comprehensive Land Use Plan, which post-dates the MIC. The Tribe's plan promotes more habitat restoration, addressing employment growth as well as sea level rise.</p> <p>Due to partial consistency with criteria, Alternative 1 has a significant impact on consistency with plans and policies.</p> <p>Land Use Compatibility: Alternative 1 allows limited new housing in the M-1 zone. As described in Chapter 7, <i>Air Quality and Greenhouse Gas Emissions</i>, adding housing would result in additional air quality exposure-driven impacts to an area considered vulnerable. Thus, there would be significant land use compatibility impacts regarding adding housing into the study area.</p> <p>Land Use Transitions: Abrupt transitions occur when non-industrial adjacencies are impacted by neighboring high-intensity/high-impact industrial activities that result in excessive noise, air pollution, noxious odors, or impacts resulting from heavy industrial uses in the PMI and M2 zones where they abut nonindustrial areas.</p>	<p>Consistency with Plans and Policies: Under Alternative 2, land use conditions in the MIC would not meet PSRC's regional criteria for designation as an Employment Growth Center MIC regarding 2044 employment levels. This is considered a significant land use impact but can be mitigated by designation as a different type of MIC, or by incorporating some Industrial Transit Oriented Development (TOD) into the MIC, which could assume greater job densities.</p> <p>Land Use Compatibility: Alternative 2 would increase the level of activity in the study area by increasing jobs by 46%. Alternative 2 would reduce the potential for incompatible uses by reducing housing opportunities in the subarea over current zoning.</p> <p>Land Use Transitions: See <i>Alternative 1 (No Action)</i>.</p>	<p>Consistency with Plans and Policies: Impacts from Alternative 3 are similar to those described for Alternative 2 with some exceptions. Housing could conflict with Multicounty Planning Policies in VISION 2050, which discourage the establishment of new housing within MICs (e.g., MPP-EC-22 and MPP-DP-50). Similar policy directives are echoed in the Comprehensive Plan, such as the CPE (e.g., CP-2.5). However, Alternative 3 limits the uses to live/work.</p> <p>Alternative 3 would have a significant land use adverse impact because of an inconsistency with Countywide Planning Policies regarding the use of housing (even live/work units), whereas it is consistent with PSRC criteria.</p> <p>Overall, the impacts on consistency with plans and policies resulting from this alternative are likely to result in moderate impacts, including Future Land Use Map redesignations and related rezoning to align with the objectives for the Industrial Commercial Areas, adjustments to development and performance standards, and the introduction of housing.</p> <p>Land Use Compatibility: Alternative 3 land use changes are expected to result in a significant unavoidable adverse impact regarding air quality due to non-industrial uses proximate to heavy industrial activities inside the study area.</p> <p>Land Use Transitions: In terms of land use changes on air quality, Alternative 3 is expected to result in a significant unavoidable adverse impact regarding air quality due to non-industrial uses proximate to heavy industrial activities outside the study area.</p>	<p>Consistency with Plans and Policies: Similar to <i>Alternative 1 (No Action)</i>.</p> <p>Land Use Compatibility: Similar to <i>Alternative 1 (No Action)</i>.</p> <p>Land Use Transitions: Similar to <i>Alternative 1 (No Action)</i>, except that more smaller habitat restoration sites would be implemented as development occurs.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
<p>Existing Regulations and Commitments:</p> <ul style="list-style-type: none"> Shoreline Master Program (SMP). Application of the City’s Noise Ordinance (TMC Chapter 8.122). Application of Puget Sound Clean Air Agency Air Operating Permit Conditions. <p>Plans and Policy Consistency: Areas of policy inconsistency can be avoided through corresponding plan amendments to the One Tacoma Comprehensive Plan and the Countywide Planning Policies, or through changes to the MIC boundaries or Core/Transition Areas.</p> <p>Plan and Policy Consistency – Fife: Alternatives 1 and 4 could incorporate Alternatives 2 and 3 transition concepts. Other strategies could include landscaping and buffer standards as well as tree canopy to address aesthetic impacts. The City could also limit the range of uses within the Buffer zones to avoid land use compatibility impacts on the Fife Town Center.</p> <p>Plan and Policy Consistency – Puyallup Tribe of Indians: The lack of a Future Land Use Map in the Puyallup Tribe of Indians Comprehensive Land Use Plan means determining compatibility with Alternatives 1 and 4 is challenging. Mitigation measures that could benefit all of the development alternatives include:</p> <ul style="list-style-type: none"> Encourage the Puyallup Tribe of Indians to work in collaboration with the City of Tacoma to develop a Future Land Use Map and strategy for ensuring land use compatibility. The shift from Heavy to Light Industry in Alternatives 2 and 3 may alleviate some of the potential incompatibilities. Alternatively, the City could refine the uses that are allowed in M2 zones to limit high-impact uses or consider a discretionary permit for review. The City could define a buffer dimension from Tribal properties to establish a heightened review and permit process (e.g., 1,000 feet). Maintain consultation, a legal requirement from the land claims settlement, to solicit input from the Tribe on permits within the reservation. The Planned Action can specify a notice and permit review procedure to facilitate project-level consultation and allow discretion to condition a project to meet Subarea Plan policies and Planned Action mitigation measures and ensure 	<p>Plans and Policy Consistency: See <i>Mitigation Common to All Alternatives</i>.</p> <p>The City could accept a lower level of employment density and achieve center criteria as an Industrial Growth Center MIC under VISION 2050. The City could further limit housing in the M1 zone to be more consistent with Countywide Planning Policies.</p> <p>Land Use Compatibility and Transitions: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Plans and Policy Consistency: See <i>Mitigation Common to All Alternatives</i>.</p> <p>The City could increase job density in some Transition Areas in Buffer Areas similar to Alternative 3 to achieve the desired employment density to meet the criteria for an Industrial Employment Center MIC.</p> <p>Application of building and site design standards to promote compatibility could be included in new zoning standards (e.g., pedestrian-level design of small-scale manufacturing, office, retail; light and glare reduction of multistory TOD at station).</p> <p>Land Use Compatibility and Transitions: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Plans and Policy Consistency: See <i>Mitigation Common to All Alternatives</i>.</p> <p>The City could limit the geography of allowed housing and focus on industry-supportive housing (e.g., industrial live/work and caretaker units), provided it fits the Countywide Planning Policy prohibition of housing.</p> <p>Application of building and site design standards to promote compatibility could be included in new zoning standards (e.g., pedestrian-level design of small-scale manufacturing, office, retail; light and glare reduction of multistory TOD at station).</p> <p>Land Use Compatibility and Transitions: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Plans and Policy Consistency: See <i>Mitigation Common to All Alternatives</i>.</p> <p>See <i>Alternative 1 (No Action)</i>.</p> <p>Land Use Compatibility and Transitions: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>treaty rights are respected based on input from the Tribe as part of the Planned Action formal process.</p> <p>Land Use Compatibility and Transitions: The City could limit significant housing development in adjacent mixed-use zones (e.g., Tacoma Dome area) to reduce potential impacts related to inadequate transitions from industrial to nonindustrial areas. The City could develop light and glare standards for larger or taller developments in line of sight with adjacent uses. These standards should address placement, light output, direction, and shielding of any exterior illumination above a given height to reduce light and glare emissions to adjacent non-industrial areas.</p> <p>Sea Level Rise: All alternatives should incorporate sea level rise mitigation over the 20-year life of the Subarea Plan. In addition, measures to ensure that development is forward-looking and incorporates measures anticipating future sea level rise impacts beyond the 20-year period could be considered.</p>				

POPULATION, EMPLOYMENT, AND HOUSING				
Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
With the application of existing or future policies and codes, none of the alternatives would create more than a moderate impact on population, housing, and employment uses.	None.	See <i>Alternative 1 (No Action)</i> .	See <i>Alternative 1 (No Action)</i> .	See <i>Alternative 1 (No Action)</i> .
Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
<p>Mitigation measures that could be applied to all alternatives include:</p> <p>Employment Growth and Mix:</p> <ul style="list-style-type: none"> Update economic development strategies to focus on industrial uses with higher employment densities for recruitment and retention. Implement the Green Economic Development Strategy to take advantage of the competitive advantages of the Tideflats, with particular focus on the priority industrial sectors identified in that strategy and uses that require a shoreline location. This strategy is designed to enable Tacoma to seize new market opportunities created by public and private sector efforts to decarbonize the economy. The goal is to put Tacoma's economy on a new trajectory – not just creating good jobs in the near term, but more fundamentally shifting the composition and orientation of the economy so that it can continually create more and better jobs over time. 	<p>Employment Growth and Mix: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Growth trends studied under Alternative 1 are not projected to produce local employment growth that meets the proposed employment targets. The City could apply one or more features of Alternative 2 or 3 to increase expected employment density.</p> <p>Employment Trends and PSRC Centers Criteria: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Employment Displacement: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Housing Growth and Displacement: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Employment Growth and Mix: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Alternative 2 has capacity to meet PSRC MIC job density requirements for Industrial Employment Centers. Market-based trends explored with Alternative 2 assume jobs at less than an Industrial Employment Center but above the Industrial Growth Center. The City could apply one or more features of Alternative 3 to increase employment density.</p> <p>Employment Trends and PSRC Centers Criteria: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Employment Displacement: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Housing Growth and Displacement: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Employment Growth and Mix: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Employment Trends and PSRC Centers Criteria: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Employment Displacement: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Housing Growth and Displacement: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Employment Growth and Mix: See <i>Mitigation Common to All Alternatives</i>.</p> <p>See <i>Alternative 1 (No Action)</i>.</p> <p>Employment Trends and PSRC Centers Criteria: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Employment Displacement: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Housing Growth and Displacement: See <i>Mitigation Common to All Alternatives</i>.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<ul style="list-style-type: none"> Update development standards to ensure that new logistics and distribution centers can be converted into high job-producing uses in the future and consider incentives to encourage conversion to higher job-producing uses. Additional approaches could include limits on the size of new distribution facilities or limiting the area in which these facilities would be permitted, to retain more land supply for other preferred uses. Given the state priority to protect and expand container shipping and international trade, ensure that there is a sufficient land supply in the core area for future container shipping needs and prioritize job creation within the Transition Areas. <p>Employment Trends and PSRC Centers Criteria: The MIC is designated as an Industrial Growth Center and can meet that level of jobs under all alternatives. However, all alternatives have capacity to meet the higher planning target associated with PSRC’s Industrial Employment Centers. Different forecasts were evaluated under each alternative, some of which assumed more or less growth toward the planned capacity. To bend forecast trends to the higher employment goal, the following options could be considered:</p> <ul style="list-style-type: none"> Recommend PSRC develop a new MIC center type that better reflects needs of container ports under that element of GMA (Seattle/Tacoma). Provide capacity toward the full PSRC planning requirement, but set a local employment forecast that is less than the PSRC planning requirement (10,000 jobs) to reflect what is likely to occur during the plan horizon. <p>Employment Displacement:</p> <ul style="list-style-type: none"> Avoid industrial displacement from non-industrial uses. Where allowed, ensure that commercial or retail uses are subject to maximum size of use limits (e.g., City of Tacoma Municipal Code 13.06.060.E.4. Commercial Uses in South Tacoma M/IC). Ensure ongoing and new industrial uses. Require a percentage of new buildings to be devoted to industrial use in districts allowing limited residential or non-industrial purposes (e.g., TMC 13.06.060.E.4 Residential Uses). Limit the geography of industry-supportive housing allowed near transit or live/work units. Monitor the number and location in relation to industrial uses to ensure proper transitions and avoid undue encroachment on industrial uses. 				

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<ul style="list-style-type: none"> Set a minimum job density for new employment and transfers of development rights to achieve a specific percentage of industrial uses in buildings. Consider amortizing the cost of constructing new industrial space. Encourage lower industrial rents necessary for emerging manufacturers. Develop programs to provide relocation assistance for industrial/commercial uses displaced by public projects in the Tideflats, including Port container shipping expansion, restoration projects, or sea level rise adaptation measures. Assistance could include site suitability analysis for relocation and financial assistance for relocation costs and tenant improvements. Prioritize relocation within the Tideflats and within the City of Tacoma prior to mitigate employment loss to minimize loss of employment. Recognize that the Port has a multiplier effect that does mitigate impacts of local displacement, or lack of job growth. <p>Housing Growth and Displacement:</p> <ul style="list-style-type: none"> Housing Displacement. Implement anti-displacement strategies identified in Tacoma's Affordable Housing Action Strategy (AHAS) (City of Tacoma 2018). Rental Business License. The business license and certification that the owner meets housing standards helps ensure that all rental housing in Tacoma is safe and meets basic housing maintenance requirements. 				

PLANTS + ANIMALS

Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
None.	None.	See <i>Alternative 1 (No Action)</i> .	See <i>Alternative 1 (No Action)</i> .	See <i>Alternative 1 (No Action)</i> .
Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
<p>All alternatives are subject to the existing regulatory permitting framework to protect plants and animals. Best management practices (BMPs) and regulatory requirements at the local, state, and federal levels would protect water quality, fish and wildlife species, and habitat connectivity.</p> <p>Other potential mitigation measures could be implemented to specifically address habitat restoration sites in the area that would benefit plants and animals. The potential mitigation measures are listed below.</p> <p>Policy and Regulation Updates: To avoid significant adverse impacts, best available science (BAS) should be reviewed to inform updates to the Shoreline Master Program and Critical Areas code. Existing marine buffer</p>	<p>Policy and Regulation Updates: See <i>Mitigation Common to All Alternatives</i>.</p> <p>In contrast to the development alternatives, the No Action Alternative would incorporate mitigation on a project-by-project basis in compliance with the existing regulatory requirements.</p> <p>Habitat Restoration Approaches: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Alternative 1 assumes that mitigation for habitat restoration, if required, would be implemented permit by permit. Mitigation would therefore be uncoordinated and need to be developed specific to project impacts.</p>	<p>Policy and Regulation Updates: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Habitat Restoration Approaches: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Alternative 2 proposes a coordinated approach to mitigation and restoration site implementation as compared to Alternative 1. This approach could include identifying sites for mitigation or working with property owners to enhance or preserve existing open space to serve as possible mitigation locations.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Policy and Regulation Updates: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Habitat Restoration Approaches: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Alternative 3 envisions the most mitigation and restoration area among the alternatives by establishing a coordinated mitigation and restoration strategy and site prioritization, a greater focus on connectivity among restoration areas, mitigation in advance of permitted activity, mitigation and restoration actions coordinated with sea level rise adaptation, as well as pro-active investments in restoration. Similar to Alternative 2, the approach under Alternative 3 could include (prior to permitting) identifying sites for mitigation or working with property owners to enhance or</p>	<p>Policy and Regulation Updates: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Habitat Restoration Approaches: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Alternative 4 assumes expansion of the Blair Waterway as well as smaller habitat restoration sites (as compared to Alternatives 2 and 3) as new development occurs. Mitigation and restoration actions are still assumed to be coordinated.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>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.</p> <p>Goals, policies, and regulations in Tacoma’s Shoreline Master Program are intended to achieve no-net-loss of shoreline ecological function. The City’s Shoreline Master Program Restoration Plan is a voluntary plan identifying opportunities to lift shoreline functions to have a net gain, as well as serve as a source of mitigation opportunities. The City has sought \$1M funding for a Commencement Bay assessment. Through that effort, the City could use the information to update the Shoreline Master Program Restoration Plan.</p> <p>Habitat Restoration Approaches: Mitigation measures could be implemented to specifically address habitat restoration sites in the area that would benefit plants and animals. Such restoration activities could also support the protection of tribal treaty rights for fishing, hunting, and gathering.</p> <p>Specific mitigation measures for habitat restoration vary by alternative. The development alternatives all assume that a programmatic approach to both mitigation and restoration would be developed for the study area. A programmatic approach to mitigation would build off of the existing regulatory framework in the study area, including relevant Comprehensive Plan policies, Salmon Recovery Plans for the watershed, and relevant local codes, policies, and land development considerations.</p> <p>Process-based restoration is neither contemplated nor proposed within the subarea. A programmatic approach to mitigation would consider the habitats and species utilizing the study area, and target opportunities to structurally enhance specific sites and corridors for the benefit of all or portions of species life-history stages. This could take the form of a master habitat restoration plan that includes following tribal treaty rights by protecting endangered species and ensuring tribal access to fisheries, soft shoreline armoring (soft armoring involves the creation or restoration of a natural shoreline system using nature-based shoreline management techniques), improving water quality standards for creeks, or revisiting buffer standards in relation to coastal flooding in the municipal code.</p> <p>Sea Level Rise: The Climate Vulnerability Assessment for the Tideflats Subarea (see Appendix G) provides information on impacts from potential sea level rise. The sea</p>	<p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>		<p>preserve existing open space to serve as possible mitigation locations.</p> <p>Sea Level Rise: See <i>Mitigation Common to All Alternatives</i>.</p>	

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>level rise evaluation of the area in 2020 identified a medium risk to wetlands with a gradual loss of habitat. In addition, a programmatic approach to mitigation should consider sea level rise, and plan to enhance habitats at a range of topographic elevations so as to allow for habitat adaptation and resiliency to sea level rise. A proactive habitat restoration plan could address opportunities and priorities for restoration to protect and seek gain in ecological function.</p>				

CULTURAL RESOURCES				
Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
<p>Potential impacts on cultural resources could occur due to the increased development and continued use that is expected to happen under any of the alternatives. The study area is an active industrial area owned by a variety of private and public entities that will continue to operate and adapt their operations based on future conditions. As this occurs, cultural resources could be impacted either by the demolition of the buildings or structures within the study area, the ground disturbance associated with these activities and ongoing operations and maintenance of existing facilities, or the change in character of the study area. This type of change has the potential to impact potential historic districts as a change could involve the demolition of contributing buildings or structures to a potential historic district or if development occurs that is inconsistent with the potential historic district. Currently there are no designated historic districts specifically within the study area according to the Tacoma Historic Preservation Plan. Even if these projects undergo a cultural resource review on a project-by-project or permit-by-permit basis, cultural resources in the study area, in particular potential future historic districts, could be impacted due to the limited consideration of each project or permit of the cumulative impacts on surrounding cultural resources.</p>	<p>Potential impacts on cultural resources under the No Action Alternative are not expected to change from current conditions and would continue to be addressed on a project-by-project or permit-by-permit basis.</p>	<p>Potential impacts that could occur would be addressed on a project-by-project or permit-by-permit basis. Three policies in Alternative 2 that could indirectly impact cultural resources are listed below.</p> <p>Land Area in Industrial Zoning Classification: A transition from industrial zoned lands to conservation would change the use and character of the area. This type of change has the potential to impact potential historic districts as a change could involve the demolition of contributing buildings or structures to a historic district or if development occurs that is inconsistent with the potential historic district. Currently, there are no designated historic districts specifically within the study area.</p> <p>Fish and Wildlife Habitat Restoration: The policy to establish new restoration within the study area has the potential to impact known and unknown archaeological resources because of the associated ground disturbance and potential increased public access.</p> <p>Shoreline Access and Restoration: The policy to establish new restoration within the study area also could indirectly impact unrecorded cultural resources. The restoration work could occur near existing archaeological resources, and the associated ground disturbance could inadvertently discover and damage or destroy an archaeological resource. Additional impacts from policies that promote restoration could include vandalism or looting of archaeological or other types of cultural resources due to the increased public access that could occur as part of the restoration work. Potential impacts from increased public access are more likely to occur in association with restoration work that is undertaken above the historic shoreline as precontact-era archaeological resources are more likely to be present above the historic shoreline.</p>	<p>Potential impacts that could occur would be addressed on a project-by-project or permit-by-permit basis. Six policies in Alternative 3 that could indirectly impact cultural resources are listed below.</p> <p>Industrial Use Concentration: Potential impacts on cultural resources could occur when the character of the area changes. Each project could impact cultural resources by slightly changing the setting of the area.</p> <p>Land Area in Industrial Zoning Classification: Potential impacts on cultural resources from the characteristic under Alternative 3 are similar to those under Alternative 2 but at a larger scale.</p> <p>Housing: These policies could change the character of the industrial area to a more residential area; changing the character of an area has the potential to impact unrecorded historic districts.</p> <p>Fish and Wildlife Habitat Restoration: The potential indirect impacts on cultural resources under these policies are similar to the impacts discussed for the Land Area in Industrial Zoning Classification under Alternative 3.</p> <p>Shoreline Access and Recreation: The potential indirect impacts on cultural resources would be similar to the impacts discussed for this characteristic under Alternative 2. However, the impact would likely be greater under Alternative 3 because the complete system buildout of the existing shoreline could overlap more with the historic shoreline of Commencement Bay. The area near the historic shoreline has greater potential to contain precontact-era archaeological resources and is near spuyaləpabš place names. This is particularly the case for the shoreline restoration that could occur in the NE Tacoma Transition Area.</p> <p>Sea Level Rise Adaptation Measures: Potential indirect impacts on cultural resources under this characteristic could occur from a policy of managed retreat from sea level rise.</p>	<p>Potential impacts that could occur would be addressed on a project-by-project or permit-by-permit basis. Two policies in Alternative 4 that could indirectly impact cultural resources are listed below.</p> <p>Housing: The policy would be to encourage additional housing near high-capacity transit. This would lead to similar impacts as discussed under this characteristic for Alternative 3.</p> <p>Shoreline Access and Recreation: Under Alternative 4, there would be greater coordination and enhancement of shoreline access and passive recreation. The impacts on cultural resources would be similar to those discussed for this characteristic under Alternative 2.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
			All types of cultural resources, both recorded and unrecorded, within the study area could be damaged or destroyed due to sea level rise. The depositional context, integrity of artifacts and features, and access to precontact-era archaeological resources could be impacted by increased flooding and erosion. Historic resources could be damaged or destroyed by flooding events.	

Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
<p>The policies under each alternative would avoid and minimize indirect impacts on cultural resources through cultural resources management review on a project-by-project or permit-by-permit basis.</p> <p>For archaeological resources, a thorough review under the existing regulatory framework would likely avoid, minimize, or mitigate impacts on these resources within the study area.</p> <p>For historic resources, in particular historic districts, impacts that occur under the alternatives could be avoided or mitigated through continued historic property inventory surveys, eligibility assessments, and completion of inventory forms.</p> <p>Other Potential Mitigation Measures: While the current regulatory framework offers review authority and will continue to do so, the City can incorporate additional policies in the Subarea Plan or review procedures in the Planned Action Ordinance to bolster cultural resources protection. Another potential mitigation measure would be to establish a Cultural Resources Comprehensive Management Plan.</p>	See <i>Mitigation Common to All Alternatives</i> .	See <i>Mitigation Common to All Alternatives</i> .	See <i>Mitigation Common to All Alternatives</i> .	See <i>Mitigation Common to All Alternatives</i> .

AIR QUALITY AND GREENHOUSE GASES (GHG)

Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
None.	Alternative 1 is expected to result in a significant unavoidable adverse impact for air quality/GHG due to non-industrial uses proximate to heavy industrial activities and due to conflict with the Puget Sound Clean Air Agency (PSCAA) Strategic Plan target to improve air quality in overburdened communities.	See <i>Alternative 1 (No Action)</i> .	See <i>Alternative 1 (No Action)</i> .	See <i>Alternative 1 (No Action)</i> .

Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
Regardless of alternative, specific-projects would undergo their own environmental reviews that include the quantitative specificity to assess the air quality and GHG impacts. A variety of mitigations may be beneficial, including the use of vegetation/tree buffer zones to limit traffic exposures or more stringent filtration requirements than required by law (e.g., Minimum Efficiency Rating Value	See <i>Mitigation Common to all Alternatives</i> .	See <i>Mitigation Common to all Alternatives</i> .	See <i>Mitigation Common to all Alternatives</i> .	See <i>Mitigation Common to All Alternatives</i> .

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>of 13) to ensure any new residential structures have well-filtered air.</p> <p>For all the alternatives, any steps toward alignment with the Strategic Plan goals of PSCAA or the One Tacoma plan’s environmental goals would be related to reduced air quality impacts. In particular, improving the ambient air concentrations beyond existing conditions for those living, working, and recreating in the subarea – an environmental justice concern – would be greatly beneficial. Measures such as requiring health risk analyses for new projects (including housing units) or requirements to use mechanical ventilation systems in any proposed housing would allow for added confidence in the alternatives.</p> <p>The Comprehensive Plan or Subarea Plan could incorporate policies or strategies addressing air quality concerns for communities abutting or affected by industrial activities. The Planned Action Ordinance could include some strategies as part of a planned action checklist for consistency.</p> <p>Other Potential Mitigation Measures:</p> <p><i>Community Information and Action:</i> Implement community-based air quality monitoring (CBAQM). Lower-cost air quality sensors could be installed to identify micro-climates and exposures. It could inform equitable policies, investments, or actions. The City of Tacoma is pilot testing sensors at 10 schools to supplement other air pollution data collected for state-based rules. Two of the 10 schools are near the study area to the west and south (Georgetown Climate Center, June 2023; City of Tacoma, 2024).</p> <p>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. Examples include the Duwamish Valley Action Plan (2018) and West Oakland Community Action Plan (2019).</p> <p><i>Green and Clean Industries:</i> Incentivize industries focused on clean technologies/processes. Consider strategies in Tacoma’s Green Economic Development Strategy (RM Donahue Consulting et al, 2023).</p> <p>Require new projects that are 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.</p>				

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>Incentives for electrification of combustion activities, use of transportation routes away from residential regions, and installation of EV infrastructure.</p> <p>Provide environmental complaint contact information along the fenceline (e.g., QR codes to connect to PSCAA complaint site or City of Tacoma complaint site).</p> <p><i>Zero-Emissions Technology:</i> Support zero-emissions technology innovation in the marine, trucking and rail sector (Tacoma Climate Action Plan, Strategy 22).</p> <p><i>Fund Clean Trucks:</i> Offer more incentives to replace diesel trucks with cleaner engines or zero-emission engines.</p> <p><i>Reduce Road Dust:</i> Increase street sweeping along roads and highways to decrease exposure to road dust.</p> <p>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).</p> <p><i>Urban Greening to Filter Pollution:</i> Equitable funding strategies to advance Tacoma’s Urban Forest Management Plan in overburdened communities.</p>				

TRANSPORTATION				
Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
<p>Active Transportation: Pedestrian and bicycle activity is expected to continue to increase compared to existing conditions, both due to overall growth in the study area as well as an increasing share of people walking and biking to new transit connections planned for the study area.</p> <p>The City has identified several corridors within the study area where facilities are needed to improve safety and comfort for people bicycling or rolling. The development alternatives are not expected to preclude any planned pedestrian and bicycle improvements and would likely result in improved infrastructure because they would be subject to development standards for pedestrian and cyclist-oriented frontage improvements.</p> <p>Parking: The overall supply of on-street parking is unlikely to increase under any of the alternatives. Industrial areas may be more likely to see changes in parking supply as redevelopment triggers frontage improvements, such as adding curbs and delineating parking spaces in rights-of-way that were previously used for informal parking.</p> <p>Safety: All the alternatives will increase traffic volume in the study area compared to existing conditions. As more</p>	<p>Active Transportation: Under Alternative 1, there would be more demand in areas that lack sidewalks or continuous sidewalks, curb ramps, pedestrian crossing opportunities, and dedicated bicycle facilities, particularly in industrial areas.</p> <p>Parking: While there is enough parking supply to accommodate existing demand, a parking impact is expected under Alternative 1 (No Action) as any growth in the area will likely cause demand to exceed supply and result in the need to explore options to support truck parking through a more centralized approach.</p> <p>Safety: See <i>Impacts Common to All Alternatives</i>.</p> <p>Rail: See <i>Impacts Common to All Alternatives</i>.</p> <p>Auto/Freight & Transit: As growth occurs in the study area, operations will be degraded to below the City’s identified standard for this EIS (Level of Service [LOS] D) at most study intersections on key corridors, including Puyallup Avenue and Portland Avenue E.</p>	<p>Active Transportation: See <i>Impacts Common to All Alternatives</i>.</p> <p>Parking: See <i>Impacts Common to All Alternatives</i>.</p> <p>Because Alternatives 2 and 3 are expected to increase demand in localized areas, potentially for a sustained period and by a substantive amount compared to Alternative 1 (No Action), significant adverse parking impacts are expected under these alternatives.</p> <p>Safety: See <i>Impacts Common to All Alternatives</i>.</p> <p>Alternatives 2 and 3 could also increase pedestrian crossings of the area’s many at-grade railroad crossings, including potential for pedestrian and vehicle conflicts with trains. Due to the potential increase in the rate of collisions for trucks and trains with vulnerable users, a significant adverse impact is expected under Alternatives 2 and 3.</p> <p>Rail: See <i>Impacts Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: Under Alternative 2, traffic volume in the study area is expected to increase by 2% compared to the No Action Alternative during both peak hours. Under Alternative 2, the increase in traffic volume</p>	<p>Active Transportation: See <i>Impacts Common to All Alternatives</i>.</p> <p>Parking: See <i>Alternative 2</i>.</p> <p>Safety: Alternatives 2 and 3 could also increase pedestrian crossings of the area’s many at-grade railroad crossings, including potential for pedestrian and vehicle conflicts with trains. Due to the potential increase in the rate of collisions for trucks and trains with vulnerable users, a significant adverse impact is expected under Alternatives 2 and 3.</p> <p>Rail: See <i>Impacts Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: Under Alternative 3, the increase in traffic volume would result in the following intersections meeting the impact threshold defined in the thresholds of significance for auto and freight travel:</p> <ul style="list-style-type: none"> Portland Avenue E & Puyallup Avenue Portland Avenue E & E 26th Street Alexander Avenue E & 12th Street E <p>Under Alternative 3, the increase in traffic volume would also result in the following WSDOT-controlled intersections</p>	<p>Active Transportation: See <i>Impacts Common to All Alternatives</i>.</p> <p>Parking: See <i>Impacts Common to All Alternatives</i>.</p> <p>Safety: See <i>Impacts Common to All Alternatives</i>.</p> <p>Rail: See <i>Impacts Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: As there is no substantive growth in traffic volume under Alternative 4, there are no significant impacts identified for auto, freight, or transit under this alternative.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>vehicles travel in the study area, this could potentially lead to an increase in the number of collisions, especially as growth occurs on corridors where collision density is high today.</p> <p>As a result of the increase in traffic, it is reasonably likely that the development alternatives, with the exception of Alternative 4 (which is not expected to result in a change in travel patterns or volume), could result in an increase of serious and/or fatal collisions in the study area compared to Alternative 1 (No Action).</p> <p>Rail: The growth in traffic volume expected under all four of the alternatives would increase the number of auto, freight, and transit users that experience delay due to rail crossings and the length of queues resulting from rail crossings. The increase in delay and queueing is expected to be highest on corridors with existing at-grade crossing where growth is forecast to be higher.</p>		<p>would result in the following intersections meeting the impact threshold defined in the thresholds of significance for auto and freight travel:</p> <ul style="list-style-type: none"> Portland Avenue E & Puyallup Avenue Portland Avenue E & E 26th Street <p>Under Alternative 2, the increase in traffic volume would also result in the following Washington State Department of Transportation (WSDOT)-controlled intersections meeting the impact threshold defined in the thresholds of significance:</p> <ul style="list-style-type: none"> Portland Avenue E & SR 509 On-Ramp Portland Avenue E & SR 509 Off-Ramp <p>As the increase in delay at the Portland Avenue E & E 26th Street intersection under Alternative 2 would also increase travel time and reliability for bus routes operating on Portland Avenue E, this is also a significant adverse impact for transit.</p>	<p>meeting the impact threshold defined in the thresholds of significance:</p> <ul style="list-style-type: none"> Portland Avenue E & SR 509 On-Ramp Portland Avenue E & SR 509 Off-Ramp <p>As the increase in delay at the Portland Avenue E & E 26th Street intersection under Alternative 3 would also increase travel time and reliability for bus routes operating on Portland Avenue E, this is also a significant adverse impact for transit.</p>	

Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
<p>Active Transportation/Parking/Safety/Rail: Transportation systems management and operations (TSMO) strategies can target high-priority roadway users, including freight and transit. Potential strategies include:</p> <ul style="list-style-type: none"> Intelligent Transportation System (ITS) applications such as dynamic message signs to alert travelers to blocking incidents or give travel time information about route choices. Truck detection and signal priority to allow traffic signals to recognize an approaching truck so the green light may be extended to let the truck travel through the intersection (providing both freight mobility and safety benefits). It should be noted that these improvements have the potential to delay other road users, including pedestrians trying to use a more comfortable crossing at a signal. Wayfinding for trucks to improve route decisions and reduce illegal movements. Geometric improvements at intersections to better design for key truck turning movements. These improvements should also consider the interactions of all vehicles with active mode users, and provide design elements that maximize safety between modes. Freight operations management to prioritize freight movements during certain times in certain locations. <p>Travel Demand Management (TDM): The specific measures described below are all potential projects that</p>	<p>Active Transportation/Parking/Safety/Rail: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: None.</p>	<p>Active Transportation/Parking/Safety/Rail: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: The projects needed to improve operations to acceptable based on City standards or operations consistent with the No Action Alternative are:</p> <ul style="list-style-type: none"> Portland Avenue E & Puyallup Avenue (City of Tacoma) Portland Avenue E & E 26th Street (City of Tacoma) Portland Avenue E & SR 509 On-Ramp Portland Avenue E & SR 509 Off-Ramp 	<p>Active Transportation/Parking/Safety/Rail: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: The projects needed to improve operations to acceptable based on City standards or operations consistent with the No Action Alternative are:</p> <ul style="list-style-type: none"> Portland Avenue E & Puyallup Avenue (City of Tacoma) Portland Avenue E & E 26th Street (City of Tacoma) Alexander Avenue E & 12th Street E (City of Tacoma) Portland Avenue E & SR 509 On-Ramp Portland Avenue E & SR 509 Off-Ramp 	<p>Active Transportation/Parking/Safety/Rail: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Auto, Freight, and Transit: See <i>Mitigation Common to All Alternatives</i>.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>the City could consider to modify or expand current strategies. It should be noted that any changes to off-street parking policies would be considered in consultation with stakeholders and in conjunction with improvements to make transit a more competitive option for workers.</p> <ul style="list-style-type: none"> • Parking maximums that would limit the number of parking spaces that can be built with new development. • Review the parking minimums currently in place for possible revisions. • Review on-street parking management strategies in concert with any adjustment to off-street parking standards to reduce the impact of spillover parking. • Unbundling of parking to separate parking costs from total property cost, allowing buyers or tenants to forgo buying or leasing parking spaces. • Increased parking taxes/fees. • Review and revise transit pass provision programs for employees. <p>Safety Improvements: The City would need to improve the facilities provided for people walking and biking, with particular attention to areas that have safety concerns and a high number of potential conflicts between vulnerable users (bicyclists and pedestrians) and freight traffic.</p> <p>Parking Strategies:</p> <ul style="list-style-type: none"> • Encourage and implement programs to manage its available on-street parking. • Expand on multiple strategies, such as time limits and restricted parking zones. • Use time limits to encourage short-term parking for visitors to local businesses on key blocks while allowing longer term parking in other locations that serve industrial users. • Consider potential locations to implement additional off-street truck staging and processing facilities, in addition to implementing targeted mitigations that help manage the influx of trucks at terminal entrances. • Restricted parking zones—with complementing resources to enforce those restrictions – could be used to discourage spillover parking and to reserve specific parking areas for large trucks to address issues that arise when overnight parking conflicts with adjacent businesses or complaints regarding trucks parking for long periods of time. 				

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
PUBLIC SERVICES				
Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
Police and Fire Services: The increase in employment and density creates an adverse impact for fire services to be provided in a timely fashion to the Tideflats Subarea community.	Police and Fire Services: See <i>Impacts Common to All Alternatives</i> .	Police and Fire Services: See <i>Impacts Common to All Alternatives</i> .	Police and Fire Services: See <i>Impacts Common to All Alternatives</i> .	Police and Fire Services: See <i>Impacts Common to All Alternatives</i> .
Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
Police and Fire Services and Parks: The proposed Subarea Plan and elements of the alternatives themselves have potential self-mitigating features. Other Potential Mitigation Measures: Impacts are expected to be incremental over time, and the following mitigation measures identify the ongoing planning and sources of revenue that could support service demand increases over time. <i>Police and Fire Services:</i>	Police and Fire Services: See <i>Mitigation Common to All Alternatives</i> . Parks: See <i>Mitigation Common to All Alternatives</i> .	Police and Fire Services: See <i>Mitigation Common to All Alternatives</i> . Parks: See <i>Mitigation Common to All Alternatives</i> .	Police and Fire Services: See <i>Mitigation Common to All Alternatives</i> . Parks: See <i>Mitigation Common to All Alternatives</i> .	Police and Fire Services: See <i>Mitigation Common to All Alternatives</i> . Parks: See <i>Mitigation Common to All Alternatives</i> .
<ul style="list-style-type: none"> Ongoing City operational and capital facilities planning efforts are expected to address incremental increases and other changes in demand for police and fire services. A portion of the tax revenue generated from redevelopment in the study area would accrue to the City of Tacoma and could be used to fund future police and fire services. The City is currently exploring if fire impact fees might help meet the need for additional fire protection infrastructure generated by new development. Implementation of this program may help support the development of future fire facilities. As part of the Planned Action Ordinance for the Tideflats Subarea, the City could establish a SEPA mitigation fee. It could be based on the expected incidents, and needs for apparatus, access, and building space in appropriate locations. The mitigation fee could be used to help fund an additional station, improved access, increased staffing, or apparatus to address strained response time needs. <p>The Tideflats Emergency Response Plan (2016) identifies the following general strategies as options for the port area:</p> <ul style="list-style-type: none"> New or modified roadway infrastructure (e.g., new connections, road widening, improved pavement conditions, etc.). 				

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<ul style="list-style-type: none"> Operational improvements using Intelligent Transportation Systems (e.g., signal coordination, emergency preemption, traveler information, coordinated dispatch Computer Aided Dispatch (CAD) etc.). New or modified fire/paramedic facilities in the Tideflats Subarea. Designation of Emergency Response Corridors as a means to alleviate impacts due to street vacations and closures. These Emergency Response Corridors would be prioritized for street and ITS improvements to ensure consistent access and travel times for emergency response services and as potential evacuation corridors. <p><i>Parks:</i></p> <ul style="list-style-type: none"> A portion of the tax revenue generated from redevelopment in the study area would accrue to the City of Tacoma and could be used by Metro Parks to fund future park investments in the subarea. Metro Parks prepares strategic and system plans for parks and recreation investments to provide for system improvements and attract capital grants. The City of Tacoma and Port of Tacoma interlocal agreement provides pay-in-lieu opportunities. 				

UTILITIES				
Impacts Common to All Alternatives	Impacts	Impacts	Impacts	Impacts
<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste:</p> <p>Potential future population and employment growth associated with the alternatives will increase the demand for potable water and wastewater services, electricity, natural gas, communications and data, and solid waste.</p> <p>Climate Adaptation:</p> <p>Critical infrastructure including stormwater systems, wastewater facilities, and electric power facilities will be impacted by a range of climate hazards, including sea level rise, flooding, extreme heat, and landslides. Investing in infrastructure resilience strategies can create local jobs, support economic resilience, protect valuable assets, and improve safety during emergencies. Communities that travel to flooded areas for work or other daily needs will also be impacted by localized and coastal flooding. Port jobs and infrastructure could be at risk from flooding and other changes.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p> <p>With the No Action Alternative, existing site conditions and trends would continue. Existing trends include businesses (including the Port of Tacoma) and residences in the study area moving to more electricity use rather than natural gas use to meet emissions reduction goals. These trends will continue and may increase, which will in effect decrease demand for natural gas and increase the demand for electricity.</p> <p>Climate Adaptation:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p> <p>Climate Adaptation:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p> <p>Climate Adaptation:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p> <p>Climate Adaptation:</p> <p>See <i>Impacts Common to All Alternatives</i>.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
Mitigation Common to All Alternatives	Mitigation	Mitigation	Mitigation	Mitigation
<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste: Incremental growth over the planning period would be addressed during the City’s regular capital facility planning efforts, in system plan updates, and as required by GMA. Each utility service provider in coordination with the City would evaluate levels of service and funding sources to balance with expected growth; if funding falls short, adjustments may be needed to level of service targets or to growth targets as part of regular planning under GMA.</p> <p>Development within the study area may require developer-financed improvements to water infrastructure serving that development. The City of Tacoma has a standardized process for requesting water connections. The study area may also require water system improvements to increase fire flow to meet current standards. Developers may be required to install improvements to the water system to ensure fire flow standards are met.</p> <p>Development in the study area will be required to comply with the plans and regulations. Integrated Resource Plan (IRP) updates will contain planned improvements that accommodate future development. Given that development will occur gradually over the 20-year planning horizon and capital facility planning and IRP updates will address incremental needs as they arise, development related to the Subarea Plan is not expected to require major new projects or initiatives for potable water system upgrades that are not already planned. The level of service standard for potable water is addressed below for each alternative.</p> <p>Other Potential Mitigation Measures: Concentrate growth in areas with adequate potable water, stormwater, and sewer infrastructure.</p> <ul style="list-style-type: none"> • Build additional population density into upcoming plan or service updates such as periodic IRPs, conservation plans, and other future utility planning documents. • Invest in building new facilities for water, wastewater, and stormwater services. • Work with City and non-city utility providers to plan for new or improved facilities to meet future demand, including ensuring infrastructure currently exists for planned development or that upgrades needed to support the development alternatives are not prohibitive. In some cases, working with the providers to upgrade services prior to development may be a way 	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Climate Adaptation: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Climate Adaptation: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Climate Adaptation: See <i>Mitigation Common to All Alternatives</i>.</p>	<p>Potable Water/Wastewater/Electricity/Natural Gas/Communications and Data/Solid Waste: See <i>Mitigation Common to All Alternatives</i>.</p> <p>Climate Adaptation: See <i>Mitigation Common to All Alternatives</i>.</p>

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>to facilitate the City’s goals for growth within the Tacoma Tideflats area.</p> <ul style="list-style-type: none"> • Require potable water, wastewater, and stormwater connections for all new development, unless otherwise allowed by state, county, or city regulations. • Reduce vulnerability to surcharging during rainstorms by running the sewer model using forecast climate change rainfall amounts, expected to increase at highest percentages. The results will identify where retrofits may be required, but also where new development and redevelopment can mitigate for the future by installing pipes that carry a larger capacity. • Consider including the equity issues of provision of utilities in future updates to utilities plans to ensure all members of the community are provided safe means of handling wastewater. • Encourage sponsors of future corridor improvement projects to coordinate with utilities to identify joint opportunities. Even if there is not a demand for buried communications infrastructure, there may be benefits in laying conduit as part of a “Dig Once” strategy. • Consider updates to the Port of Tacoma Strategic Plan when evaluating utility needs within the Tacoma Tideflats area. <p><i>Climate Adaptation:</i></p> <ul style="list-style-type: none"> • Coordinate with climate change planners to anticipate infrastructure improvements or adaptation techniques to minimize damage to infrastructure or disruption to utility service related to future sea level rise or other climate-related effects to the community. For example, the Climate Vulnerability Assessment for the Tideflats Subarea (see Appendix G) recommends: <ul style="list-style-type: none"> – Account for up to 2ft relative sea level rise (RSLR) in the short-term design and 5ft RSLR in the long-term planning of high-risk resources: Major, high-risk infrastructure and major utilities that cannot tolerate flooding should consider the potential for severe, low-probability RSLR scenarios at long-term time horizons to avoid potential future loss of key services and minimize the need for costly adaptation measures at a later date. Given these potential consequences, planning for up to 5ft RSLR may be appropriate for resources with 50+ year design lives. – Maintain flexibility in sea level rise adaptation strategies: New or redeveloped infrastructure and short-term RSLR adaptation measures should be 				

All Alternatives	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4
<p>designed in a manner that does not preclude implementation of future adaptation strategies geared toward more severe RSLR scenarios. This can be accomplished in a number of ways such as maintaining a buffer area between the shoreline and critical infrastructure.</p>				

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1.3.7 Potential Significant Adverse Environmental Impacts

The following summarizes the potential significant adverse environmental impacts identified in this environmental analysis, based on the full analysis presented in Chapters 3 through 10 of the Draft EIS.

Land Shoreline Use

Land Use Compatibility: Alternative 3 would result in a significant unavoidable adverse impact regarding air quality due to non-industrial uses proximate to heavy industrial activities inside the study area.

Land Use Transitions: In terms of air quality, Alternative 3 is expected to result in a significant unavoidable adverse impact regarding air quality due to non-industrial uses proximate to heavy industrial activities outside the study area.

Air Quality

Alternative 1 is expected to result in a significant unavoidable adverse impact for air quality/GHG due to non-industrial uses proximate to heavy industrial activities and due to conflict with the PSCAA Strategic Plan target to improve air quality in overburdened communities.

Alternative 3 is expected to result in a significant unavoidable adverse impact for air quality/GHG due to non-industrial uses proximate to heavy industrial activities and due to conflict with the PSCAA Strategic Plan target to improve overburdened communities' air quality.

Alternative 4 is expected to result in a significant unavoidable adverse impact for air quality/GHG due to non-industrial uses proximate to heavy industrial activities and due to conflict with the PSCAA Strategic Plan target to improve overburdened communities' air quality.

Public Services

All new development in the area and corresponding increased demand on emergency response will lengthen the extended response times that the Fire Department now experiencing. With the added development, the current adverse situation is worsened. The increased population in a geographically challenging area due to waterways, rail, bridge limitation, and road conditions would create challenges related to emergency response and evacuation measures.

Coordination with the City to support modified roadway infrastructure and the designation of emergency response corridors and other suggested mitigation measures will allow the City to provide better service response times. This coordination reduce significant unavoidable adverse impacts.

Transportation

Parking: Because Alternatives 2 and 3 are expected to increase demand in localized areas, potentially for a sustained period and by a substantive amount compared to Alternative 1 (No Action), significant adverse parking impacts are expected under these alternatives.

Safety: Due to the potential increase in the rate of collisions for trucks and trains with vulnerable users, a significant adverse impact is expected under Alternatives 2 and 3.

Auto, Freight, and Transit: Under Alternative 2, the increase in traffic volume would result in the following intersections meeting the impact threshold defined in the thresholds of significance for auto and freight travel:

- Portland Avenue E & Puyallup Avenue
- Portland Avenue E & E 26th Street

Under Alternative 2, the increase in traffic volume would also result in the following Washington State Department of Transportation (WSDOT)-controlled intersections meeting the impact threshold defined in the thresholds of significance:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp

As the increase in delay at the Portland Avenue E & E 26th Street intersection under Alternative 2 would increase travel time and reliability for bus routes operating on Portland Avenue E, this is also a significant adverse impact for transit.

Under Alternative 3, the increase in traffic volume would result in the following intersections meeting the impact threshold defined in the thresholds of significance for auto and freight travel:

- Portland Avenue E & Puyallup Avenue
- Portland Avenue E & E 26th Street
- Alexander Avenue E & 12th Street E

Under Alternative 3, the increase in traffic volume would also result in the following WSDOT-controlled intersections meeting the impact threshold defined in the thresholds of significance:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp

As the increase in delay at the Portland Avenue E & E 26th Street intersection under Alternative 3 would increase travel time and reliability for bus routes operating on Portland Avenue E, this is also a significant adverse impact for transit.

1.4 Significant Areas of Controversy and Uncertainty, and Issues to Be Resolved

Adoption of the Tacoma Tideflats Subarea Plan, regulations, and a Planned Action Ordinance would allow changes to land use patterns, structure heights, and shared and reduced parking ratios, among other topics. These plan and regulation changes, together with the capital improvements, would support development and redevelopment of the area. The major issues under review in this EIS include:

- The proposed redevelopment and potential effects of growth.
- Effect of growth on overall mobility and multiple transportation modes.

Issues to be resolved include:

- Preparation of policy and code amendments to address custom development standards and design guidelines, together with revised code and zoning that will achieve the vision for the Subarea Plan.

Key environmental issues and options facing decision-makers include:

- Alternative land use patterns in relation to growth estimates and community vision.
- Relationship of land use patterns to the natural environment and land use compatibility.
- Effect of growth on demand for transportation capital improvements.

Prior to preparation of the Final EIS, the following issues are expected to be resolved:

- Selection and refinement of future land uses studied in the range of alternatives.
- Refinement of subarea goals, objectives, and policies.

Issues yet to be resolved include guidance related to the development regulations for specific zones to accommodate the changes proposed in the alternatives. The precise nature of these necessary amendments will be described in the Final EIS, after a Preferred Alternative has been identified.

1.5 Benefits and Disadvantages of Delaying the Proposed Action

If the Proposed Action is delayed, growth in the Tideflats Subarea would be guided by the current Comprehensive Plan and zoning. Implementing Alternative 1 (No Action) would result in not meeting employment goals, inconsistencies with transportation goals, and a growth pattern that could result in more adverse impacts on land use. Delaying the Proposed Action would also not align with the GMA or City of Tacoma and other stakeholder planning policies. This could hinder the City's and other stakeholders' success in obtaining grants and loans.

CHAPTER 2 Alternatives

2.1 Introduction

This non-project proposal involves the development of an innovative, area-wide Subarea Plan for Tacoma’s Tidelands, which will become an optional element of the City’s Comprehensive Plan. The Subarea Plan will include elements related to land use, economic development, the environment, public facilities and services, and transportation. The Subarea Plan is being developed for consistency with the Growth Management Act (GMA), Shoreline Management Act, multicounty planning policies, countywide planning policies, and the City of Tacoma Comprehensive Plan.

2.2 Description of Alternatives

SEPA requires analysis of “reasonable alternatives” as part of an EIS and defines reasonable as “actions that could feasibly attain or approximate a proposal’s objectives, but at a lower environmental cost or decreased level of environmental degradation.”¹ In every EIS, the No Action Alternative must also be evaluated. The following is a discussion of the No Action Alternative (Alternative 1) and the three development alternatives (Alternatives 2, 3, and 4) for the Tacoma Tidelands Subarea analyzed in the EIS.

The following are the EIS alternative concepts for the Tidelands Subarea Plan and EIS. As a first step, the identification of guiding principles helped to frame and shape how the alternatives were considered and structured as well as the following EIS alternatives considerations:

¹ WAC 197-11-440(5).

- The four alternatives presented in this EIS convey a range that are analyzed and evaluated in the EIS. All alternatives assume that the Tideflats Subarea remains a MIC.
- SEPA encourages lead agencies to describe alternatives as different ways to meet objectives. Alternatives may, however, emphasize or weight benefits and outcomes differently.
- The impact analysis is being performed as part of this EIS.
- Alternatives are conceptual; they provide high-level direction, but are not yet parcel- or use-specific.
- The purpose of alternatives is to present options to decision-makers and the public in a meaningful way.
- Alternatives should be distinct and different enough to allow for meaningful comparison and should represent a range of reasonable options; it is not necessary to consider every possible option.
- The final Subarea Plan need not be identical to any single alternative but must be within the range of alternatives considered in the EIS. The Subarea Plan can mix and match and pull elements from each alternative.
- Identifying a Preferred Alternative is not required for an EIS but can be designated at any point in the process.
- A “no action” alternative is required and provides a benchmark for comparison with “action” alternatives, or development alternatives in the case of this EIS.
- Additional information, such as a fiscal analysis, will inform and influence the Subarea Plan but is not included in the EIS.

The identification of the final alternatives was decided based on the public engagement and public scoping comments received, the contributions from the partner agencies, through a series of meetings with representatives from the project management team (PMT) representing each partner agency, from a series of meetings with the technical advisory group (TAG), and through conversations with other consultant technical subject matter experts. The alternatives were considered in terms of whether they related to the goals stated above and the guiding principles found in the Work Plan (Appendix A). Additional information on the assumptions used to generate the jobs and housing estimates for each alternative is found in the Alternatives Development Memo (Appendix D).

There are a variety of subcategories provided in the alternatives that the City and their partner agencies decided to include in the subarea planning and subsequently to the EIS. These subcategories include the following: growth and density, industrial uses and zoning, Transition

Areas, housing, economic flexibility, fish and wildlife habitat, shoreline access, sea level rise, transportation, and decarbonization.

2.2.1 Alternative 1 (No Action)

Alternative 1 represents the baseline (called the No Action Alternative) and assumes continuation of the policies, regulations, and programs in effect when the EIS process is initiated. The No Action Alternative assumes that future growth will occur under the policies and regulations in place. Alternative 1 maintains existing zoning, with the most extensive heavy industrial zoning among the three alternatives. Based on existing employment growth rates, it emphasizes current competitive advantages while allowing the most flexibility for emerging markets and other commercial uses. See **Exhibit 2-1**.

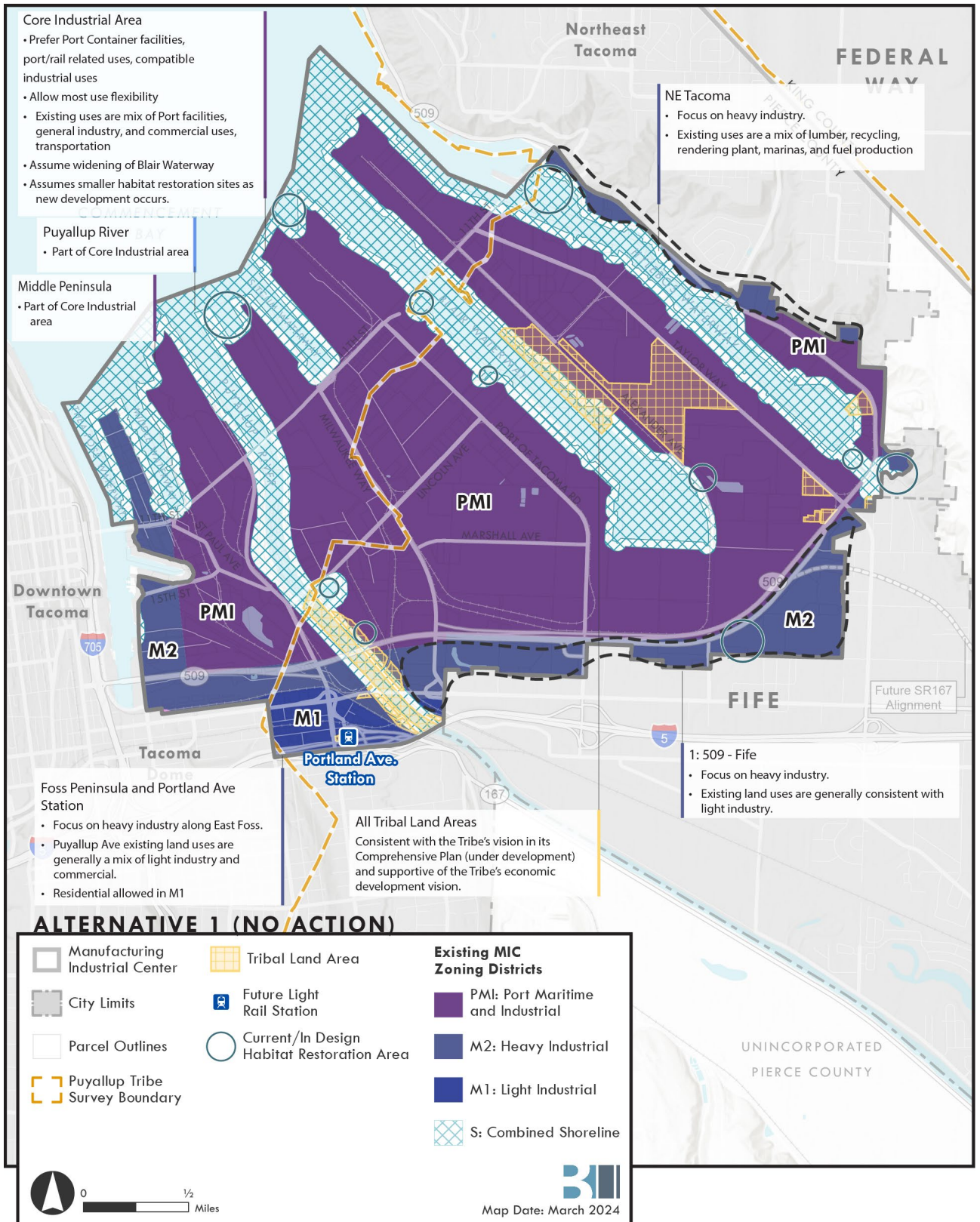
Investments in traffic operations, fish and wildlife habitat, and shoreline access and recreation are in response to development permits or grants. Sea level rise is addressed on a site- or project-specific basis.

Alternative 1 would maintain the policies in the City of Tacoma's adopted Comprehensive Plan. These include the existing Core and buffer areas and other policies of the Container Port Element. The Container Port Element addresses and provides goals and policies relative to the Port Industrial Area. See **Exhibit 2-2**.

Character Areas

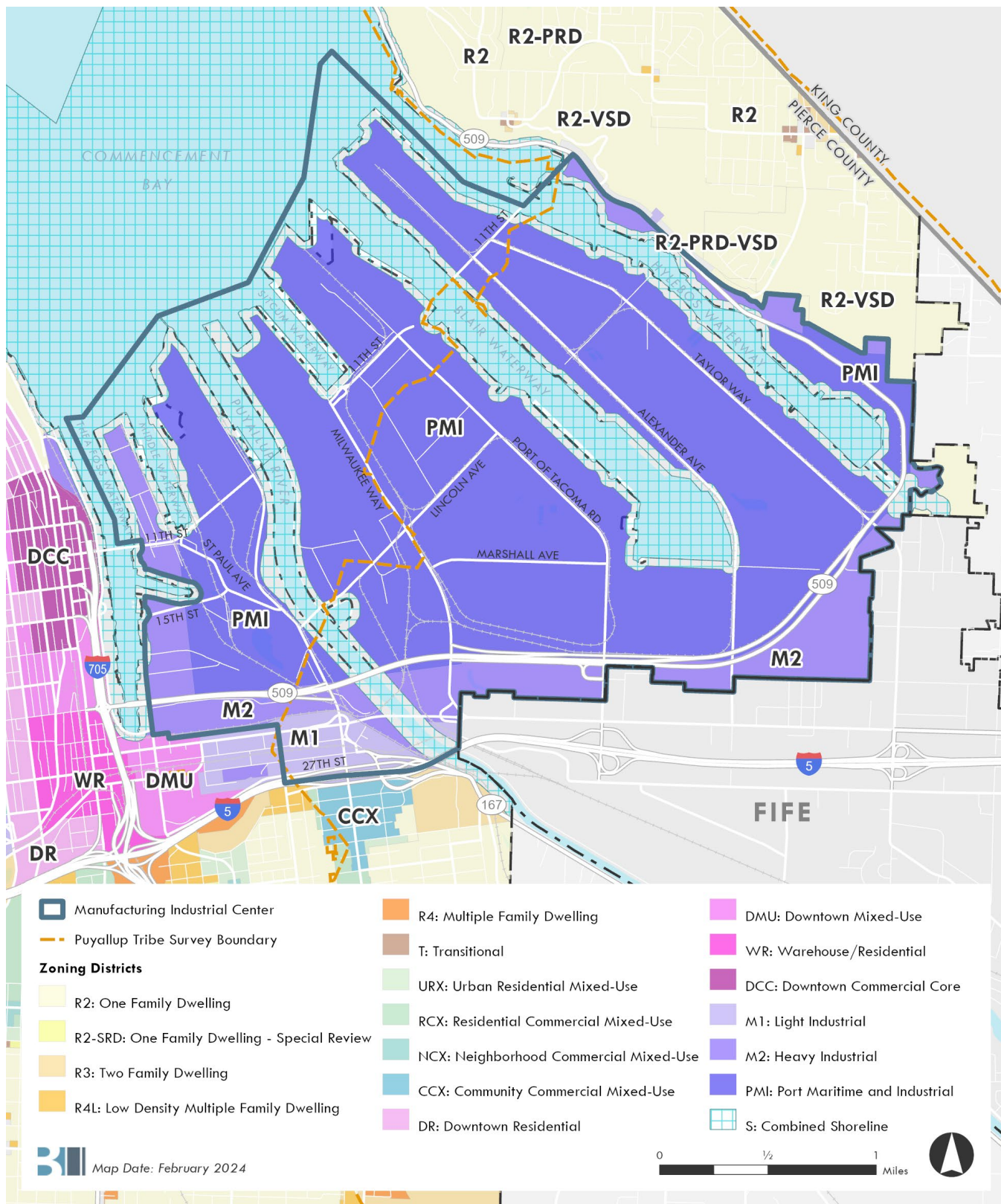
Exhibit 2-3 highlights some smaller character areas that are used for comparison purposes across Alternatives 2 and 3. They describe the following smaller areas:

- Core Area
- SR 509 to Fife
- Foss Peninsula
- Puyallup River
- Northeast Tacoma
- Portland Avenue Station Area
- Middle Peninsula



SOURCE: BERK 2024

EXHIBIT 2-1 Alternative 1 (No Action) – Existing Land Use



SOURCE: BERK 2024

EXHIBIT 2-2 Alternative 1 (No Action) – Existing Zoning Districts



SOURCE: BERK 2024

EXHIBIT 2-3 Character Areas

2.2.2 Alternative 2

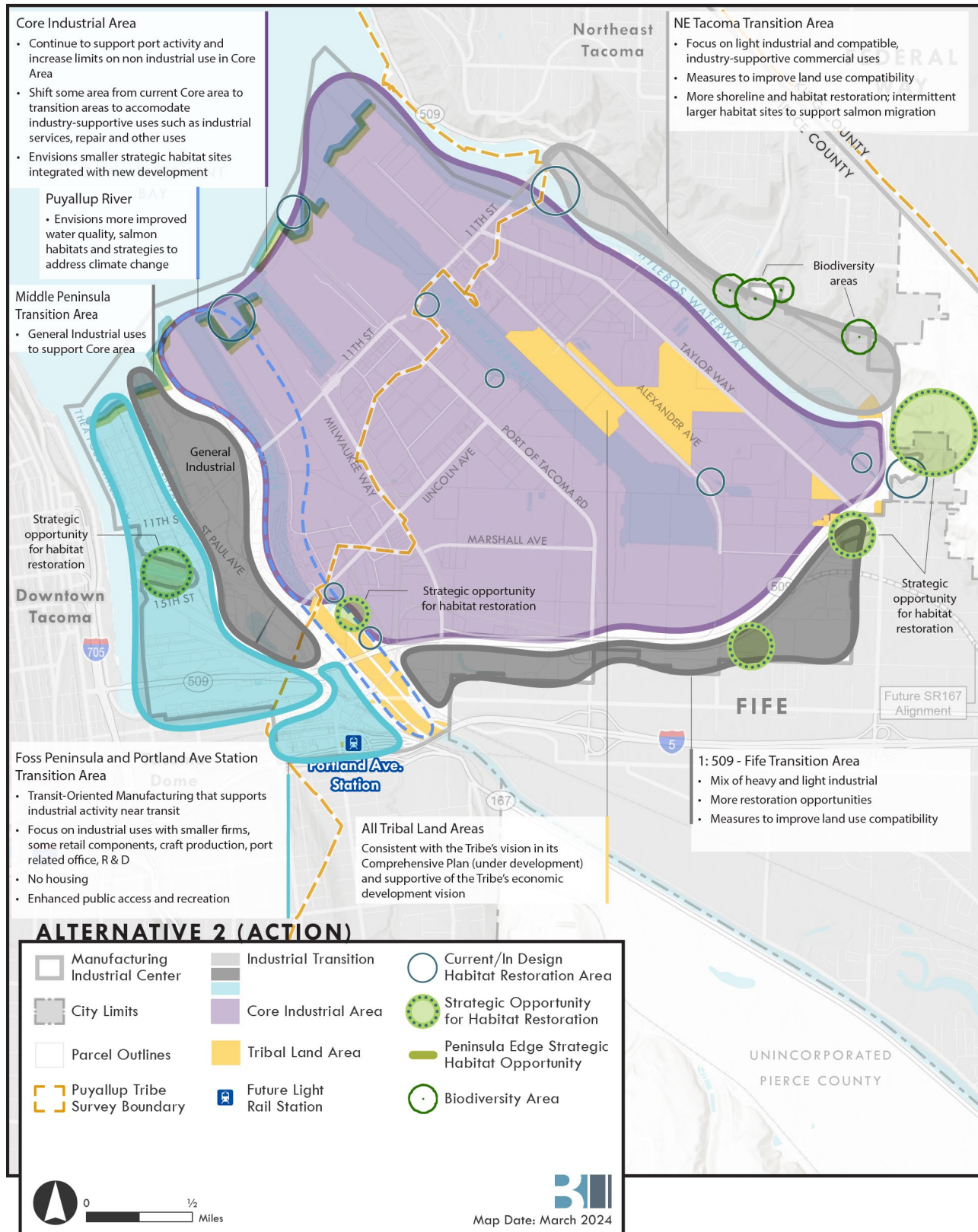
Table 2-1 summarizes characteristics of Alternative 2, while **Exhibit 2-4** spatially depicts some of these characteristics.

TABLE 2-1 Alternative 2 Characteristics

Characteristics	Alternative 2 (Development Alternative)
<p>Employment Growth</p> <ul style="list-style-type: none"> How many new jobs are planned for the Tideflats Subarea. 	<ul style="list-style-type: none"> Capacity for 10,000 new jobs; 5,334 new jobs analyzed and evaluated. PSRC Planning Target.
<p>Employment Density</p> <ul style="list-style-type: none"> How many jobs per acre of land are supported in the Tideflats Subarea. 	<p>More</p> <ul style="list-style-type: none"> Similar overall growth target as Alternative 3 but maintaining greater industrial land supply.
<p>Industrial Use Concentration</p> <ul style="list-style-type: none"> Percent of uses within the Tideflats Subarea that are considered industrial versus non-industrial. 	<p>Most</p> <ul style="list-style-type: none"> Alternative 2 represents greater restrictions on non-industrial activity in heavy industrial zoning districts.
<p>Land Area in Industrial Zoning Classification</p> <ul style="list-style-type: none"> How much of the total Tideflats Subarea land area is zoned PMI, M-2, M-1, or S-10. 	<p>More</p> <ul style="list-style-type: none"> Some industrially zoned lands shift to conservation classification consistent with existing restoration sites, or as new restoration occurs; Transition Areas (defined below) remain industrially zoned.
<p>Land Area Zoned for Heavy Industry</p> <ul style="list-style-type: none"> How much of the Tideflats Subarea remains zoned for heavy industrial versus light industrial. 	<p>More</p> <ul style="list-style-type: none"> Some Transition Areas become light industrial.
<p>Land Area in Transition Category</p> <ul style="list-style-type: none"> Transition Areas are zones between heavy industrial and non-industrial areas, providing for a mix of industrial and compatible non-industrial uses and performance standards to address off-site impacts. 	<p>More</p> <ul style="list-style-type: none"> Utilizes a combination of heavy industrial and light industrial Transition Areas.
<p>Housing</p> <ul style="list-style-type: none"> The degree to which the alternatives allow housing. 	<p>Least</p> <ul style="list-style-type: none"> No housing allowed anywhere in the subarea.
<p>Economic Flexibility</p> <ul style="list-style-type: none"> The degree to which the alternatives limit the range of industrial economic activity. 	<p>More Industrial Flexibility</p> <ul style="list-style-type: none"> Greater focus on industrial employment. Industrial uses with higher employment densities are encouraged.

Characteristics	Alternative 2 (Development Alternative)
<p>Fish and Wildlife Habitat Restoration</p> <ul style="list-style-type: none"> Amount of land area restored for fish and wildlife habitat as a result of either mitigation or other restoration efforts. 	<p>More</p> <ul style="list-style-type: none"> Restoration efforts are coordinated and sites for mitigation are identified in advance of permitting. More shoreline buffer enhancement occurs, and intermittent larger habitat sites established.
<p>Shoreline Access and Recreation</p> <ul style="list-style-type: none"> The ability of the general public to see, touch, and enjoy the waters of the state. 	<p>More</p> <ul style="list-style-type: none"> Greater coordination among public sector and private sector. Access expands in conjunction with Transition Areas and restoration efforts. Priority completion of SR 509 Shared Use Path.
<p>Sea Level Rise Adaptation Measures</p>	<ul style="list-style-type: none"> Emphasizes protective and accommodative adaptation measures to preserve industrial lands and protect essential public facilities.
<p>Transportation Network</p> <ul style="list-style-type: none"> Planned multimodal transportation networks and priority projects. Proactive approach to investments. 	<p>—</p>
<p>Decarbonization</p>	<ul style="list-style-type: none"> 2040 Goal

SOURCE: BERK 2022



SOURCE: BERK 2024

EXHIBIT 2-4 Alternative 2 (Development Alternative)

2.2.3 Alternative 3

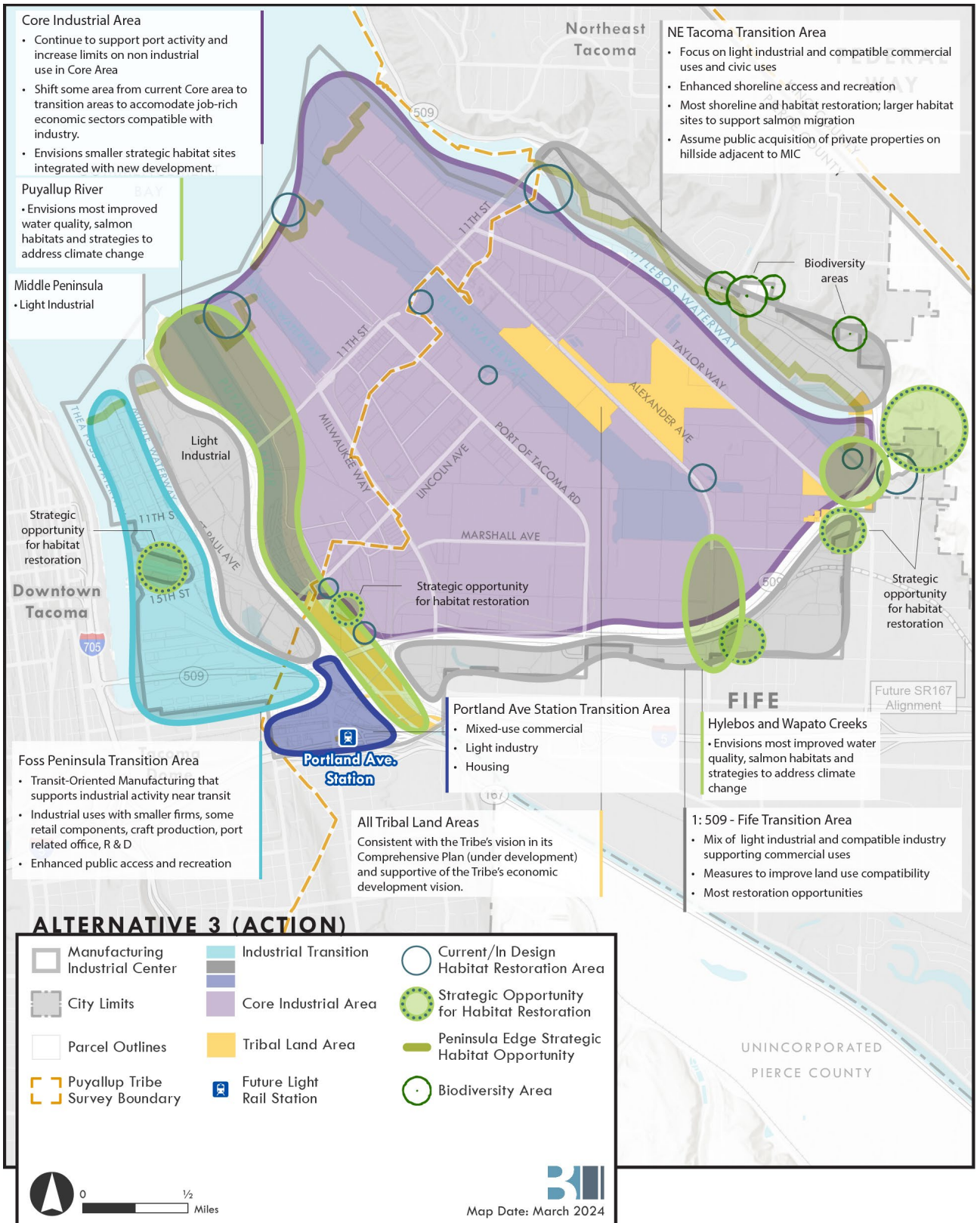
Table 2-2 summarizes characteristics of Alternative 3, while **Exhibit 2-5** spatially depicts some of these characteristics.

TABLE 2-2 Alternative 3 Characteristics

Characteristics	Alternative 3 (Development Alternative)
<p>Employment Growth</p> <ul style="list-style-type: none"> - How many new jobs are planned for the Tideflats Subarea. 	<ul style="list-style-type: none"> Capacity for 10,000 new jobs; 8,529 jobs analyzed and evaluated. PSRC Planning Target.
<p>Employment Density</p> <ul style="list-style-type: none"> - How many jobs per acre of land are supported in the Tideflats Subarea. 	<p>Most</p> <ul style="list-style-type: none"> This alternative represents the highest overall employment density, with the same overall growth target as Alternative 2, but with more land in restoration/conservation status.
<p>Industrial Use Concentration</p> <ul style="list-style-type: none"> Percent of uses within the Tideflats Subarea that are considered industrial versus non-industrial. 	<p>Less</p> <ul style="list-style-type: none"> This alternative represents a greater allowance for non-industrial uses within the Transition Areas.
<p>Land Area in Industrial Zoning Classification</p> <ul style="list-style-type: none"> How much of the total Tideflats Subarea land area is zoned PMI, M-2, M-1, or S-10. 	<p>Less</p> <ul style="list-style-type: none"> More industrial land supply is converted for restoration, sea level rise adaptation; Portland Avenue Transition Area becomes more traditional transportation-oriented design (TOD) with industrial use allowance
<p>Land Area Zoned for Heavy Industry</p> <ul style="list-style-type: none"> How much of the Tideflats Subarea remains zoned for heavy industrial versus light industrial. 	<p>Least</p> <ul style="list-style-type: none"> All Transition Areas become light industrial.
<p>Land Area in Transition Category</p> <ul style="list-style-type: none"> Transition Areas are zones between heavy industrial and non-industrial areas, providing for a mix of industrial and compatible non-industrial uses and performance standards to address off-site impacts. 	<p>Most</p> <ul style="list-style-type: none"> Transition Areas are combination of light industrial and transit oriented manufacturing, TOD around Portland Avenue Station.
<p>Housing</p> <ul style="list-style-type: none"> The degree to which the alternatives allow housing. 	<p>Most</p> <ul style="list-style-type: none"> Housing encouraged close to transit and in proximity to downtown; housing types limited to workforce housing, live-work spaces.

Characteristics	Alternative 3 (Development Alternative)
<p>Economic Flexibility</p> <ul style="list-style-type: none"> The degree to which the alternatives limit the range of industrial economic activity. 	<ul style="list-style-type: none"> Less Industrial Flexibility in Core Area, more flexibility in Transition Areas Core Areas of the port are reserved for container/port activities and related industrial and commercial support services. Other shoreline areas support water-oriented uses.
<p>Fish and Wildlife Habitat Restoration</p> <ul style="list-style-type: none"> Amount of land area restored for fish and wildlife habitat as a result of either mitigation or other restoration efforts. 	<p>Most</p> <ul style="list-style-type: none"> Restoration efforts are coordinated, and sites for mitigation are identified in advance of permitting. Restoration occurs concurrent with sea level rise adaptation. Proactive investments in restoration occur.
<p>Shoreline Access and Recreation</p> <ul style="list-style-type: none"> The ability of the general public to see, touch, and enjoy the waters of the state. 	<p>Most</p> <ul style="list-style-type: none"> Proactive investment. Complete system buildout.
<p>Sea Level Rise Adaptation Measures</p>	<ul style="list-style-type: none"> Emphasizes proactive accommodation and managed retreat.
<p>Transportation Network</p> <ul style="list-style-type: none"> Planned multimodal transportation networks and priority projects Proactive approach to investments 	<p>—</p>
<p>Decarbonization</p>	<ul style="list-style-type: none"> 2030 Goal

SOURCE: BERK 2024



SOURCE: BERK 2024

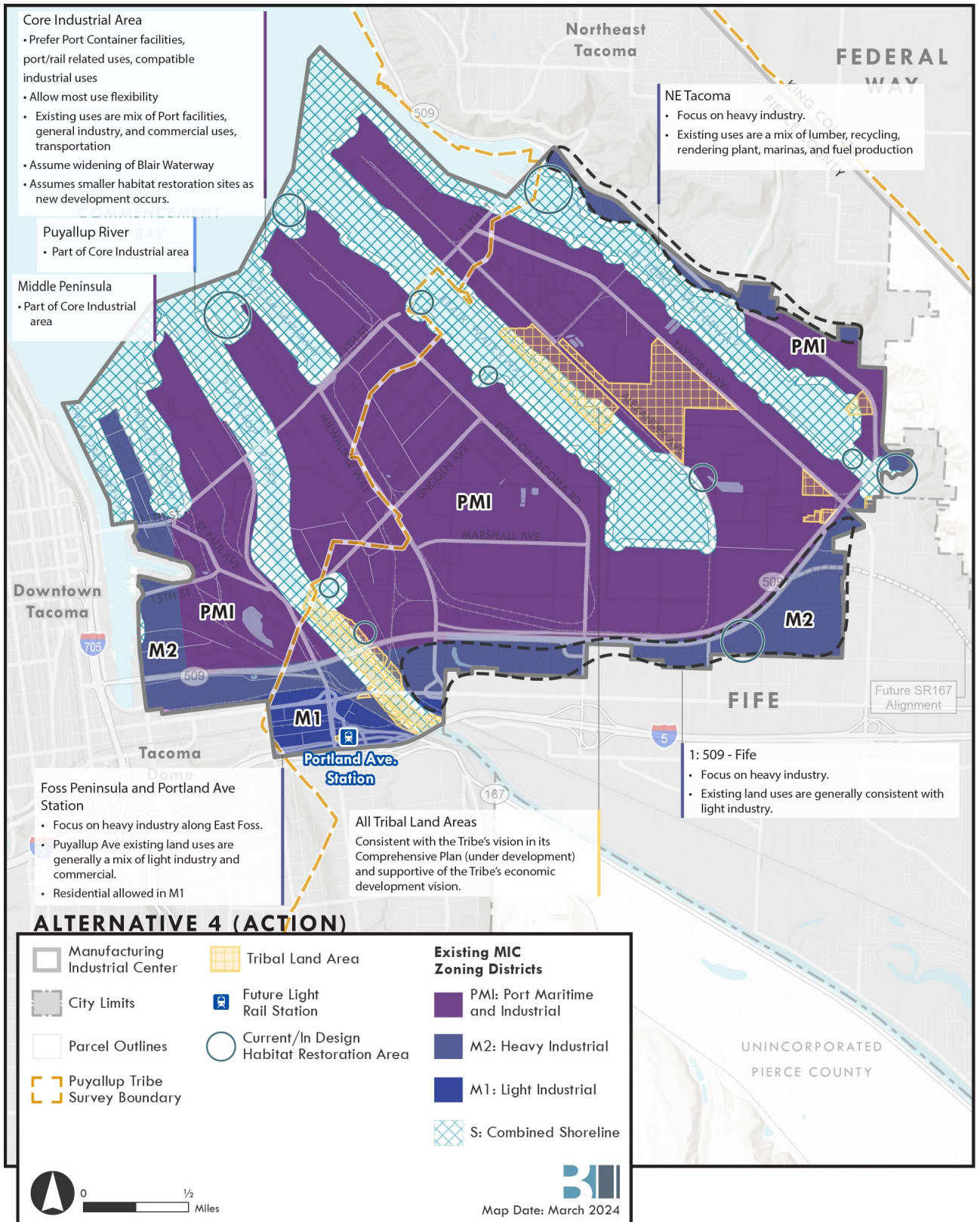
EXHIBIT 2-5 Alternative 3 (Development Alternative)

2.2.4 Alternative 4

Table 2-3 summarizes characteristics of Alternative 4, while **Exhibit 2-6** spatially depicts some of these characteristics.

TABLE 2-3 Alternative 4 Characteristics

Characteristics	Alternative 4 (Development Alternative)
<p>Land Area in Transition Category</p> <ul style="list-style-type: none"> Transition Areas are zones between heavy industrial and non-industrial areas, providing for a mix of industrial and compatible non-industrial uses and performance standards to address off-site impacts. 	<ul style="list-style-type: none"> Options to avoid displacement of port-supportive uses such as warehousing space. Capacity for 10,000 new jobs; trend of 1,048 analyzed and evaluated, similar to Alternative 1.
<p>Housing</p> <ul style="list-style-type: none"> The degree to which the alternatives allow housing. 	<ul style="list-style-type: none"> Additional housing near high-capacity transit.
<p>Fish and Wildlife Habitat Restoration</p> <ul style="list-style-type: none"> Amount of land area restored for fish and wildlife habitat as a result of either mitigation or other restoration efforts. 	<ul style="list-style-type: none"> Coordination and accelerated fish and wildlife habitat restoration for Commencement Bay and lower Puyallup River watershed.
<p>Shoreline Access and Recreation</p> <ul style="list-style-type: none"> The ability of the general public to see, touch, and enjoy the waters of the state. 	<ul style="list-style-type: none"> Greater coordination and enhancement of shoreline access and passive recreation.
<p>Sea Level Rise Adaptation Measures</p>	<ul style="list-style-type: none"> Measures to preserve industrial lands and protect essential public facilities such as port operations, with options for sea level rise adaptation and mitigation.
<p>Transportation Network</p> <ul style="list-style-type: none"> Planned multimodal transportation networks and priority projects. Proactive approach to investments. 	<ul style="list-style-type: none"> Coordinated mitigation agreements to streamline permitting. Shared priority projects. Transportation projects consider sea level rise resiliency. Prioritization of freight route projects, funding, timing, and coordination to support projected maritime cargo volumes.
<p>Decarbonization</p>	<ul style="list-style-type: none"> Coordinate and accelerate decarbonization implementation strategies and goals.



SOURCE: BERK 2024

EXHIBIT 2-6 Alternative 4 (Development Alternative)

3

CHAPTER 3 Land and Shoreline Use – Plans and Policies

This chapter describes existing land use patterns, development types, mix of uses, scale and intensity of development, study area character, and land use compatibility. It also summarizes pertinent plans, policies, and regulations, including the City’s Growth Management Act (GMA) Comprehensive Plan (including the Container Port Element), land use and shoreline regulations, Puget Sound Regional Council (PSRC) requirements, and other applicable and adopted plans from the Port of Tacoma, Puyallup Tribe, Pierce County, and City of Fife.

3.1 Affected Environment

The study area is located within Pierce County in the City of Tacoma and the Puyallup Indian Reservation, and it borders the City of Fife. The area is largely used for industrial and port uses.

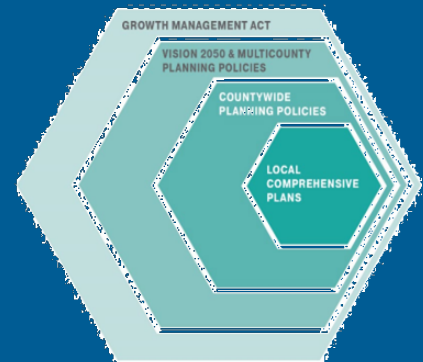
The study area includes 3,963 upland parcel acres spread across 752 parcels with a diverse range of uses.¹ Most uses are industrial activities. Manufacturing, warehousing, and transportation are also significant proportions of the overall land use acreage in the study area (parcel acres). A number of non-industrial activities, services, utilities, and commercial activities are also in the study area. Other land in the study area is vacant due to legacy contamination resulting in brownfields.

3.1.1 Local Policy Framework

From a planning policy standpoint, the study area is situated within a regional and local planning framework, with adopted applicable policy and regulatory guidance. These include the City of Tacoma Comprehensive Plan, North and South Downtown Subarea Plans,

Washington’s Planning Framework

The Growth Management Act (GMA) establishes broad goals to act as the basis for planning at the local, countywide, and regional scales. The law requires consistency between multicounty planning policies (VISION 2050), countywide planning policies, and local comprehensive plans, while recognizing that specific aspects of implementation often occur through local actions.



SOURCE: PSRC, VISION 2050

¹ Including shoreline properties that contain a mix of land and water, the study area is 5,069 acres.

Shoreline Master Program, Land Use Code, Port of Tacoma Comprehensive Scheme for Harbor Improvements, Land Use and Transportation Plan, the Puyallup Tribe of Indians Land Claims Settlement and Cooperation Agreement, Puyallup Tribe of Indians Comprehensive Land Use Plan, Pierce County Countywide Planning Policies, the Puget Sound Regional Council VISION 2050 and Multicounty Planning Policies, and the Growth Management Act. Each of these documents is summarized below.

City of Tacoma

City of Tacoma Comprehensive Plan (2015/2022)

The City of Tacoma’s Comprehensive Plan (“One Tacoma”) was adopted in 2015 and amended through 2022. It is the community’s vision for Tacoma in 2040. Tacoma’s growth target is for 127,000 new residents and 97,000 new jobs by 2040. The Comprehensive Plan includes goals and policies to accommodate this future growth, and plans for development and improvement.

The Port of Tacoma/Tideflats and the Nalley Valley area are identified in the Comprehensive Plan as two of Tacoma’s manufacturing and industrial employment areas.

Manufacturing + Industrial Areas

Manufacturing/Industrial areas are in the low, flat areas along the Port/Tideflats and the Nalley Valley. The manufacturing and distribution sectors concentrate here. Manufacturing/industrial centers are intended to be well-served by major transportation facilities including rail, interstate and transit systems. Many of the industrial uses are land intensive in nature. To preserve land at these centers, large retail, residential or nonrelated office uses are discouraged.

—*Urban Form Element*

The Comprehensive Plan’s Future Land Use Map indicates the study area’s future land use designation is primarily Heavy Industrial, with a small area on the southwest side (between I-5 and SR 509) designated as Light Industrial. See **Exhibit 3-1**.

Heavy Industrial

This designation is characterized by higher levels of noise and odors, large-scale production, large buildings and sites, extended operating hours, and heavy truck traffic. This designation requires access to major transportation corridors, often including heavy haul truck routes and rail facilities.

Commercial and institutional uses are limited and residential uses are generally prohibited.

(Corresponding Zoning: M-2 Heavy Industrial District; PMI Port Maritime & Industrial District)

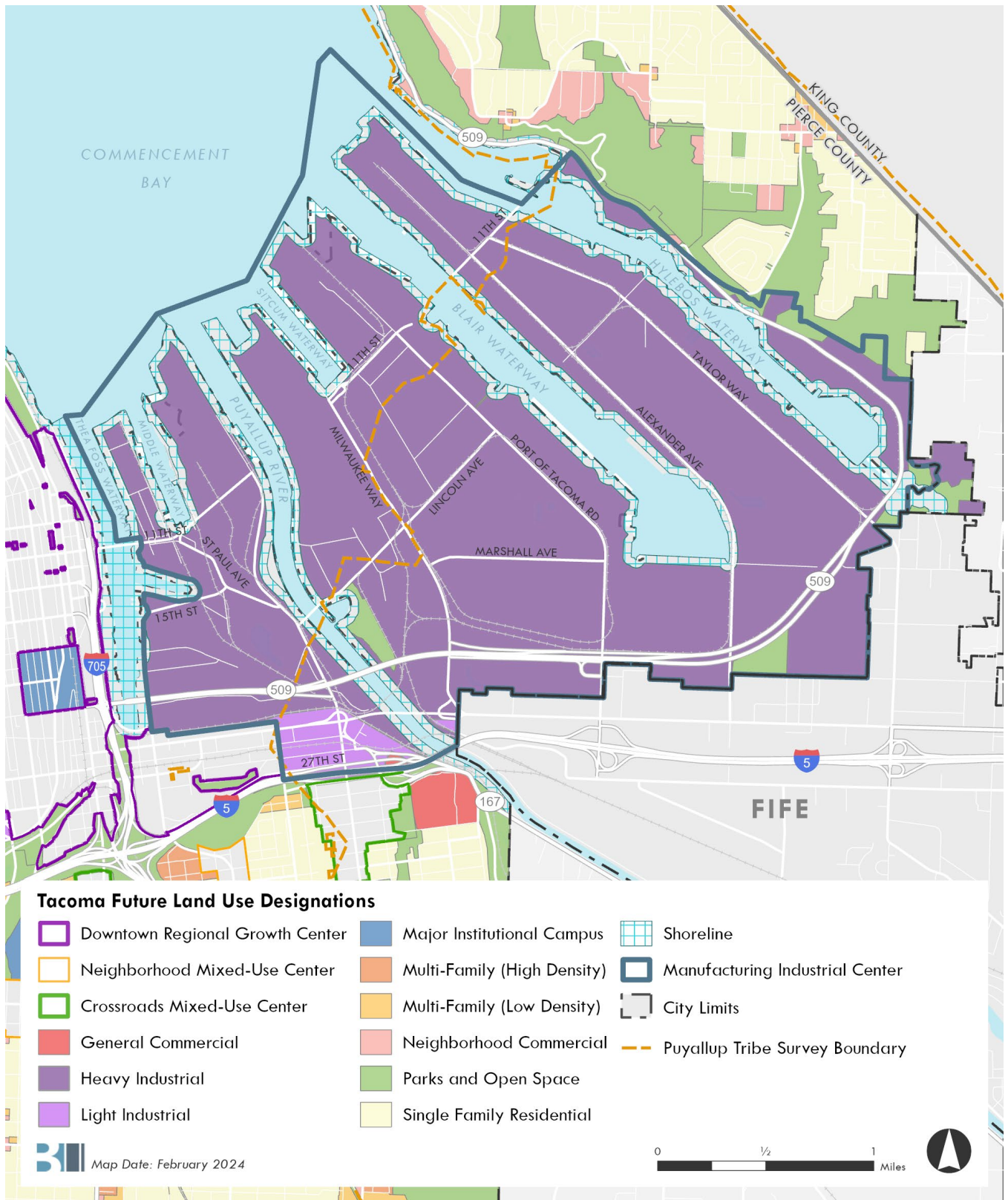
—*Urban Form Element*

Light Industrial

This designation allows for a variety of industrial uses that are moderate in scale and impact, with lower noise, odors and traffic generation than heavy industrial uses. This designation may include various types of light manufacturing and warehousing and newer, clean and high-tech industries, along with commercial and some limited residential uses. These areas are often utilized as a buffer or transition between heavy industrial areas and less intensive commercial and/or residential areas. (Corresponding zoning: M-1 Light Industrial District)

—*Urban Form Element*

In 2002, the Puget Sound Regional Council designated the study area a regional Manufacturing/Industrial Center (MIC). Consistent with VISION 2050 and this regional designation, the Comprehensive Plan designates the study area, in the Container Port Element (CPE) as a Manufacturing/Industrial Center (MIC) – a location with unique characteristics that should serve as a long-term and growing employment center.



SOURCE: City of Tacoma 2022, BERK 2024

EXHIBIT 3-1 Future Land Use Map of the Study Area

The various elements of the Comprehensive Plan include a wide range of policies to protect and enhance the predominant industrial activities within the Port of Tacoma. Other policies provide direction on leveraging the area's strengths and assets, protecting and restoring habitat, increasing public access to the shoreline, as well as establishing measures to buffer industrial and non-industrial areas. Some examples of these policies follow:

Policy DD-7.6 Encourage new development to optimize the range of benefits from solar and renewable resources, tree canopy, green roofs, and building design.

Policy DD-9.2. Improve the interface between non-residential activities and residential areas, in areas where commercial or employment areas are adjacent to residential zoned land.

Policy DD-9.3. Use land use and other regulations to limit and mitigate impacts, such as odor, noise, glare, air pollutants, and vibration that the use or development of a site may have on adjacent residential or institutional uses, and on significant fish and wildlife habitat areas.

Policy DD-9.5. Protect non-industrial zoned parcels from the adverse impacts of activities on industrial zoned parcels.

Policy DD-9.6. Buffer between designated Manufacturing/Industrial Centers and adjacent residential or mixed-use areas to protect both the viability of long-term industrial operations and the livability of adjacent areas.

Policy DD-11.2. Limit development in or near areas prone to natural hazards where practicable, using the most current hazard and climate change-related information and maps.

Policy DD-11.3. Encourage development approaches that will enhance the ability of people, wildlife, natural systems, and property to withstand and recover from a natural disaster or other major disturbance.

Policy DD-11.4. Encourage development, building, and infrastructure design that reduces urban heat island effects.

GOAL EN-1. Ensure that Tacoma's built and natural environments function in complementary ways and are resilient to climate change and natural hazards.

Policy EN-1.3. Consider the impacts of climate change and the risks to the city's environmental assets in all phases of planning, programming and investing.

Policy EN-1.27. Assess the risks and potential impacts on both City government operations and on the community due to climate change, with regard to social equity.

Policy EN-1.29. Protect processes and functions of Tacoma’s environmental assets (wetlands, streams, lakes) in anticipation of climate change impacts.

Policy EN-1.30. Promote community resilience through the development of climate change adaptation strategies. Strategies should be used by both the public and private sectors to help minimize the potential impacts of climate change on new and existing development and operations, include programs that encourage retrofitting of existing development and infrastructure to adapt to the effects of climate change.

Policy EN-3.21. Encourage protection of habitat improvement project sites and cleanup sites in perpetuity.

Policy H-4.4. Facilitate the expansion of a variety of types and sizes of affordable housing units, and do so in locations that provide low-income households with greater access to convenient transit and transportation, education and training opportunities, Downtown Tacoma, manufacturing/industrial centers, and other employment areas.

GOAL EC-2. Increase access to employment opportunities in Tacoma and equip Tacomans with the education and skills needed to attain high quality, living wage jobs.

Policy EC-6.19. Provide industrial land and encourage investment in necessary services that support industrial business retention, growth and traded sector competitiveness as a West Coast trade and freight hub, a regional center of diverse manufacturing and a widely accessible base of living wage jobs, particularly for underserved and underrepresented people.

Policy EC-6.20. Strictly limit Comprehensive Plan Map amendments that convert industrial land and consider the potential for amendments to otherwise diminish the economic competitiveness or viability of prime industrial land.

Policy EC-6.21. Protect and preserve sufficient land use capacity for water-dependent and related industrial uses within the city’s industrial shorelines.

Policy EC-6.22. Maintain properties currently developed with industrial users and strive to offset the reduction of development capacity with the addition of prime industrial capacity that includes consideration of comparable site characteristics.

Policy EC-6.23. Pursue regional capital improvement opportunities to provide a competitive advantage for Tacoma’s industrial districts and ensure that industrial districts have the necessary infrastructure and capacity to support businesses engaged in activities such as transportation, logistics and international trade.

Policy EC-6.24. Coordinate with the Port to market and recruit businesses to vacant and undeveloped Port-owned properties.

Policy EC-6.25. Take advantage of trade relationships established by the Port of Tacoma to promote business attraction and expansion.

Policy EN-4.6. Enhance native vegetation along wetlands, rivers, streams and lakes. The City may require new planting of native vegetation and/or removal of non-native species to restore ecological functions of riparian buffers where such activities will enhance the corridor's function.

Policy EN-4.10. Ensure that plans and investments are consistent with and advance efforts to improve water quality in rivers, streams, marine waters, floodplains, groundwater and wetlands. This includes reducing toxics, bacteria, temperature, metals and sediment pollution. Consider water quality related health impacts on all Tacomans.

Policy P-8.7. Port of Tacoma Public Access Plan. In 2013 the Port Commission adopted a public access plan to identify specific needs and opportunities to provide public shoreline access. The plan will guide Port actions to meet the City of Tacoma's Shoreline Master Program (SMP) requirements for the Port to provide public access to shorelines.²

Policy PFS-5.7. Identify and implement infrastructure improvements which enhance the viability and attractiveness of manufacturing/industrial centers and stimulate growth of new and existing manufacturing and industrial businesses.

As required by state law (RCW 36.70A.085), the City adopted a Container Port Element (CPE) in its Comprehensive Plan in 2014. Consistent with state requirements, this CPE provides specific policy guidance to protect the long-term function and viability of the core port and port-related industrial areas within the city, while providing for effective buffers and transitions to surrounding non-industrial uses along the edge of the core. The element also is meant to protect Commencement Bay.

The CPE also includes economic development policies to promote continued economic vitality; natural environment policies to support continued preservation of the environment; capital facilities policies to ensure adequate facilities and services are provided within and beyond the Core Area; and transportation policies to ensure continued efficient freight access and mobility.

Goals and policies in the CPE are organized into two sections to address (1) the Core Area and (2) the Industrial/Commercial Buffer

² The Port of Tacoma Public Access Plan is an agreement to provide shoreline public access in lieu of the shoreline regulations.

Area, also called a Transition Area. Goals and policies for the Core Area identify an area in which cargo activities are the primary use and focus on protecting port-related cargo and industrial uses and rail-related uses within this area. Goals and policies for Industrial/Commercial Buffer Areas identify an area immediately adjacent to the Core Area and provide for a compatible Industrial/Commercial Buffer for the larger surrounding area.

Exhibit 3-2 shows the Core Area, which contains the current port, current port-related cargo and industrial uses, and those areas recognized by both the City and the Port as likely to be needed for these uses within the next 20 years. The designated Core Area consists of the following areas:

- Existing Port Maritime Industrial (PMI) zoning designation.
- Those portions of the S-9 and S-10 shoreline districts adjacent to the PMI and Heavy Industrial (M2) zoning designations.

The Industrial/Commercial Buffer Area consists of the following areas:

- Existing Heavy Industrial (M2) and Light Industrial (M1) zoning designations.

The following Comprehensive Plan policies in the CPE are intended to make sure that Core Area is preserved now and in the future for port maritime and related industrial uses while respecting the rights of all property owners (City of Tacoma 2022). The goals of the CPE address several supporting topics for a successful, sustainable port and maritime area including growth and vitality of the industrial area, environmental enhancement, provision of emergency services, and multimodal transportation.

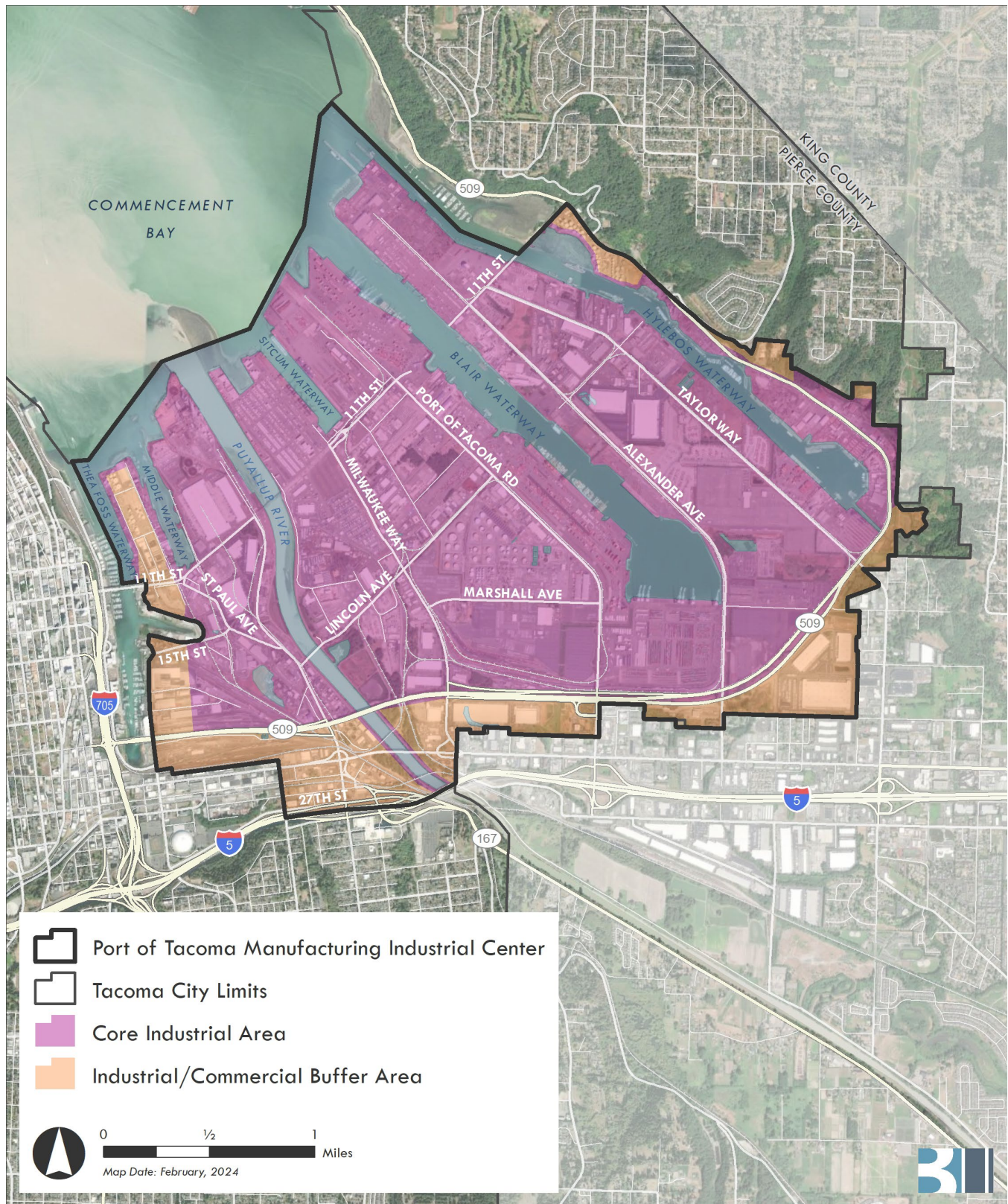
Core Area Policies

CP-1.1: Port and Port-Related Cargo and Industrial Uses.

Prioritize, protect, and preserve existing and planned port uses, port-related container and industrial uses and rail-related uses. Uses should consist primarily of cargo port terminal, port-related container and industrial activity, compatible manufacturing, industrial-related office, cargo yard, warehousing, transportation facilities, and other similar uses.

CP-1.2: Port and Port-Related Cargo and Industrial Land.

Prohibit uses that would negatively affect the availability of land for the primary port and port-related cargo and industrial function of the Core Area. Encourage aggregation of industrial land for future development as cargo port terminals and supporting uses.



SOURCES: City of Tacoma 2021; BERK 2024

EXHIBIT 3-2 Container Port Core and Industrial/Buffer Area (CPE)

CP-1.3: Incompatible Core Area Uses. Clearly identify and prohibit uses that are entirely incompatible with the Core Area uses. Examples may include those that attract people to the area for non-industrial purposes or that would be incompatible with typical industrial area impacts (noise, truck movement, etc.). These may include residential, general retail, temporary lodging or other similar uses.

CP-1.4: Land Use Buffers. Reduce the potential for land use conflicts between industrial development and surrounding nonindustrial uses by providing for adequate Industrial/Commercial Buffer areas, and clear public commitment to continuation of Port and port-related cargo and industrial uses in the designated Core Area.

CP-1.5: Core Area Boundary. Do not allow unrelated uses to gradually encroach on the Core Area through incremental development and modifications of the Core Area boundary. Consider boundary adjustments only in collaboration with the Port of Tacoma and as part of a comprehensive review of long-term port and port-related cargo and industrial land needs.

CP-1.6: Noise, Odor, and Visual Character. In the Core Area, allow for localized impacts associated with industrial activities, including noise, odor and visual character, that are appropriate and expected in heavy industrial areas but would not be allowed in other parts of the city. Noise and odor may be associated with transportation and manufacturing facilities. Visual character may include outdoor storage, relatively large building mass and impervious surface area. While localized impacts are permitted, continue to require Core Area industrial uses to be developed in a manner that protects the environment and preserves public health and safety from a citywide and regional perspective.

CP-1.7: Collaboration. Continue to work in close collaboration with the Port of Tacoma to ensure that port and port related cargo and industrial uses remain viable and that land use development along the edges of the Core Area is thoughtfully planned to avoid land use conflicts and incompatibility. Consider collaborative efforts to develop landscape and street standards that recognize the special working character of the Core Area.

CP-1.8: Public Service Standards. Within the Core Area the Port should assume a greater role in setting level of service and concurrency standards as established in the Public Facilities and Services Element.

CP-1.9: Maritime Industrial Planning. In order to ensure that the Core Area continues to serve future port needs, encourage the Port of Tacoma to develop and periodically update a comprehensive long-range maritime development program that assesses future cargo market demand, developing technologies, geographic

constraints and other factors affecting future intermodal cargo opportunities, and land and capital investment necessary to permit Tacoma to continue to serve port and port-related cargo and industrial needs.

Industrial/Commercial Buffer Area

The CPE includes goals and policies addressing the function of the Buffer Area, and the need for standards to ensure compatibility with the activity levels and physical character of adjacent less-intensive uses. Industrial uses in the Buffer are considered compatible with maritime industrial uses in the Core Area.

Goal CP-2. Establish an Industrial/Commercial Buffer Area around the Core Area that will protect the continued viability of the Core Area while providing for a compatible Industrial/Commercial Buffer to development in the larger surrounding area.

CP-2.1: Industrial/Commercial Buffer Area Collaboration. Work in collaboration with adjacent jurisdictions, including Pierce County and the City of Fife, to ensure a good Industrial/Commercial Buffer from the Core Area to larger surrounding areas.

CP-2.2: Industrial/Commercial Buffer Area Function. In general, natural buffers, such as change in topography, vegetated areas and water bodies are preferred as a means to buffer and separate incompatible uses. The Industrial/Commercial Buffer Area designation is needed only where the existing geography does not provide an effective buffer. Ensure that unrelated uses in the Industrial/ Commercial Buffer Area are not allowed to gradually encroach on the Core Area boundary. The Industrial/Commercial Buffer Area should remain of sufficient size to provide a long-term buffer for the Core Area.

CP-2.3: Industrial/Commercial Buffer Area Uses. Development standards for industrial and commercial activities in the Industrial/Commercial Buffer Area should ensure compatibility with the activity levels and physical character of adjacent less intensive community character.

CP-2.4: Retention of Industrial Uses. Recognizing the importance of industrial activity to the local and regional economy, industrial uses in the Industrial/Commercial Buffer Area should be preserved and promoted. Industrial uses, including non-water related industry, is compatible with and can support maritime industrial uses in the Core Area, as well as contributing to the region's economy as a whole.

CP-2.5: Incompatible Industrial/Commercial Buffer Area Uses. While the Industrial/Commercial Buffer Area provides for a wider range of uses than the Core Area, incompatible uses that would be

impacted by the potential noise, odor and visual character of industrial areas should continue to be prohibited. This may include residential or other sensitive uses.

CP-2.6: Industrial/Commercial Buffer Area Character. Establish development or performance standards to allow for continued viability of the Industrial/Commercial Buffer Area, while protecting the livability of adjacent areas.

Additional CPE Goals

The CPE also includes goals and policies addressing economic growth, environmental quality, multimodal transportation and intermodal connections, and others, as noted below:

Goal CP-3. Promote the continued growth and vitality of port and port-related industrial activity.

Policy CP-3.3. Consider coordinating an industrial development workforce program for local citizens. Act as a facilitator between businesses, educational institutions, trade associations and residents in order to reduce the workforce development burden of individual businesses and expand employment opportunities for citizens.

Goal CP-4. Work in partnership with the Port of Tacoma and other property owners to promote protection, restoration and enhancement of native vegetative cover, waterways, wetlands and buffers.

Policy CP-4.3. Consider development of measures, such as LID development standards, energy efficient lighting technologies, and transportation design features, to reduce greenhouse gas emissions in the port area.

Goal CP-5. Provide, protect and preserve the capital facilities and essential public services needed to support activities within and beyond the Core Area.

Goal CP-6. Identify, protect and preserve the transportation infrastructure and services needed for efficient multimodal movement of goods within and between the Core Area, Industrial/Commercial Buffer Area, and the regional transportation system.

City of Tacoma Subarea and Implementation Plans

The Tideflats study area is adjacent to two Downtown areas with subarea plans. The North Downtown Subarea Plan includes the entire west bank of the Thea Foss Waterway and directly abuts the MIC along the shoreline portions of the east bank from E 11th Street south to around E 15th Street. The South Downtown Subarea Plan covers that area south of the North Downtown Subarea Plan, including the shoreline area on both banks of the Thea Foss Waterway. See

Exhibit 3-3. These two subarea plans are adopted as elements in Comprehensive Plan Book Two.

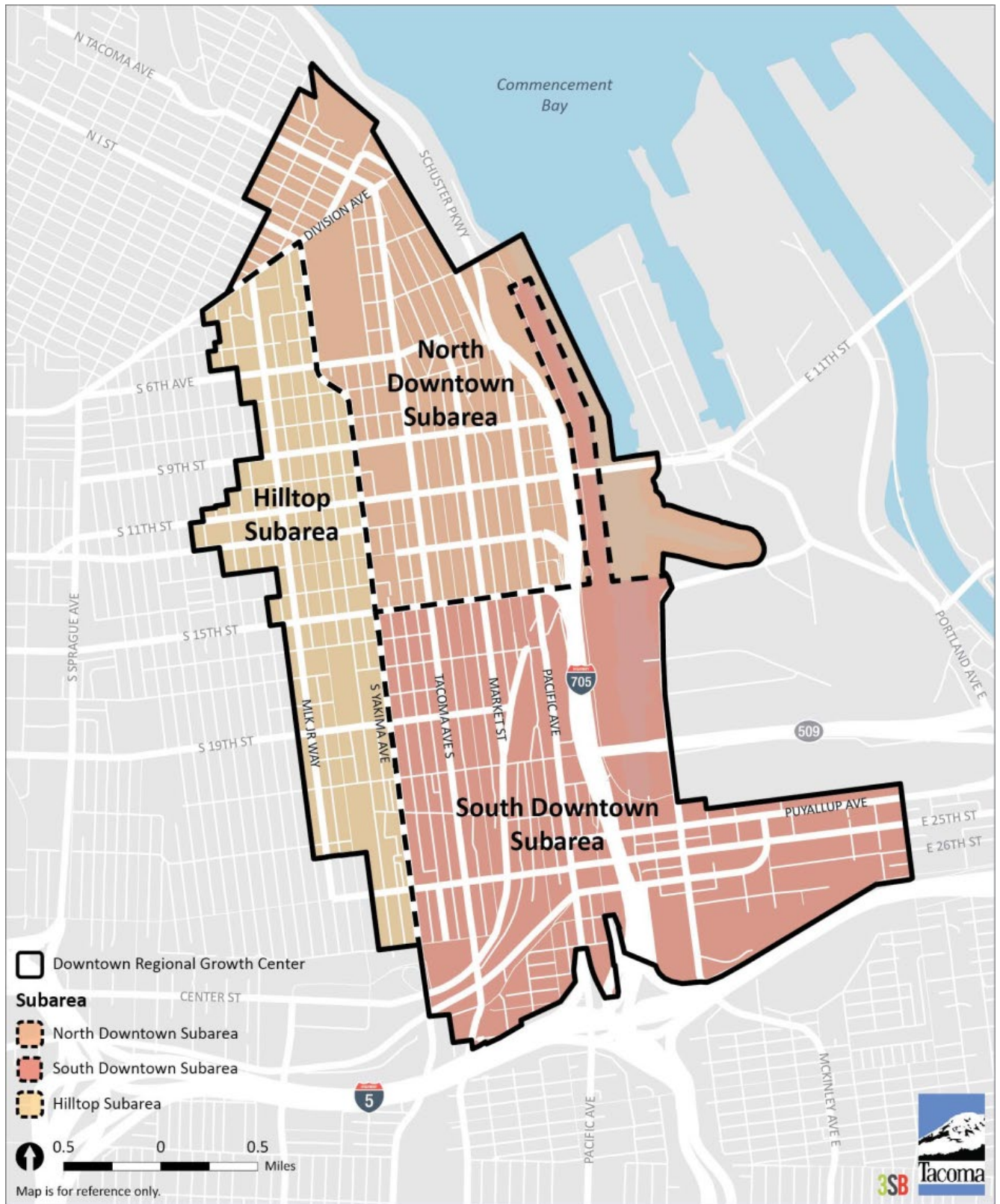
North Downtown Subarea Plan (2014)

The *North Downtown Subarea Plan* covers northern Downtown, northern Thea Foss Waterway, and land to the east of the Thea Foss Waterway, as well as the Murray Morgan (11th Street) bridge (City of Tacoma 2014). Redevelopment in the North Downtown Subarea is intended to include infill projects in the commercial core, open spaces and streetscapes that increase livability and walkability, and strengthened physical and visual connections to the Thea Foss Waterway and Commencement Bay.

Land use actions in the subarea plan focused on remediation of brownfield sites that are identified as high-priority redevelopment sites in the North Downtown Subarea, the expansion of the Reduced Parking Area, and to pilot a Transfer of Development Rights (TDR) program and live/work opportunities. The subarea plan recognizes the industrial character of the east bank of the Thea Foss Waterway with the presence of warehouses, docks, and marine-related businesses. No land use changes are contemplated for this area.

South Downtown Subarea Plan (2013)

The *South Downtown Subarea Plan* includes portions of the Tideflats area including the southern stretch of Thea Foss Waterway, land to the east of Thea Foss Waterway, and the vicinity of Puyallup Avenue and E 26th Avenue west of E G Street as well as the SR 509 bridge (City of Tacoma 2013). Similar to the North Downtown Subarea Plan, the South Downtown Subarea Plan envisions the expansion of the Reduced Parking Area, a pilot TDR program, live/work opportunities, and street improvements to enhance walkability. The subarea plan's policy framework includes strategies, including developing a closer relationship to transit such as the Link light rail, and advancing the vision for the Thea Foss Waterway. The subarea plan envisions a range of policies nested under the strategy to advance the vision for the Thea Foss Waterway including a public access system with a continuous esplanade along the shoreline, opportunities for mixed-use development along the shoreline, completion of a park at the southeast end of the waterway, creating a pedestrian and bicycle trail loop along both sides of the Foss, and ways to activate public space such as public boat launches. However, the subarea plan also supports the retention and enhancement of all characteristics of the waterway that support marine and boating activities.



SOURCE: City of Tacoma 2023

EXHIBIT 3-3 Downtown Subareas

City of Tacoma Historic Preservation Plan

The study area is part of the ancestral lands of the Puyallup Tribe of Indians. The study area continues to include lands located within the Puyallup Tribe of Indians Reservation and Tribal-owned parcels. Since the 1880s, the tideflats have been used for maritime and industrial businesses.

An implementation strategy of the Comprehensive Plan consists of Tacoma’s Historic Preservation Plan. It was adopted in 2011. The plan’s focus is “the preservation and active use of cultural resources to enhance the City’s quality of life, economic vibrancy and environmental sustainability.” Relevant goals and policies include:

- **HP-1.** Preserve archaeological resources as part of Tacoma’s rich history.
- **HP-2.** Integrate Tacoma’s historic resources into community planning efforts.
- **HP-3.** Promote preservation’s role in community sustainability efforts.

City of Tacoma Shoreline Master Program (2022) and Public Access Alternatives Plan (2010)

Land Use and Environment Designations

The City of Tacoma Shoreline Master Program (SMP) is a result of Washington State legislation requiring all jurisdictions to adequately manage and protect shorelines of the state. The SMP establishes goals and guidelines for uses within 200 feet of the Ordinary High Water Mark (OHWM); this 200-foot-wide area is termed the “shoreline jurisdiction.” The SMP goals relate to the use, restoration, conservation, economic development, public access, history/culture/education, recreation, and water quality within the shoreline jurisdiction. The Tacoma Shoreline Master Program includes goals, policies, and development regulations for all shoreline areas including Commencement Bay and its waterways, the Narrows, and Wapato Lake.

The SMP establishes a goal related to land use within shorelines areas in the city (City of Tacoma 2021, 41–42):

Land Use Goal: To preserve and develop shorelines in a manner that allows for an orderly balance of uses.

Specific objectives include:

1. Encourage new water-dependent, water-related, and water-enjoyment uses in priority order.

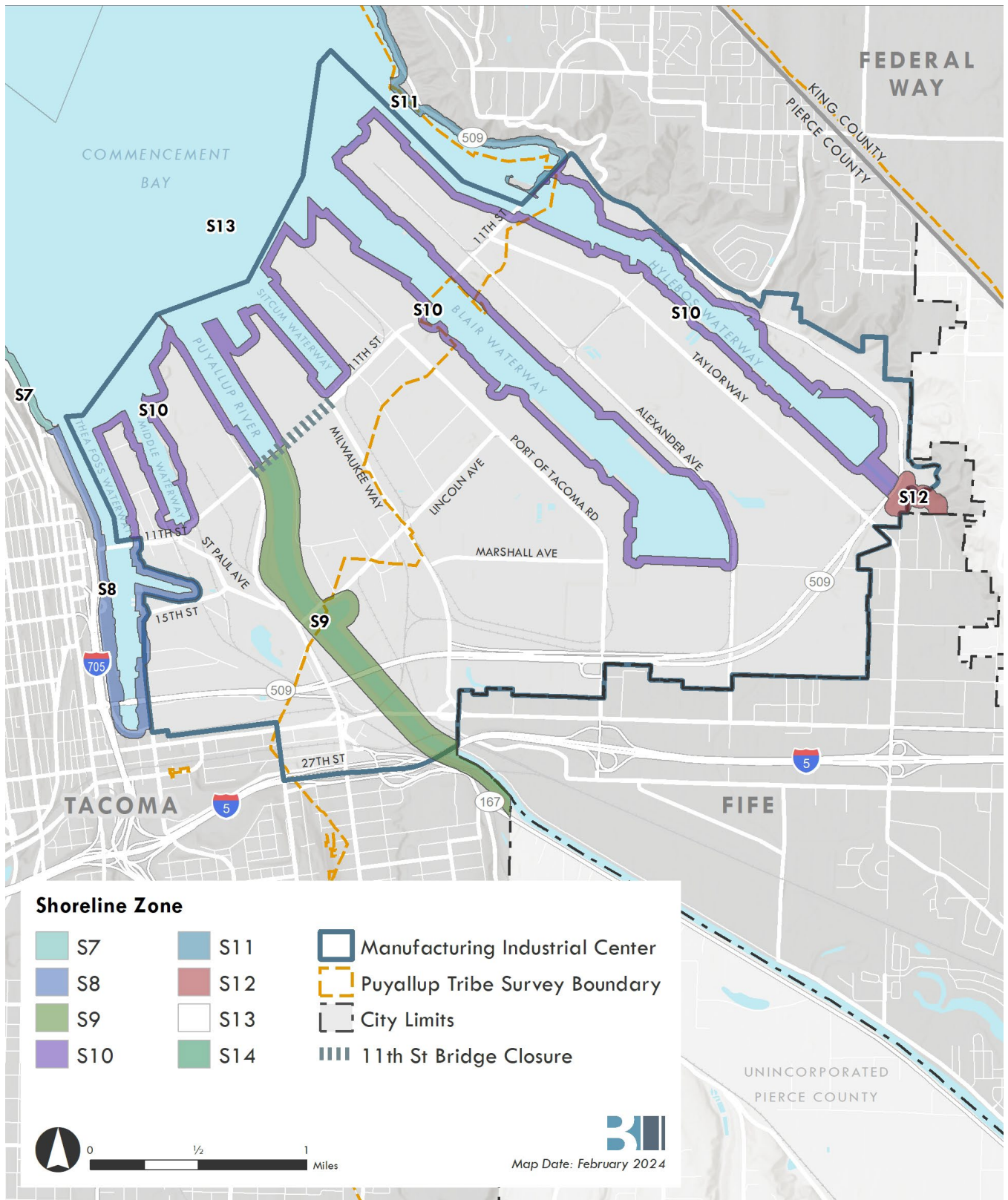
2. Support the City Comprehensive Plan policies as they relate to the shoreline.
3. Implement regulations and standards in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property.
4. Encourage mixed use developments that include and support water-oriented uses and provide a substantial public benefit consistent with the public access and ecological restoration goals and policies of the Act.
5. Balance the location, design, and management of shoreline uses throughout the city to prevent a net loss of shoreline ecological functions and processes over time.
6. Encourage shoreline uses and development that enhance shoreline ecological functions and/or processes or employ innovative features that further the purposes of this Program.
7. Discourage new non-water-oriented industrial uses from locating inside shoreline jurisdiction, in order to reserve adequate land supply to serve future water-dependent and water-related industrial uses.
8. Promote and encourage uses and facilities that require and take advantage of the deep water of Commencement Bay and the associated Waterways.
9. Support the long-term and widespread economic contribution of our international container ports and related industrial lands and transportation systems and ensure that container ports continue to function effectively alongside vibrant city waterfronts.
10. Encourage shoreline uses and development that enhance and/or increase public access to the shoreline.

The City's SMP establishes distinct shoreline environmental designations and shoreline districts. Each shoreline environmental designation corresponds to a specific shoreline zoning district and operates as a policy designation. The shoreline environmental designations determine which uses are allowed, which are conditional, and which are prohibited in shoreline areas. Shoreline environmental designations are further identified by specific shoreline district designations and may also have additional shoreline district-specific development standards based on the type of use or location. The Tideflats study area includes three shoreline environmental designations: High intensity (HI) (S10), Urban

Conservancy (UC) (S9), and Natural (N) (S12); and abuts others: Aquatic (A) (S13) and Downtown Waterfront (DW) (S8). See **Exhibit 3-4**.

Within or near the Tideflats study area, shorelines are designated S7, S8, S9, S10, and S11 Shoreline Districts. Future permitted use activities within each district, as stated in the SMP, are described below.

- **S7 – Schuster Parkway Shoreline District (HI).** The intent of this district “is to allow development of deep water terminal and light industrial facilities, support and retain water dependent commodity export business(es), and to preserve the character and quality of life in adjoining residential areas, school and park properties.”
- **S8 – Thea Foss Waterway (DW).** The intent of this district “is to improve the environmental quality of Thea Foss Waterway; provide continuous public access to the Waterway; encourage the reuse and redevelopment of the area for mixed-use pedestrian-oriented development, cultural facilities, marinas and related facilities, water-oriented commercial uses, maritime activities, water-oriented public parks and public facilities, residential development, and waterborne transportation; and to allow new water-oriented industrial uses where appropriate.”
- **S9 – Puyallup River (UC).** The intent of this district “to encourage recreational development of the riverfront, ecological restoration activities that restore historic floodplain processes and functions, while allowing industrial development of adjacent upland areas, and to encourage continued preservation of Clear Creek, its associated wetlands, and related ecosystems. Permitted industrial uses will develop and operate in a manner that is compatible with shoreline ecological functions.” The Puyallup Tribe of Indians has jurisdiction over these trust lands at the mean high-water mark upstream from the Survey Boundary (Lincoln Street bridge).
- **S10 – Port Industrial (HI).** The intent of this district “is to allow the continued development of the Port Industrial Area, with an increase in the intensity of development and a greater emphasis on terminal facilities within the City.”
- **S-11 – Marine View Drive (UC).** The intent of the S-11 Marine View Drive Shoreline District is to encourage the development of water-related parks, open space, and recreation facilities, to allow development of marinas and related facilities, water-oriented commercial uses, and residential uses that are compatible with the existing shoreline processes and functions and that result in a net gain of shoreline functions over time.
- **S12 – Hylebos Creek (N).** The purpose is “to protect and restore the historic functions of Hylebos Creek and achieve a net gain of shoreline function over time.”



SOURCES: City of Tacoma 2020; BERK 2020, 2024

EXHIBIT 3-4 Shoreline Districts Map – City of Tacoma, 2020

- **S13 – Marine Waters of the State(A).** The intent of this district “is to maintain these water bodies for the use by the public for navigation, commerce and recreation purposes and to manage in-water structures in a consistent manner throughout the City’s shorelines.”

These shoreline environmental designations and specific district areas are adopted by ordinance and codified as Title 19 Shoreline Master Program in the Tacoma Municipal Code, which is discussed in the next section of this chapter.

Shoreline Public Access

The City’s Public Access Alternatives Plan (PAAL) is a stand-alone implementation plan associated with the SMP that articulates the vision for public access to the shoreline and recreation. Several existing public access areas are within the study area (City of Tacoma 2010, 17–21):

- Existing viewpoint at the Port of Tacoma Observation Tower.
- Existing public marinas, private marinas, and hand boat launches on the northern shore of the Hylebos Waterway and eastern shore of the Thea Foss Waterway (including at Waterway Park).
- Existing habitat observation points on the southern shore of the Blair Waterway (the Lincoln Avenue public street end) and northern shore of the Puyallup River (near the wetlands by the Lincoln Avenue bridge).

The PAAL identifies other potential projects on the Thea Foss Waterway, on Marine View Drive, and on Port Industrial shorelines in areas that will not interfere with port operations or cause public safety concerns. These projects include a pedestrian walkway on the Thea Foss Waterway, motorized and non-motorized boat launches, additional habitat observation points, improved public access/viewing signage, and new viewpoints (City of Tacoma 2010, 25–29).

Another guiding document to public access is an interlocal agreement between the City and Port allowing a flexible approach to shoreline public access provision developed in 2013. It allows a fee-in-lieu methodology and public access fund and identifies priority public access locations.

Shoreline Cultural and Environmental Resources Policies

The Shoreline Master Program includes a number of objectives and policies that guide how growth and development should adapt to sea

level rise, conserve and enhance environmentally sensitive areas, and protect and recognize cultural resources.

3.7.2: Archaeological, Historic, and Cultural Resources, Objectives.

1. Recognize the importance of the waterfront to Tacoma’s history and character.
2. Recognize the high probability that development may encounter archaeological, historic and cultural resources, and ensure that appropriate measures are taken to protect, preserve, and enhance sites and features of archaeological, historic, and cultural value or significance.
5. Where appropriate, make access to such sites available to parties of interest, provided that access to such sites must be designed and managed in a manner that gives maximum protection to the resource.
6. Provide opportunities for education related to archaeological, historical, and cultural features where appropriate and incorporated into public and private programs and development.

6.1.1: Shoreline Use, Policy 7. Evaluate sea level rise data and consider sea level rise risks and implications in the development of regulations, plans, and programs.

6.2.1: Site Planning, Policy 8. Development should be located, designed, and managed both to minimize potential impacts from sea level rise and to promote resilience in the face of those impacts, by such actions as protecting wetland and shoreline natural functions, incorporating green infrastructure, retaining mature vegetation, and considering soft-shore armoring wherever possible.

6.4.1: Critical Areas and Marine Shoreline Protection, Policy 8. Protect natural processes and functions of Tacoma’s environmental assets (wetlands, streams, lakes, and marine shorelines) in anticipation of climate change impacts, including sea level rise.

City of Tacoma Land Use Designations and Zoning Districts

The Land Use Regulatory Code, Title 13 of the Tacoma Municipal Code (TMC), is the key regulatory mechanism that implements the goals and policies of the Comprehensive Plan. The study area is predominantly zoned Port Maritime and Industrial (PMI) and Heavy Industrial (M-2) zoning districts. Roughly 57% or 2,898 acres in the study area are zoned PMI. A smaller proportion (roughly 11% or 575 acres) are zoned M2. Smaller areas (103 acres) to the periphery

are zoned Light Industrial (M-1). The SMP shoreline environment designations and associated zoning apply to land within 200 feet of the OHWM. Roughly 30% or 1,493 acres within the study area are subject to the SMP. More detailed information on the SMP is provided in the next section. See **Table 3-1**.

TABLE 3-1 Zoning Districts and Shoreline Designation by Acreage – Study Area, 2020

Zoning Description	Zoning District	Shoreline Environmental Designation	Acres
Port Maritime and Industrial	PMI		2,897.6
Heavy Industrial	M2		575.9
Light Industrial	M1		103.0
Shoreline District J:	S		1,492.5*
<i>Thea Foss Waterway</i>	S8	<i>Downtown Waterfront</i>	3.0
<i>Puyallup River</i>	S9	<i>Urban Conservancy</i>	171.8
<i>Port Industrial</i>	S10	<i>High Intensity</i>	446.4
<i>Hylebos Creek</i>	S12	<i>Natural</i>	12.1
<i>Waters of the State</i>	S13	<i>Aquatic</i>	859.1
Total			5,069.6

SOURCES: City of Tacoma 2020; BERK 2020

* The shoreline zones include a mix of land and water.

Port Maritime and Industrial District. This zoning district is intended to allow all industrial uses and uses that are not permitted in other zoning districts; barring uses that are prohibited by City Charter. The Port of Tacoma facilities, facilities that support the Port’s operations, and other public and private maritime and industrial activities make up a majority of the uses in this district. This area is characterized by:

- Proximity to deepwater berthing.
- Sufficient backup land between the berths and public rights-of-way.
- 24-hour operations to accommodate regional and international shipping and distribution schedules.
- Raw materials processing and manufacturing.
- Uses that rely on the deepwater berthing to transport raw materials for processing or manufacture, or transport of finished products.
- Freight mobility infrastructure, with the entire area served by road and rail corridors designed for large, heavy truck, and rail loads.

The PMI District is characterized by heavy truck traffic and higher levels of noise and odors than found in other districts. Expansion beyond current PMI District boundaries should be considered carefully, as such expansion

may decrease the distance between incompatible uses. Expansion should only be considered contiguous to the existing PMI District.

M2 – Heavy Industry District. The M2-Heavy Industrial District designation is intended to allow most industrial uses. The impacts of these industrial uses include extended operating hours, heavy truck traffic, and higher levels of noise and odors. This classification is only appropriate inside Comprehensive Plan areas designated for medium and high-intensity uses.

M1 – Light Industrial District. This district is intended as a buffer between heavy industrial uses and less-intensive commercial and/or residential uses. This classification is only appropriate inside Comprehensive Plan areas designated for medium and high-intensity uses.

The Municipal Code includes development standards for each of the zoning districts described above, including allowed and prohibited uses, building envelope standards (building height limits, lot area, width and coverage, and setbacks), building design standards, landscaping and/or buffering standards, as well as lighting, parking, loading, and signage standards and requirements. See **Table 3-2** for a summary of key standards and **Table 3-3**, below, for use regulations by zone. The PMI zone and M2 zone are similar in the range of allowed uses and development standards. M1 is intended as a buffer zone, and uses and standards differ with the PMI and M2 zones accordingly.

TABLE 3-2 District Development Standards – Study Area, 2020

Zoning Description	Min. Lot Area (sf)	Min. Lot Width (ft)	Max Lot Coverage (%)	Max. Height (ft)	Min. Setback Front (ft)	Min. Setback Side (ft)	Setback Rear (ft)
Port Maritime and Industrial (PMI)	N/A	N/A	None	*100'	0	0	0
Heavy Industrial (M2)	N/A	N/A	None	*100'	0	0	0
Light Industrial (M1)	N/A	N/A	None	75'	0	0	0

SOURCES: City of Tacoma 2020; BERK 2020

* 100 feet, unless such building or structure is set back on all sides 1 foot for each 4 feet such building or structure exceeds 100 feet in height. Certain specified uses and structures are allowed to extend above height limits, per Sections 13.06.010.E and 13.06.080.

In November 2017, the Tacoma City Council adopted the Tideflats Interim Regulations, Amended Ordinance No. 28470, which include the following elements:

- Category 1: Expanded public notification of heavy industrial use permits.

- Category 2: Temporary prohibition of new non-industrial uses in the Port of Tacoma Manufacturing Industrial Center.
- Category 3: Temporary prohibition of new residential development along Marine View Drive and NE Tacoma slopes.
- Category 4: Temporary prohibition on certain types of new heavy industrial uses.

On November 16, 2021, the Tacoma City Council adopted Amended Ordinance No. 28786, replacing the Tideflats Interim Regulations. See the land use regulations by zone matrix adjustments in **Table 3-3**. The code fulfilled the categories above addressing:

- Public notification requirements for permits and land use amendments, including expanded notification for heavy industrial uses to a distance of 2,500 feet.
- Conversion of industrial lands to non-industrial uses.
- Encroachment of residential developments on industrial lands.
- High-impact uses removed from code.
- New cleaner fuel facilities are permitted subject to an enhanced SEPA environmental checklist; tanks converted to cleaner fuels cannot convert back to petroleum use.
- Expanded cleaner fuel facilities permitted for range of clean fuel products, and storage can be expanded 15% beyond petroleum tankage.
 - A greenhouse gas (GHG) analysis would be conducted as part of new or expansion of Renewable Fuel Production Facilities beyond baseline capacities. And greenhouse gas mitigation at a facility level.
- Petroleum fuel facility projects for maintenance, safety, security, or required to meet regulatory changes allowed.
- National security petroleum fuel facilities allowed.
- Projects that have undergone environmental review and mitigated impacts allowed.
- Financial assurance required.

The new regulations are part of Alternative 1 (No Action). These regulations were advanced ahead of the Subarea Plan and are a basis behind the analysis of Alternative 4. The old regulations are shown in the table with ~~strikethrough~~ and the new regulations are shown with underline formatting.

Zoning Districts – Study Area

Exhibit 3-5 provides a map of zoning districts in the study area.

TABLE 3-3 Use Regulations by Zone – Study Area, 2021

Zone	Permitted Uses	Prohibited Uses
PMI	<ul style="list-style-type: none"> • Adult retail and entertainment • Agricultural uses (with Conditional Use Permit)* • Airport (with Conditional Use Permit)* • Ambulance services • Brewpub • Building material and services • Business support services • <u>Chemical manufacturing, processing and wholesale distribution (with Conditional Use Permit)*</u> • <u>Cleaner Fuel Infrastructure(with Conditional Use Permit, subject to special use standards)*</u> • Commercial parking facility • Communication facility • Craft production • Drive-through with any permitted use • Eating and drinking • Fueling station • Heliport (with Conditional Use Permit) • Home occupation • Industry, heavy • Industry, light • Marijuana processor, producer, and researcher • <u>Mining and quarrying (legally permitted only; no new)*</u> • Microbrewery/winery • Office • Parks, recreation, and open space (<u>low intensity/destination</u>)* • Passenger terminal • Personal services • Petroleum fuel facility (facilities legally permitted)* • Port, terminal, and industrial; water-dependent or water-related (as defined in Chapter 13.10) • Public safety and public service facilities • Religious assembly • Repair services • Retail (limited to 7,000 sf)* • Self-storage (specific requirements apply) • Seasonal sales (Temporary Use) • Surface mining (with Conditional Use Permit)* • Temporary uses • Transportation/freight terminal 	<ul style="list-style-type: none"> • Adult family home • <u>Agricultural uses*</u> • <u>Airport*</u> • Animal sales and service • Assembly facility • Carnival • Cemetery/internment services • <u>Chemical manufacturing, processing and wholesale distribution (explosives, fertilizer, and petrochemical manufacturing)*</u> • <u>Coal facility*</u> • Commercial recreation and entertainment • Confidential shelter • Continuing care retirement community • Correctional facility • Cultural institution • Day care, family • Day care center • Detention facility • Detoxification center • Dwelling, accessory (ADU) • Dwelling, single-family detached • Dwelling, two-family • Dwelling, three-family • Dwelling, multiple family • <u>Dwelling, townhouse*</u> • Emergency and transitional housing • Extended care facility • Foster home • Funeral home • <u>Golf course*</u> • Group housing • Hospital • Hotel/motel • Intermediate care facility • <u>Juvenile community facility*</u> • Live/work • Lodging house • Mobile home/trailer court • Nursery

Zone	Permitted Uses	Prohibited Uses
	<ul style="list-style-type: none"> • Urban horticulture • Utilities • Vehicle rental and sales • Vehicle service and repair • Vehicle service and repair, industrial • Vehicle storage • Warehouse/storage • Wholesale or distribution • Wireless communication facility • Uses not prohibited by City Charter and not prohibited herein (<u>with Conditional Use Permit</u>) 	<ul style="list-style-type: none"> • <u>Parks, recreation, and open space (high intensity/destination)*</u> • Petroleum fuel facility (new)* • Research and development industry • Residential care facility for youth • Residential chemical dependency treatment facility • <u>Retail*</u> • Retirement home • School, public or private • Short-term rental • <u>Smelting *</u> • Staffed residential home • Student housing • Theater • Work/live • Work release center
M2	<ul style="list-style-type: none"> • Adult retail and entertainment • Agricultural uses (with Conditional Use Permit) • Airport (with Conditional Use Permit)* • Ambulance services • Animal sales and service • Assembly facility • Brewpub • Building material and services • Business support services • <u>Chemical manufacturing, processing and wholesale distribution (with Conditional Use Permit)*</u> • <u>Cleaner Fuel Infrastructure(with Conditional Use Permit, subject to special use standards)*</u> • Commercial parking facility • Commercial recreation and entertainment (Conditional, <u>indoor only*</u>) • Communication facility • Craft production • Day care center • Detoxification center (Conditional) • Drive-through with any permitted use • Eating and drinking • Fueling station • Helipoint (with Conditional Use Permit) • Home occupation • Industry, heavy (<u>excluding smelters</u>)* • Industry, light 	<ul style="list-style-type: none"> • <u>Airport*</u> • Adult family home • Carnival • Cemetery/internment services • <u>Chemical manufacturing, processing and wholesale distribution (explosives, fertilizer, and petrochemical manufacturing)*</u> • <u>Coal facility*</u> • Confidential shelter • Continuing care retirement community • Correctional facility • Cultural institution • Day care, family • Detention facility • Dwelling, accessory (ADU) • Dwelling, single-family detached • Dwelling, two-family • Dwelling, three-family • Dwelling, multiple family • <u>Dwelling, townhouse*</u> • Emergency and transitional housing • Extended care facility • Foster home • Funeral home • <u>Golf course*</u> • Group housing • Hospital

Zone	Permitted Uses	Prohibited Uses
	<ul style="list-style-type: none"> • Marijuana processor, producer, and researcher • Microbrewery/winery • <u>Mining and quarrying (legally permitted only; no new)*</u> • Nursery • Office • Marijuana retailer • Parks, recreation and open space (<u>low intensity/destination permitted; high intensity/destination by Conditional Uses Permit</u>)* • <u>Passenger terminal</u> • Personal services • Petroleum fuel facility (facilities legally permitted)* • Public safety and public service facilities • Religious assembly • Repair services • Research and development industry • Retail • Self-storage • Seasonal sales (Temporary Use) • Surface mining (with Conditional Use Permit) • Temporary uses • Transportation/freight terminal • Urban horticulture • Utilities • Vehicle rental and sales • Vehicle service and repair • Vehicle service and repair, industrial • Vehicle storage • Warehouse/storage • Wholesale or distribution • Wireless communication facility • Work release center* • Uses not prohibited by City Charter and not prohibited herein 	<ul style="list-style-type: none"> • Hotel/motel • Intermediate care facility • Juvenile community facility • Live/work • Lodging house • <u>Marijuana retailer*</u> • Mobile home/trailer court • Nursery • Petroleum fuel facility (new)* • Port, terminal, and industrial; water-dependent or water-related (as defined in Chapter 13.10) • Residential care facility for youth • Residential chemical dependency treatment facility • Retirement home • School, public or private • Short-term rental • <u>Smelting*</u> • Staffed residential home • Student housing • Theater • Work/live • <u>Work release center*</u>
M1	<ul style="list-style-type: none"> • Adult family home (<u>Conditional</u>,* prohibited in certain bldgs.) • Adult retail and entertainment • Agricultural uses (with Conditional Use Permit)* • Airport (Conditional) • Ambulance services • Animal sales and service • Assembly facility • Brewpub 	<ul style="list-style-type: none"> • <u>Airport</u> • <u>Agricultural uses*</u> • Cemetery/internment services • <u>Chemical manufacturing, processing and wholesale distribution*</u> • <u>Cleaner fuel infrastructure*</u> • <u>Coal facility*</u> • Cultural institution • Dwelling, accessory (ADU)

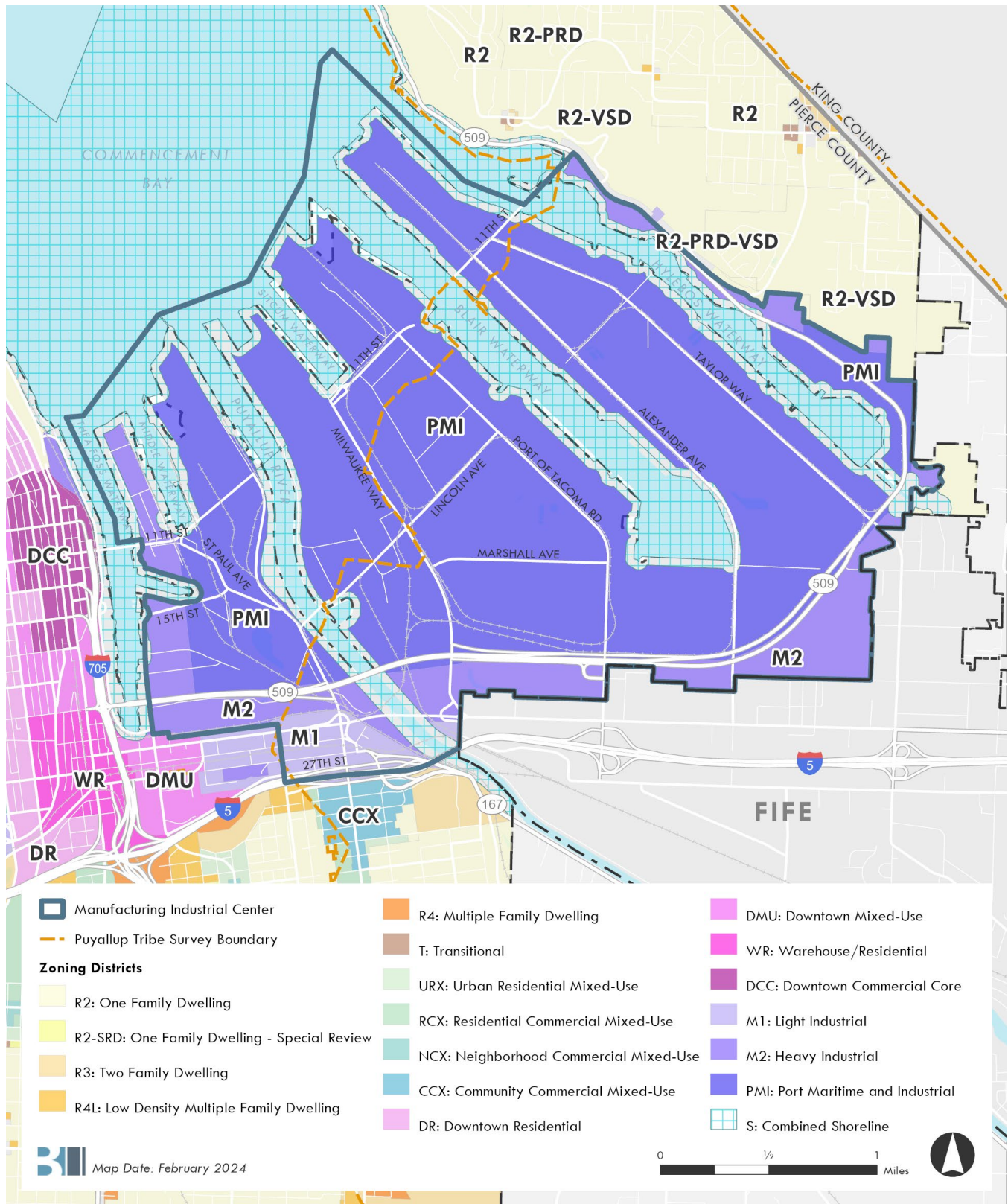
Zone	Permitted Uses	Prohibited Uses
	<ul style="list-style-type: none"> • Building material and services • Business support services • Carnival • Commercial parking facility • Commercial recreation and entertainment (Conditional) • Communication facility • Confidential shelter • Continuing care retirement community (Conditional)* • Correctional facility (Conditional) • Craft production • Day care, family • Day care center • Detention facility (Conditional) • Detoxification center (Conditional) • Drive-through with any permitted use • Dwelling, accessory (ADU) (Conditional,* subject to addl. requirements contained in 13.06.080 A) • Dwelling, single-family (Conditional)* • Dwelling, townhouse (Conditional)* • Dwelling, two-family (Conditional)* • Dwelling, multifamily (Conditional)* • Eating and drinking • Emergency and transitional housing subject to addl. requirements contained in 13.06.080 A • Extended care facility (only in certain types of bldgs.) • Foster home (only in certain types of bldgs.) • Fueling station • Group housing (Conditional,* only in certain types of bldgs.) • Heliport (with Conditional Use Permit) • Home occupation • Hotel/motel • Industry, heavy • Industry, light • Intermediate care facility (Conditional,* only in certain types of bldgs.) • Juvenile community facility* • Live/work (Conditional)* • Marijuana processor, producer, and researcher • Microbrewery/winery • Mining and quarrying (legally permitted)* • Nursery • Office • Marijuana retailer 	<ul style="list-style-type: none"> • Dwelling, single-family detached • Dwelling, two-family • Dwelling, three-family • Dwelling, multiple family • Foster home • Funeral home • Golf course* • Hospital • Lodging house • Mining and quarrying (new)* • Mobile home/trailer court • Petroleum fuel facility* • Port, terminal, and industrial; water-dependent or water-related (as defined in Chapter 13.10) • Short-term rental • Smelting* • Staffed residential home

Zone	Permitted Uses	Prohibited Uses
	<ul style="list-style-type: none"> • Parks, recreation, and open space (<u>low intensity/destination permitted; high intensity/destination by Conditional Uses Permit</u>)* • Passenger terminal • Personal services • Public safety and public service facilities • <u>Residential care facility for youth</u>* • <u>Residential chemical dependency treatment facility</u>* • Retail (limited to 7,000 square feet) • Religious assembly • Repair services • Research and development industry • Retail • Retirement home (<u>Conditional</u>,* only allowed in certain types of bldgs.) • Self-storage • Seasonal sales (Temporary Use) • School, public or private (<u>Conditional</u>) • <u>Staffed residential home (Conditional)</u>* • <u>Student housing (Conditional)</u>* • Surface mining (with Conditional Use Permit) • Temporary uses • Transportation/freight terminal • Theater • Urban horticulture • Utilities • Vehicle rental and sales • Vehicle service and repair • Uses not prohibited by City Charter and not prohibited herein • Vehicle service and repair, industrial • Vehicle storage • Warehouse/storage • Wholesale or distribution • Work/live • Work release center (Conditional) • Wireless communication facility 	

SOURCE: City of Tacoma 2021

NOTES: * See [Amended Ordinance No. 28786](#).

In M-1 districts, adult family homes are permitted only within residential or institutional buildings in existence on December 31, 2008, the effective date of adoption of this provision, or when located within a mixed-use building where a minimum of one-third of the building is devoted to industrial or commercial use.



SOURCES: City of Tacoma 2020; BERK 2021, 2024

EXHIBIT 3-5 Zoning Districts – Study Area, 2020

Port of Tacoma

Port of Tacoma Comprehensive Scheme of Harbor Improvements (2017)

Port districts in Washington are required to prepare and update a Comprehensive Scheme of Harbor Improvements (CSHI) that describes the development goals for the Port (RCW 53.20, Harbor Improvements). CSHI documents are conceptual or programmatic and do not provide specific design details about individual projects. The CSHI also defines the geographic boundaries within the Port District where facilities development and industrial improvements will occur. The CSHI can be periodically amended to expand the geographic limits of the Port District to support specific improvement projects.³

Port of Tacoma's 2021–2026 Strategic Plan (2021)

The *Port of Tacoma's 2021–2026 Strategic Plan*, adopted in 2021, aims to grow the region's economy and support maritime trade. The five foundational goals include: economic vitality, environmental leadership, organizational success, transportation advocacy, and community connections.

City of Fife Comprehensive Plan and Zoning

Fife's Comprehensive Plan contains a Land Use Element that supports a variety of land uses while protecting the environment and encouraging quality design:

- **Goal 1.** Maintain a reasonable and sustainable land use pattern as growth occurs while discouraging sprawl.
- **Goal 2.** Maintain land use policies and patterns that adequately protect and preserve environmental systems and amenities including wetlands, floodplain areas, shorelines, seismic hazard areas, and fish and wildlife habitats.
- **Goal 3.** Provide for a balance between residential, and commercial/industrial growth.
- **Goal 10.** Maintain and update as necessary development/design standards for commercial and industrial areas.
- **Goal 12.** Encourage the development of quality industrial areas through master planning.
- **Goal 13.** Where appropriate, encourage a mixture of appropriate commercial, industrial, and office park uses along the SR 167 freeway corridor in compliance with all City concurrency requirements and policies.

³ See: https://s3.us-west-2.amazonaws.com/portoftacoma.com-if-us-west-2/prod/2021-04/2017_comprehensive_scheme_of_harbor_improvements.pdf.

- **Goal 14.** Encourage the development of a downtown area as a center of commercial, civic, cultural and recreational activities.

The primary area of growth and development for the City of Fife will be in support of the future light rail station provided by Sound Transit, located in the “City Center.” The City of Fife, as confirmed by the Pierce County Regional Council, has designated the City Center as a Center of Local Importance (COLI) pursuant to the Pierce County Countywide Planning Policies. This area is focused on the new Sound Transit station and encourages mixed-use high-density development and a pedestrian-oriented transportation system connecting to transit. This is where the City of Fife will accommodate most of its residential growth over the planning period. As part of its 2024 Comprehensive Plan Periodic Update and in preparation for the development of the light rail station, the City of Fife will be adopting a new City Center Element, a planned action EIS, and new development regulations encouraging the desired mixed-use/transit-oriented development (TOD) land use pattern. The City Center is bisected by the I-5/54th Avenue interchange, one of the primary entrances to the Port of Tacoma. The northwest corner of Fife’s City Center, and the southeast corner of the MIC boundary touch each other at the intersection of 12th Street E and 52nd Avenue E, in Fife.

In addition to the City Center, the City of Fife’s Future Land Use Map contains sufficient area of industrial zoning, and maintains a core residential area with smaller neighborhoods immediately adjacent to the Port.

Parcels along the southern and eastern edge of the study area are adjacent to the City of Fife boundary.

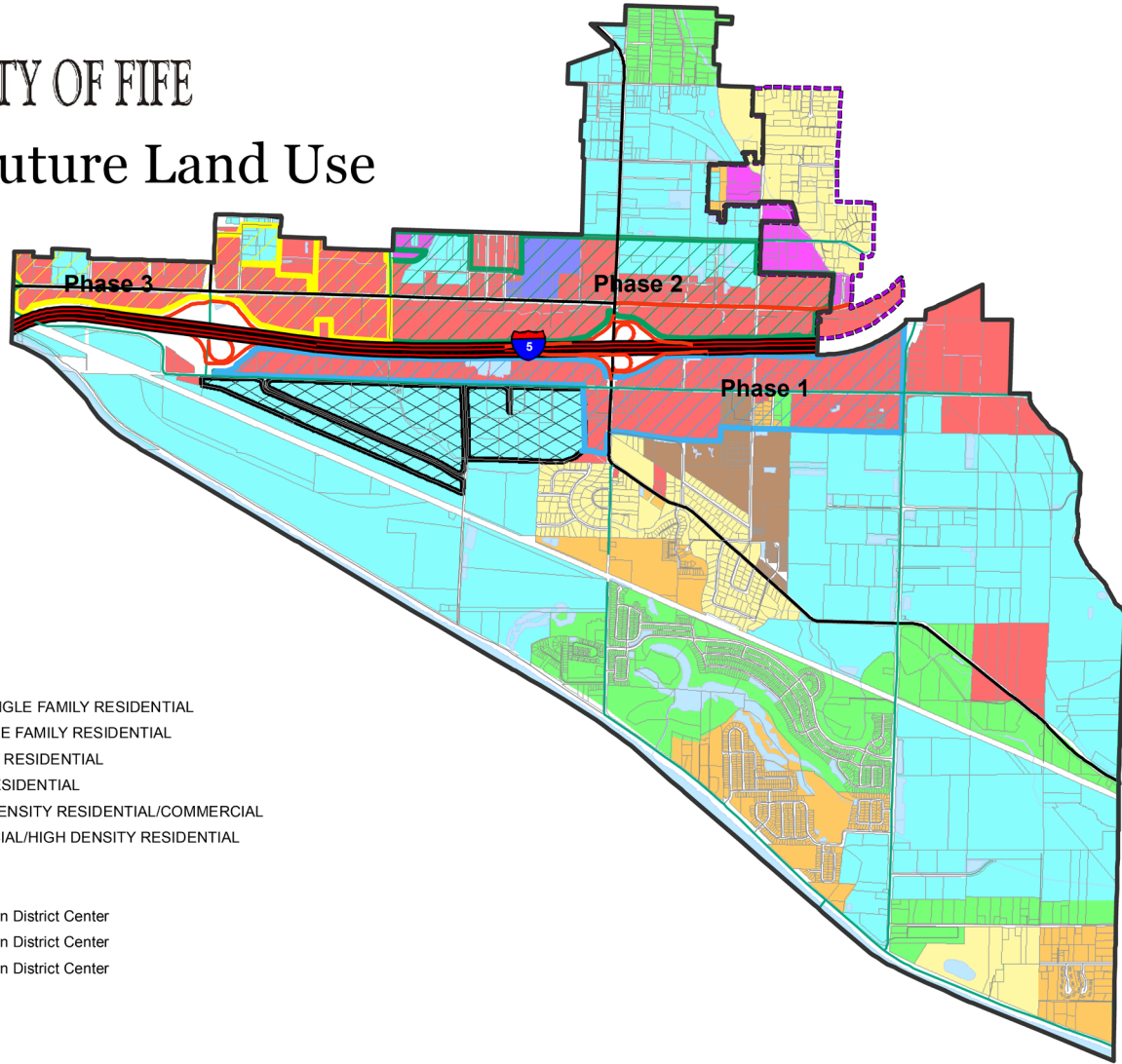
The southern edge is adjacent to the primary business district, which runs east and west along Pacific Highway E. This area contains several commercial establishments that support both Port operations as well as the traveling public, tribal enterprises, scattered industrial uses, small residences (Willows Neighborhood), and underdeveloped land. This area is zoned Regional Commercial, along with some pockets of Industrial, Business Park, and Neighborhood Commercial zoning.

The eastern edge of the study area is adjacent to the 54th Street corridor as well as small portions of the Pacific Highway corridor. This area contains industrial uses and the residential neighborhood known as the Benthien Loop. The zoning in this area is Industrial and Neighborhood Commercial. This is the location where the study area is immediately adjacent to the City Center. See **Exhibit 3-6**.

Scale 1:32000



CITY OF FIFE Future Land Use



Legend

- LOW DENSITY SINGLE FAMILY RESIDENTIAL
- SMALL LOT SINGLE FAMILY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- MIXED MEDIUM DENSITY RESIDENTIAL/COMMERCIAL
- MIXED COMMERCIAL/HIGH DENSITY RESIDENTIAL
- BUSINESS PARK
- INDUSTRIAL
- Phase 1 - Downtown District Center
- Phase 2 - Downtown District Center
- Phase 3 - Downtown District Center
- Retail overlay
- Tax Parcels
- UGA

March 30, 2015 RLP

Map LU-4

SOURCE: City of Fife 2015

EXHIBIT 3-6 City of Fife Future Land Use Map

The City of Fife has identified its City Center as a Center of Local Importance, consistent with Pierce County Countywide Planning Policies.

- **Policy 14.1** Create a vibrant, compact downtown City Center (Center of Local Importance) area that is an inviting place to work, shop, live and socialize.

This area is zoned Regional Commercial and Community Commercial, along with some pockets of Industrial zoning. See **Exhibit 3-7**.

3.1.2 County Policy Framework

Pierce County Countywide Policies

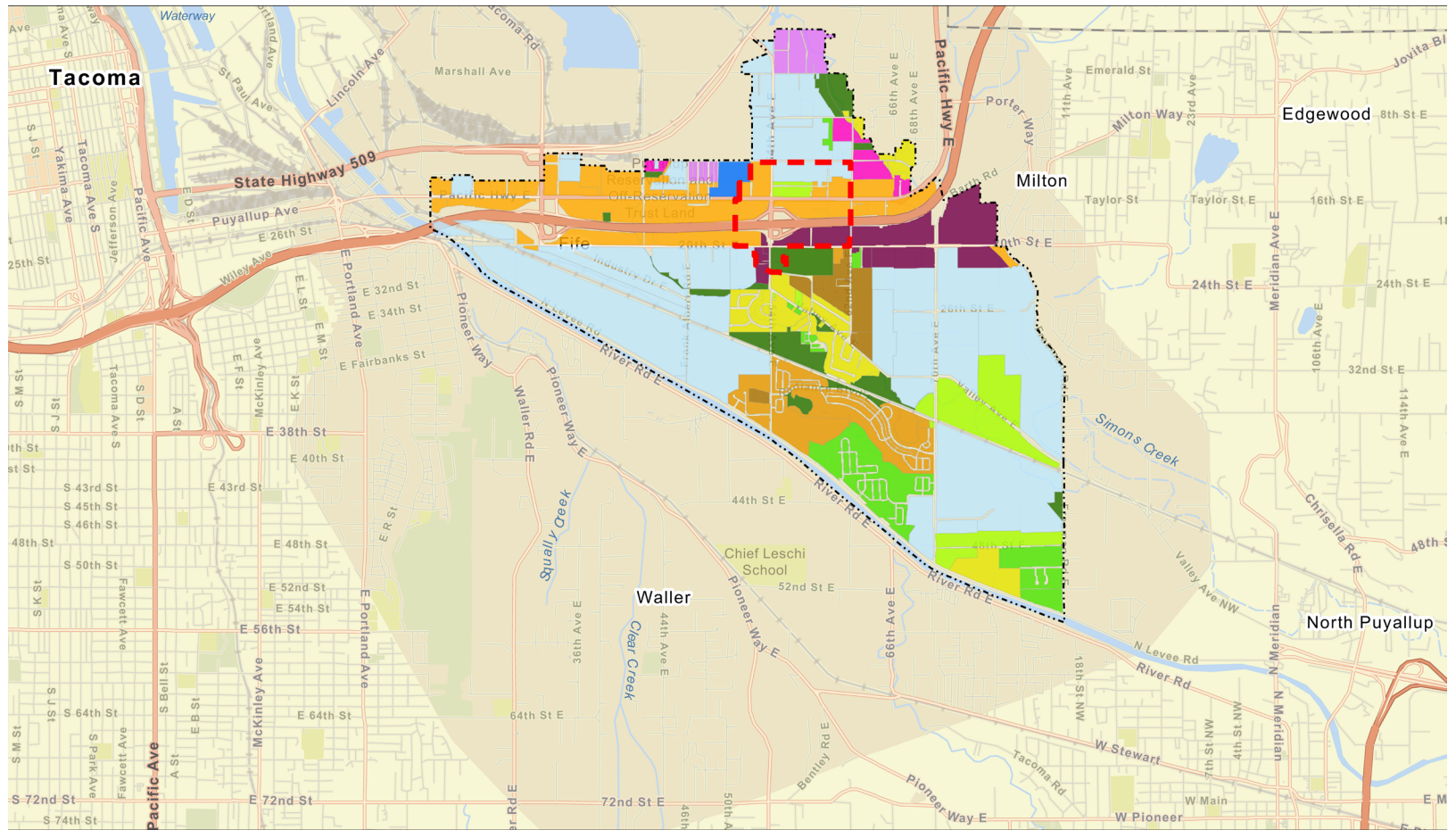
The Pierce County Countywide Planning Policies (CPPs, 2022) direct cities toward a centers strategy, in which urban growth is concentrated in designated regional and local centers, consistent with Tacoma’s Land Use Element and future land use plan.

In the CPPs, policies support prioritizing centers for population growth and public investment. CPPs also reference the following Manufacturing/Industrial Centers that have been adopted into the Regional Growth Strategy for Pierce County: Frederickson, Port of Tacoma, Sumner/Pacific, and *South Tacoma – Candidate Manufacturing/Industrial Center*.

The following policies specifically reference Manufacturing/Industrial Centers:

- C-2.** The purpose of Manufacturing/Industrial Centers is to:
 - 2.1.** Recognize strategically located concentrations of industrial activity as essential resources for the local economy;
 - 2.2.** Protect and leverage critical and difficult-to-replace freight infrastructure;
 - 2.3.** Preserve the industrial land base in the long term;
 - 2.4.** Support family/living wage jobs;
 - 2.5.** Emphasize the importance of freight movement; and
 - 2.6.** Preserve the county’s supply of industrial land.

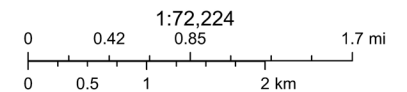
C-4. Manufacturing Industrial Centers (MICs) preserve lands for family-wage jobs in basic industries and trade and provide areas where that employment may grow in the future. MICs form a critical regional resource that provides economic diversity, supports national and international trade, generates substantial revenue for local governments, and offers higher than average wages.



2/6/2024, 8:06:30 PM

City of Fife Zoning Fill

- MEDIUM DENSITY RESIDENTIAL
- REGIONAL COMMERCIAL
- PUBLIC USE/OPEN SPACE
- HIGH DENSITY RESIDENTIAL
- BUSINESS PARK
- COMMUNITY MIXED USE
- NEIGHBORHOOD RESIDENTIAL
- INDUSTRIAL
- SINGLE FAMILY RESIDENTIAL
- NEIGHBORHOOD COMMERCIAL
- SMALL LOT RESIDENTIAL
- COMMUNITY COMMERCIAL
- Center of Local Importance (COLI) – City Center
- Fife City Limits View



City of Tacoma, King County, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS

Web AppBuilder for ArcGIS

City of Tacoma, King County, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS | City of Fife GIS

SOURCE: City of Fife 2023

EXHIBIT 3-7 City of Fife Zoning Map

C-5. Transportation and economic development funds should be prioritized for transportation and infrastructure supporting Centers in Pierce County. Projects that support Regional Growth and/or Manufacturing Industrial Centers (and Candidates), support more than one center, and benefit a variety of user groups will be given higher consideration.

C-17. Jurisdictions should consider incentives for development within Centers, such as:

17.1. Streamlined permitting;

17.2. Financial incentives;

17.3. Density bonuses or transfer of development rights;

17.4. Using SEPA provisions to streamline environmental review; and

17.5. Shared mitigation, such as stormwater detention and joint parking.

C-26. Provisions to achieve targeted employment growth should include:

26.1. Preservation and encouragement of the aggregation of vacant land parcels sized for manufacturing/industrial uses;

26.2. Prohibition of land uses which are not compatible with manufacturing/industrial, manufacturing/industrial supportive, and advanced technology uses;

26.3. Limiting the size and number of offices and retail uses as accessory use and only to serve the needs of employees within a Center; and

26.4. Reuse and/or intensification of the land use consistent with the mix of uses envisioned for the MIC.

C-27. The transportation network within Manufacturing/Industrial Centers should provide for the needs of freight movement and employees by ensuring a variety of transportation modes, such as roads, rail, and various trucking facilities. Nonmotorized facilities and transit services should be creatively provided when it makes sense and is safe, providing the MIC with alternative transportation to single occupancy vehicles (SOVs) and transportation demand management strategies if transit is unavailable or is not feasible.

C-29. The transportation system, including, but not limited to, road, rail, dock, and port terminal, within Manufacturing/Industrial Centers shall be built, protected, and maintained to accommodate existing and future industrial uses.

C-30. All jurisdictions should support transportation capital improvement projects which improve access and movement of goods to, in, and from Manufacturing/Industrial Centers.

C-34. To be designated as a Regional Manufacturing/Industrial Center (MICs), the following criteria shall be met.

- 34.1.** Consistency with specific criteria for Manufacturing/Industrial Centers adopted within the Countywide Planning Policies and the Multicounty Planning Policies;
- 34.2.** Consideration of the Center's location in the County and region, especially relative to existing and proposed transportation facilities;
- 34.3.** Consideration of the total number of Manufacturing/Industrial Centers in the County that are needed over the next twenty years based on projected need for manufacturing/industrial land to satisfy regional projections of demand for manufacturing/industrial land uses;
- 34.4.** Environmental analysis, which shall include demonstration that the jurisdiction is capable of concurrent service to new development; and
- 34.5.** Adoption within the jurisdiction's Comprehensive Plan of the Center's designation and provisions to ensure that job growth targeted to the Manufacturing/Industrial Center is achieved.
- 34.6.** Manufacturing/Industrial Centers shall be characterized by the following:
 - 34.6.1.** Clearly defined geographic boundaries;
 - 34.6.2.** Intensity of land uses sufficient to support alternatives to single-occupancy vehicle use;
 - 34.6.3.** Direct access to regional highway, rail, air, and/or waterway systems for the movement of goods;
 - 34.6.4.** Provisions to prohibit housing; and
 - 34.6.5.** Identified transportation linkages to high-density housing areas.
- 34.7.** Jurisdictions having a designated Manufacturing/Industrial Center shall:
 - 34.7.1.** Plan for and fund capital facility improvement projects which support the movement of goods;
 - 34.7.2.** Coordinate with utility providers to ensure that utility facilities are available to serve such Centers;
 - 34.7.3.** Facilitate land assembly;
 - 34.7.4.** Assist in recruiting appropriate businesses;
 - 34.7.5.** Encourage employers to participate in Commute Trip Reduction program; and

34.7.6. Ensure that land uses in MICs are of the appropriate types to promote employment growth, and that MICs are protected from incompatible adjacent uses, through zoning, buffers, and other mechanisms.

3.1.3 Regional Policy Framework

PSRC VISION 2050

The Puget Sound Regional Council (PSRC) is a Metropolitan Planning Organization (MPO) that develops policies and makes decisions about transportation planning, economic development, and growth management in the four-county (King, Kitsap, Pierce, and Snohomish) central Puget Sound region. PSRC’s duties include prioritizing and distributing federal transportation funds as well as certifying local government comprehensive plans and designated center subarea plans.

PSRC’s VISION 2050 Plan established a long-term land use and transportation framework for the region and designated the Tideflats as one of 10 Manufacturing/Industrial Centers (MIC) in the region. VISION 2050 recognizes MICs as important employment locations that serve both current and long-term regional economic objectives and calls for the provision of infrastructure and services in MICs necessary to serve intensive manufacturing and industrial activity. MICs are given funding priority both for transportation infrastructure and for economic development.

As part of the Regional Growth Strategy included in VISION 2050, the region has been divided into nine different geographies: *Metropolitan Cities, Core Cities, High-Capacity Transit Communities, Cities and Towns, Urban Unincorporated Areas, Rural Areas, Natural Resource Lands, Major Military Installations, and Tribal Lands*. These geographies are used to allocate forecasted population and employment growth by county according to the general type of community.

Under VISION 2050, Tacoma is designated as a “Metropolitan City,” and a greater share of growth is allocated to the city and surrounding area as locations with high-capacity transit. The following policies support the prioritization of centers and specify the roles of MICs in the region.

MPP-RC-7. Give funding priority – both for transportation infrastructure and for economic development – to support designated regional growth centers and manufacturing/industrial centers, consistent with the regional vision. Regional funds are prioritized to regional centers.

MPP-RGS-4. Accommodate the region's growth first and foremost in the urban growth area. Ensure that development in rural areas is consistent with the regional vision and the goals of the Regional Open Space Conservation Plan.

MPP-RGS-10. Focus a significant share of employment growth in designated regional manufacturing/industrial centers.

MPP-DP-50. Protect industrial zoning and manufacturing/industrial centers from encroachment by incompatible uses and development on adjacent land.

MPP-EC-3. Support efforts to retain and expand industry clusters that manufacture goods and provide services for export, increasing capital in the region.

MPP-EC-4. Leverage the region's position as an international gateway by supporting businesses, airports, seaports, and agencies involved in trade-related activities.

MPP-EC-6. Ensure the efficient flow of people, goods, services, and information in and through the region with infrastructure investments, particularly in and connecting designated centers, to meet the needs of the regional economy.

MPP-EC-21. Concentrate a significant amount of economic growth in designated centers and connect them to each other in order to strengthen the region's economy and communities and to promote economic opportunity.

MPP-EC-22. Maximize the use of existing designated manufacturing/industrial centers by focusing appropriate types and amounts of employment growth in these areas and by protecting them from incompatible adjacent uses.

Additionally, VISION 2050 prioritizes compatibility with tribal reservation lands, which interface with the study area.

MPP-RC-4. Coordinate with tribes in regional and local planning, recognizing the mutual benefits and potential for impacts between growth occurring within and outside tribal boundaries.

MPP-DP-7. Consider the potential impacts of development to culturally significant sites and tribal treaty fishing, hunting, and gathering grounds.

MPP-DP-51. Protect tribal reservation lands from encroachment by incompatible land uses and development both within reservation boundaries and on adjacent land.

Regional Center Plans Checklist (2022)

The study area is designated by the PSRC as the Port of Tacoma Manufacturing/Industrial Center (MIC). PSRC's *VISION Consistency Tool for Regional Manufacturing/Industrial Checklist* guides jurisdictions in

updating their center plans, including for Regional Manufacturing Industrial Center Plans (PSRC 2022). The checklist includes the following requirements for Regional Manufacturing Industrial Center Plans with respect to land use.:

- Fully encompass the designated regional center and demonstrate defined boundaries and shape for the center, including consistency with size requirements for regional centers. Industrial Growth Centers should be at least 2,000 acres in size.
- Establish employment growth targets that accommodate a significant share of the jurisdiction's manufacturing/industrial employment growth, in support of VISION 2050 and the Regional Growth Strategy. Policies should demonstrate capacity to accommodate employment growth targets. Industrial Employment Centers should plan for at least 20,000 jobs. Industrial Growth Centers should plan for at least 10,000 jobs.
- Include the share of existing industrial employment. Regional manufacturing/industrial centers must retain a minimum 50% industrial employment. Retain at least 75% of industrially zoned land for core industrial uses.
- Consider how land use policies support access to high-capacity transit stations located in the center. Transit-oriented development in or near manufacturing/industrial centers needs to function differently, with different uses than other centers to maintain a focus on protecting industrial zoning, jobs, and the region's overall economic vitality.
- Encourage transitional buffers between uses to minimize impacts on adjacent land uses.
- Establish design standards that help mitigate aesthetic and other impacts of manufacturing and industrial activities both within the center and on adjacent areas.

According to a 2018 PSRC Regional Centers Framework update, the City is required to plan for and monitor regional growth centers to meet designation criteria by 2025 and every 5 years: A first monitoring review period, scheduled for 2025, will follow the next major comprehensive plan periodic update (due in 2023 and 2024) and will reoccur about every 5 years thereafter. At the first monitoring review in 2025, existing regional growth centers will be expected to fully meet eligibility and designation criteria, similar to new centers.

Regional Centers Framework Update (2018)

In March 2018, after extensive work with members, partners, and the public, PSRC adopted a revised centers framework. The revisions focused on how to support and recognize the region's diverse centers and result in more consistent criteria throughout the region. New

eligibility criteria were defined for centers. Minimum eligibility requirements ensure consistency in centers designation and ensure that new regional growth centers meet the intent of VISION 2050 while allowing for flexibility.

The Regional Centers Framework Update identifies two distinct pathways to designate new manufacturing/industrial centers. Minimum eligibility for regional designation is described in **Table 3-4**. The criteria are expanded to include discussion of appropriate employment type, core industrial zoning, industrial preservation strategies, and regional role. The center pathways may be used to inform future growth planning.

TABLE 3-4 Regional Centers – Industrial Employment and Growth Centers

Industrial Employment Center MIC	Industrial Growth Center MIC
<p>These centers are highly active industrial areas with significant existing jobs, core industrial activity, evidence of long-term demand, and regional role. They have a legacy of industrial employment and represent important long-term industrial areas, such as deep-water ports and major manufacturing. The intent of this designation is to, at a minimum, preserve existing industrial jobs and land use and to continue to grow industrial employment in these centers where possible. Jurisdictions and transit agencies should aim to serve all MICs with transit.</p> <p>Center must meet each the following criteria:</p> <ul style="list-style-type: none"> Existing jobs: 10,000 minimum. Planned jobs: 20,000 minimum. Minimum 50% industrial employment. If MIC is within a transit service district, availability of existing or planned frequent, local, express, or flexible transit service. If MIC is outside a transit service district, documented strategies to reduce commute impacts through transportation demand management strategies consistent with the Regional Transportation Plan Appendix F (Regional TDM Action Plan). Presence of irreplaceable industrial infrastructure.^a At least 75% of land area zoned for core industrial uses.^b Industrial retention strategies in place. Regional role. 	<p>These regional clusters of industrial lands have significant value to the region and potential for future job growth. These large areas of industrial land serve the region with international employers, industrial infrastructure, concentrations of industrial jobs, and evidence of long-term potential. The intent of this designation is to continue growth of industrial employment and preserve the region’s industrial land base for long-term growth and retention. Jurisdictions and transit agencies should aim to serve all MICs with transit.</p> <p>Center must meet each the following criteria:</p> <ul style="list-style-type: none"> Minimum size of 2,000 acres. Existing jobs: 4,000 minimum. Planned jobs: 10,000 minimum. Minimum 50% industrial employment. If MIC is within a transit service district, availability of existing or planned frequent, local, express, or flexible transit service. If MIC is outside a transit service district, documented strategies to reduce commute impacts through transportation demand management strategies consistent with the Regional Transportation Plan Appendix F (Regional TDM Action Plan) At least 75% of land area zoned for core industrial uses. Industrial retention strategies in place. Regional role.

a. Industrial-related infrastructure that would be irreplaceable elsewhere, such as working maritime port facilities, air and rail freight facilities.
 b. Zoning designations dominated by traditional industrial land uses such as manufacturing, transportation, warehousing, and freight terminals. Commercial uses within core industrial zones shall be strictly limited.

3.1.4 State, Tribal, and Federal Policy Framework

Growth Management Act

The Washington State Growth Management Act (GMA) was adopted in 1990 in response to concerns over uncoordinated growth and its impacts on communities and the environment. The GMA includes 15 planning goals to guide its implementation. These goals address the following: (1) encouraging growth in urban areas; (2) reducing sprawl; (3) encouraging multimodal transportation systems; (4) encouraging a variety of housing types, including affordable housing; (5) encouraging economic development; (6) recognizing property rights; (7) ensuring timely and fair permitting processes; (8) protecting agricultural, forest, and mineral lands; (9) retaining and enhancing open space and supporting recreation opportunities; (10) protecting the environment; (11) encouraging citizen involvement in planning processes; (12) ensuring adequate public facilities and services; (13) encouraging historic preservation; (14) planning for adaptation and mitigation of the effects of a changing climate; and (15) implementing the use preferences of the Shoreline Management Act as an element of the plan.

GMA mandates that comprehensive plans include specific chapters, referred to as elements. Required elements include land use, housing, capital facilities, utilities, transportation, economic development, and parks and recreation. The GMA and other state and regional policies provide specific guidance for the contents of these elements. Cities are also allowed to include optional elements in their comprehensive plans such as subarea plans like the proposed Tideflats Subarea Plan.

The entire comprehensive plan, including the required and optional elements, must be internally and externally consistent. Internal consistency means that all elements of a plan are consistent with the future land use map contained in the land use element, and that the different elements are mutually supportive. For instance, the transportation projects outlined in the transportation element must support the land use patterns called for in the land use element. The requirement for external consistency means that the comprehensive plan must be coordinated with adjacent jurisdictions.

The GMA also requires that comprehensive plans address provision of sufficient land capacity to meet growth targets, establishment of level of service (LOS) standards, and public participation. A city must designate adequate land to accommodate 20-year growth forecasts from the Office of Financial Management and Pierce County, based on the requirement to provide sufficient capacity to meet growth targets.

The current planning period for the Comprehensive Plan extends through 2035, but soon Tacoma and other central Puget Sound communities will be planning for 2044. A comprehensive plan must include LOS standards for transportation facilities and may include LOS standards for other types of public facilities as well. The comprehensive planning process must include a public participation program providing for early and continuous opportunities to share input and ideas for the plan and its implementation.

Implementation of comprehensive plans is accomplished largely through development regulations and capital budget decisions. The GMA states that jurisdictions' development regulations and budget decisions must conform to comprehensive plans.

Tacoma's strategy for growth in the One Tacoma Comprehensive Plan is consistent with GMA goals and restricts urban growth to urban areas to prevent sprawl and supports economic development.

Treaty of Medicine Creek: Puyallup Tribe of Indians Reservation (1854, 1857, 1873)

The Puyallup Tribe of Indians Reservation was established in 1854 by the Treaty of Medicine Creek, which is the supreme governing law over the study area. The reservation was enlarged two subsequent times through presidential executive orders in 1857 and 1873. The treaty federally designated several proto-land use types including reserving the lands for hunting, gathering, fishing, and homesteading. The following articles of the Treaty of Medicine Creek outline these uses:

- **Article 3:** The right of taking fish, at all usual accustomed grounds and stations, is further secured to said Indians in common with all citizens of the Territory, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses on open and unclaimed lands [...]
- **Article 5:** To enable the said Indians to remove to and settle upon their aforesaid reservations, and to clear, fence, and break up a sufficient quantity of land for cultivation [...]

Puyallup Tribe of Indians Land Claims Settlement (1990)

A federal appeals court upheld the lower court's ruling in 1984 in the tribe's favor, awarding 12.5 acres of the Port of Tacoma to the Tribe. In 1988, the Tribe, the Port, and numerous other governments and private entities entered into a Land Settlement Agreement, a historic event that resolved a number of land, jurisdictional, and other issues between the parties. President Bush signed the Puyallup Indian

Settlement in 1989, making way for future growth and Port/Tribe cooperation. One of the most significant elements of that agreement was the return of close to 900 acres of land to the Puyallup, including land on the Blair Waterway, which the parties envisioned would be developed by the Tribe as an international marine terminal.

Puyallup Tribe of Indians Comprehensive Land Use Plan (2023)

The Puyallup Tribe of Indians Comprehensive Land Use Plan provides a land use plan and policies intended to guide its planning area (1873 boundaries and greater area) and beyond. Its planning area includes the entire Tideflats study area of this EIS. It includes a map of MIC subareas by their water feature. See **Exhibit 3-8**.

Selected policies include:

Policy 5.2. Work with governments to ensure project cumulative impacts are adequately evaluated and effects of past and current pollution are considered before permits may be issued. **Policy 6.2** Identify the nature and extent of contaminants at potential habitat restoration sites during the planning phase. If found, remediate during the construction phase to prevent the spread of contaminants.

Policy 8.1. Create a conservation zone designation for lands that are protected from development.

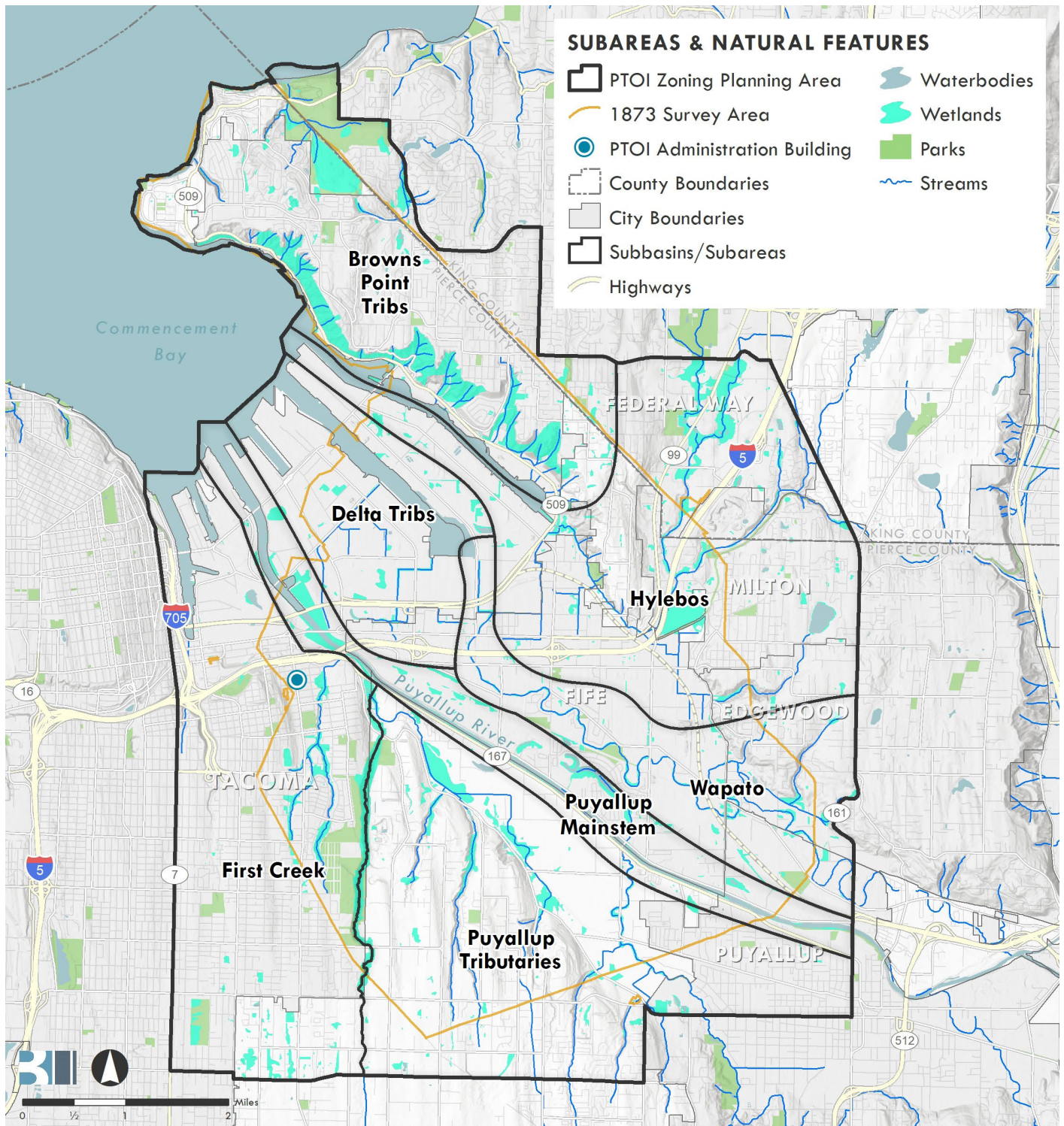
Goal 12.0. Expanded habitat restoration efforts and public education programs address climate change impacts.

Policy 16.4. Study economic development impacts associated with sea level rise in the tideflats.

Policy 19.2. Land use policies should focus development in areas that are already developed to reduce the impacts of development on the natural environment.

Policy 30.4. Maintain involvement and influence on major transportation projects like the Puget Sound Gateway Project SR167 and Tacoma Dome Link Extension, to ensure the Tribal Transportation plans and policies are implemented.

Policy 36.3. Create employment pipelines for Tribal members for jobs at the Port of Tacoma.



SOURCE: Puyallup Tribe of Indians 2023

EXHIBIT 3-8 Puyallup Tribe of Indians Subareas and Natural Features

Puyallup Tribal Codes

As noted above, the study area includes lands located within the Puyallup Tribe of Indians Reservation and Tribal-owned parcels. The Puyallup Tribe operates and administers a set of laws and regulations collectively referred to as the Puyallup Tribal Codes (PTC). Title 15 of the PTC addresses land use with a Zoning Ordinance (Chapter 15.12) that contains district classifications for all lands which exist within the boundaries of the Puyallup Reservation as defined by the Plat Map of the 1873 Survey conducted by the United States General Land Office and filed in 1874 and the Puyallup Land Claims Settlement Act of 1989, Public Law 101-41. In addition, Chapter 15.08 Land Use Consultation Process Ordinance sets out the process for tribal land use decisions and land use decisions by local governments.

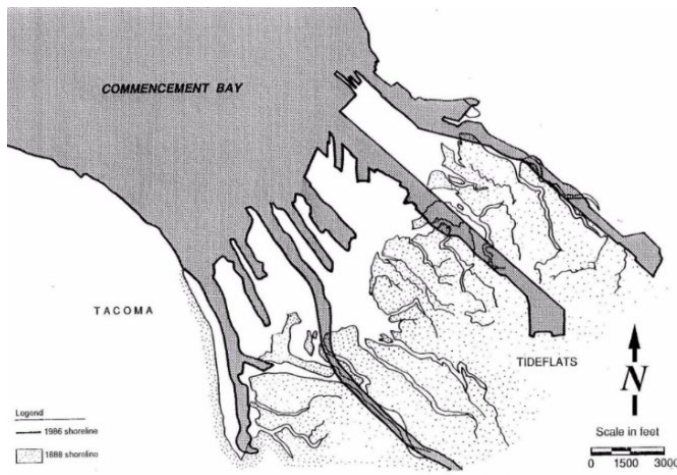
3.1.5 History of Development

The nature of activities in the study area has shifted greatly over the years. The study area is part of the ancestral lands of the Puyallup Tribe of Indians. For centuries, the Puyallup Tribe, with other Native American communities, fished the rivers, hunted in the forest, and lived in the lands along the shores of Puget Sound and the Puyallup-White River watershed, including the study area. In the 1800s, European settlers came to the region with a different view of land use and ownership. In 1854, Territorial Governor Issac Stevens executed the Treaty of Medicine Creek. Various Tribes ceded their claims to land in Washington in return for relatively much smaller land within reservations, hunting and fishing rights, and promises of cash payments. By 1857, the Puyallup Reservation was created and expanded to 18,060 acres. The reservation lay along the Puyallup River and Commencement Bay and included parts of the cities of Tacoma, Fife, and Puyallup, including the study area. The arrival of the transcontinental railroad in the 1880s spurred development in Tacoma, and much of the tribal lands were sold to non-Indian ownership.⁴ The railroad brought thousands of new settlers and new trade, business and port activities to Tacoma.

Starting from this time in the 1880s, the study area has a history of maritime industrial activity. Early uses included lumber and shingle mills, as well as shipyards, flour mills, electrometallurgy, and

⁴ See Puyallup Land Claims Settlement: In 1990, the Puyallup Tribe of Indians in Tacoma accepted a settlement of \$162 million in cash, real estate, and economic development programs in exchange for claims to some 18,000 acres of land on its historic reservation on Commencement Bay. In exchange for abandoning claims to the original reservation, the tribe received 900 acres of waterfront property, a per-capita payment of \$20,000, a trust fund, employment opportunities, and a subsidy to improve the Blair Waterway, including a new bridge.

electrochemical uses. In 1918, the Port of Tacoma was established by Pierce County voters. Starting in 1919, the Port of Tacoma started to build industrial facilities to support local and regional trade. For example, in the 1930s, the Port built a cold storage facility, designed to help farmers in the region safely store and ship their produce. Maritime facilities and activities also took root in the study area in these early years. During World War II (1941), Todd Pacific Shipyards (formerly named Seattle-Tacoma Shipbuilding Company) in the study area became used for military shipbuilding activity (Hoyle 1989). See historic images in **Exhibit 3-9**.



Left image: 1888 shoreline and shoreline modifications in 1986. Right Image, waterfront and 11th Street bridge looking east. Bottom image: A look from Commencement Bay in 1890, with the old Northern Pacific Railroad trestle bridge that crossed the Tideflats with the Tacoma Hotel in the background.

SOURCES: City of Tacoma, Marv Coleman: Department of Ecology Toxics Cleanup Program, and Tacoma Public Library 2020; Washington Department of Historic Preservation 2020

EXHIBIT 3-9 Tideflats Activities in the 1890–1900s

In 1966, the Port dredged and extended the Blair and Hylebos waterways creating more than 1,400 acres of new land. The waterway extension and dredging set the stage for increased activity with new terminals, industrial development sites, and jobs. By 1981, shipping and transportation innovations transformed the location, land, and operational needs of port activities. The study area saw the addition of facilities such as the North Intermodal Yard, shifting the Port's activities, and land uses in the area, into the logistics of moving goods from one place to another. Land use in the study area shifted to include docks, yards, and similar spaces needed for proper cargo handling, and the infrastructure required to carry out their distributive function (Hoyle 1989).

3.1.6 Current Conditions

Current Land Uses

The study area includes 3,963 upland parcel acres spread across 752 parcels with a diverse range of uses. The majority (34%) of uses are industrial activities. Manufacturing (16%), warehousing (15%), and transportation (4%) are also significant proportions of the overall land use acreage in the study area (parcel acres). These activities together account for roughly 70% of the land use in the study area.

These acreages reflect the presence of the Port of Tacoma, container and intermodal facilities, and a range of maritime, transportation, manufacturing, fisheries, construction, utilities, and industrial services uses. Specific uses include container marshalling and intermodal yards, chemical manufacturing and distribution, forest product operations (including shipping and wood and paper products manufacturing), warehousing and/or storage of cargo, and boat and/or ship building/repair.

Similar to other industrial areas in the region, however, a number of non-industrial activities that have similar needs around outdoor storage, and distance from residential areas, are also located in the study area. These include uses related to services (6%), construction (6%), utilities (5%), and commercial (2%) activities. Services, retail, and commercial uses include food services, auto and other repair services, and other similar uses that serve employees in the area as well as residents in the city. Utilities uses include three substations owned by Tacoma Public Utilities, a substation owned by Bonneville Power Administration, a wastewater treatment plant operated by the City of Tacoma, and property operated by the Tacoma Fire

Department. These existing utilities facilities are part of the infrastructure serving the Port of Tacoma. See **Exhibit 3-10**.

Roughly 12% or 458 acres of land in the study area is vacant, either unused or undeveloped. Not all of this land may be vacant in the traditional sense—industrial areas have a larger presence of vacant land since some of this land may be used for staging, storage, and to support industrial activities. A significant proportion of the vacant land in the study area is vacant due to legacy contamination that can be expensive to remedy, but should be addressed prior to use.

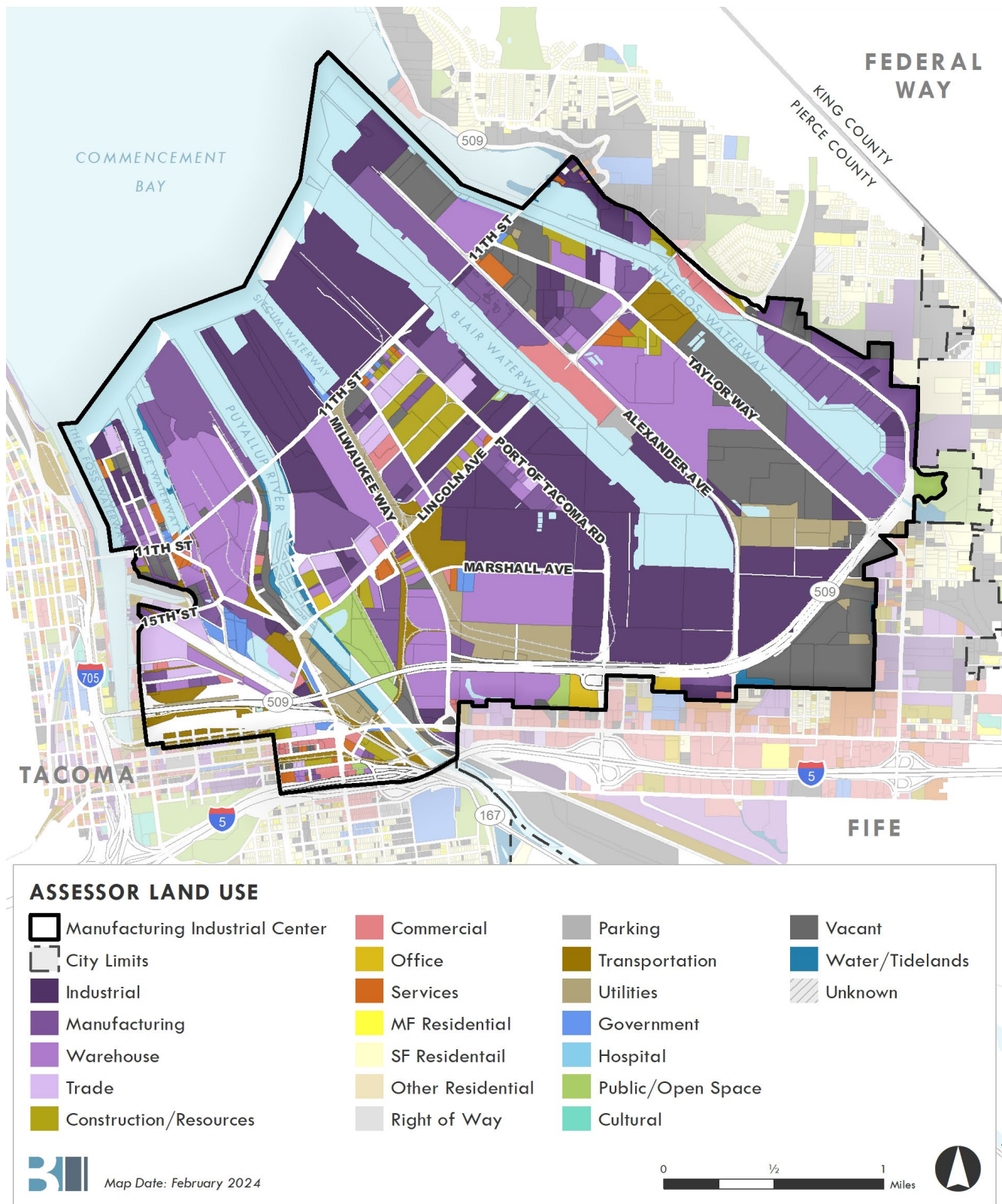
Land use patterns are described in greater detail in the northeast, central, and southwest portions of the study area in the following sections.

Land Use in the Northeast Portion of the Study Area

This 1,561-acre area includes parcels east of the Blair Waterway and at the end of the waterway, east of Alexander Avenue. Industrial uses, including terminals, intermodal yards, and other related uses (22%, 339 acres), manufacturing (20%, 333 acres), warehouse (13%, 207 acres), and utilities (4%, 63 acres) uses account for close to 60% of land use in the area. Nearly a quarter or 383 acres of land in this area is vacant. Some of this land may appear as vacant but may be in use for staging or other needs and not available for redevelopment. Commercial (4%), services (1%), and other sectors are smaller uses in this area. Firms and businesses in the area include a range of transload, transportation, and industrial uses such as Trident Seafoods, TOTE Maritime, the Prologis warehousing facility, Taylor Way Auto Processing Facility, MacMillan Piper, Calbag Metals Company, and Nordlund Boats. See **Exhibit 3-11** and **Exhibit 3-12**.

Land Use in the Central Portion of the Study Area

This 1,761-acre area includes parcels between the Puyallup River and Blair Waterway/Alexander Avenue. Industrial (55%, 968 acres) and warehouse (14%, 251 acres) account for close to 70% of land use in the area. Manufacturing (9%, 159 acres) and utilities (5%, 80 acres) are smaller proportions of the land use here. Very little land in this portion of the study area is vacant. Nearly 1%, or 23 acres, of land in this area is vacant. Commercial (4%), services (1%), and other sectors are smaller uses in this area.



SOURCES: City of Tacoma 2020; BERK 2020, 2024

EXHIBIT 3-10 Current Land Use – Study Area, 2020

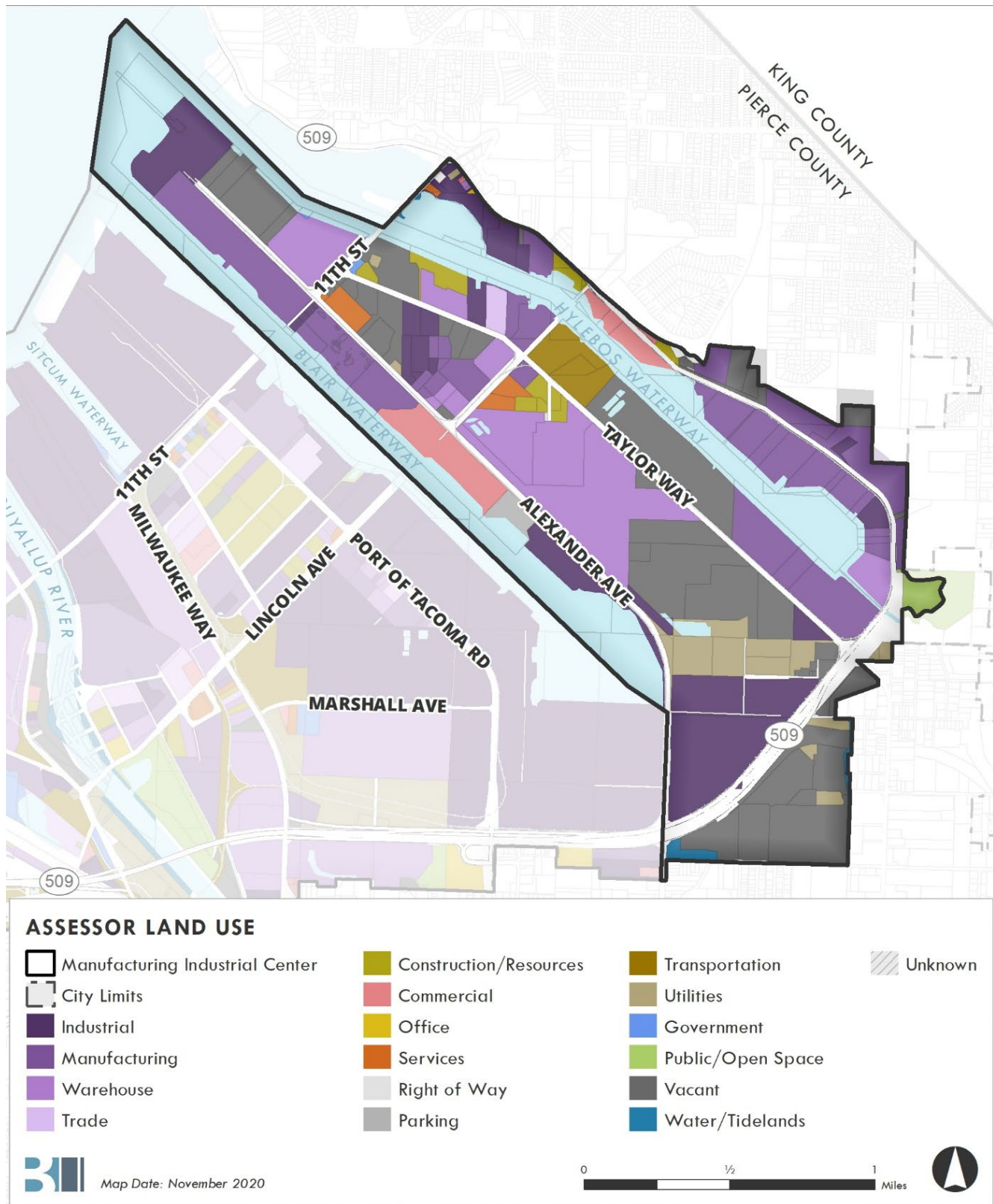


East Blair One Terminal (EB1) is a cargo dock for items that cannot be shipped in a container. This type of cargo is called “breakbulk.” The Port of Tacoma handles heavy equipment such as John Deere and Caterpillar through this facility, including yachts, motorhomes, exotic cars, crates with Boeing parts, medical equipment, or helicopters.

SOURCE: Port of Tacoma 2020

EXHIBIT 3-11 East Blair Terminal, 2020

Activities in the area include terminals (both port-owned and private), intermodal yards, and a range of industrial, transportation, marina, auto-related, small office, and similar uses. Examples of firms and businesses in the area include the Auto Warehousing Company, Concrete Technology Corporation, US Oil refinery, Tacoma Metals, and others. The Port of Tacoma-owned multi-use office building known as the Fabulich Center is located here off Port of Tacoma Road between SR 509 and I-5. See **Exhibit 3-13** and **Exhibit 3-14**.



SOURCES: City of Tacoma 2020; BERK 2020

EXHIBIT 3-12 Land Use – Northeast Portion of Study Area, 2020



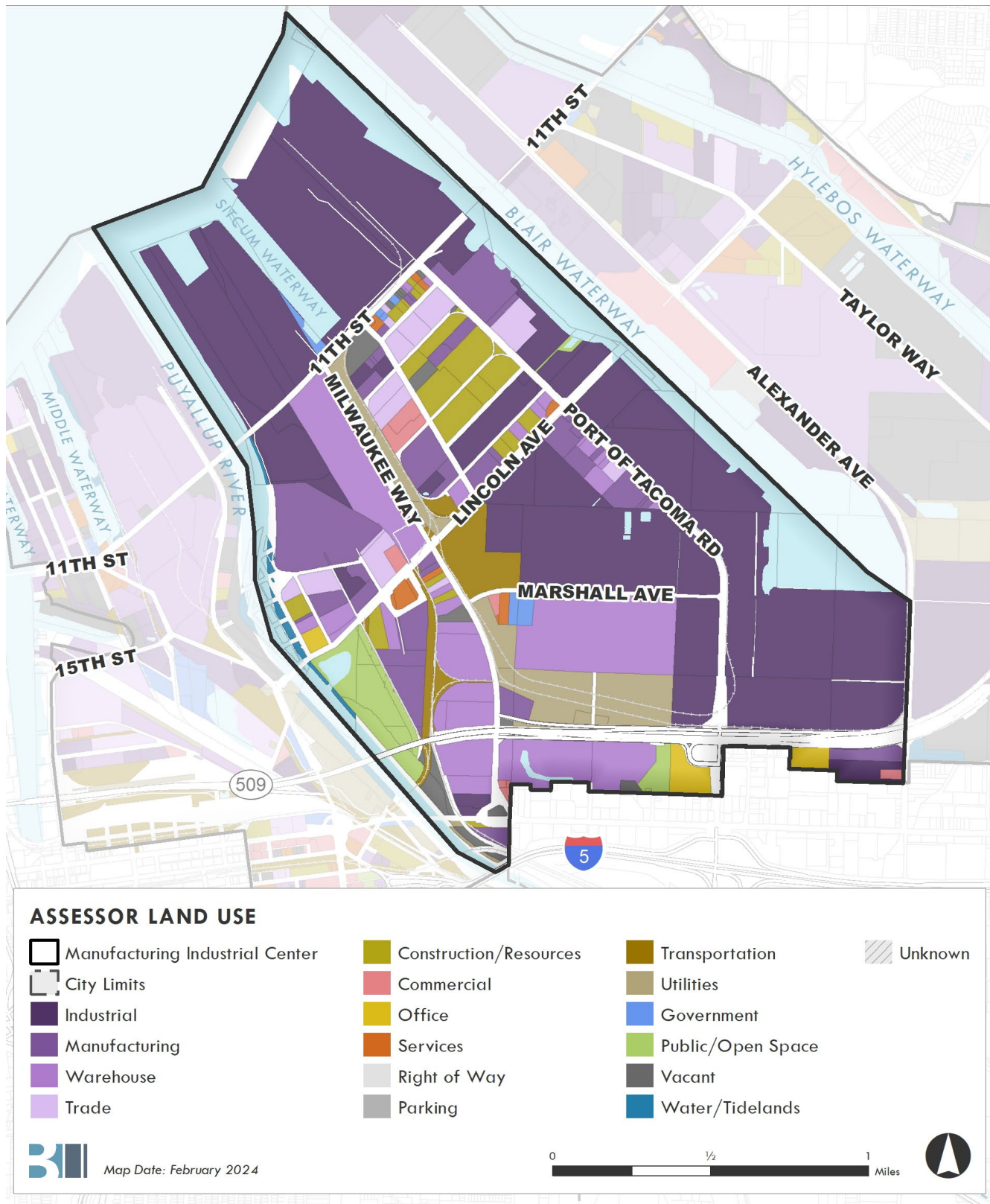
In 1981, the Port of Tacoma was the first port in the Western Hemisphere to create a facility called an “on-dock intermodal yard.” This enabled the shipping line to move containers between ship and rail without putting the container on a truck and driving it on city streets. Today, the Port has eight intermodal yards that help shipping lines, terminal operators, and shippers save time and money.

SOURCE: Port of Tacoma 2020

EXHIBIT 3-13 Washington United Terminals, 2020

Land Use in the Southwest Portion of the Study Area

This 642-acre area includes parcels west of the Puyallup River. Warehouse (24%, 153 acres), manufacturing (20%, 129 acres), and transportation (12%, 75 acres) account for close to 56% of land use in the area. Industrial (6%, 36 acres) and utilities (6%, 40 acres) are smaller proportions of the land use here. Nearly 8% or 51 acres of land in this area is vacant. Commercial (9%), services (6%), and other sectors are relatively larger uses here compared to the northeast and central portions of the study area.



SOURCES: City of Tacoma 2020; BERK 2020, 2024

EXHIBIT 3-14 Land Use – Central Portion of Study Area, 2020

Activities in the area include distribution services, marine repair services, and warehouses. Examples of firms and businesses in the area include Stellar Industrial Supply, Atlas Columbia Warehouse, PCC Logistics, the Philips 66 Terminal, and the Conoco Phillips facility. The Tacoma Northwest Detention Center is also located in this area.⁵ See **Exhibit 3-15**.

City-Owned Land

A significant proportion of the land in the study area is publicly owned. For example, Fire Stations 5, 6, and 18, and a training center are located within the study area. The most significant new public investment is described below:

- **Fire Station #5 (Tideflats).** The City of Tacoma recently constructed a new fire station (Station No. 5) at 3510 E 11th Street to provide fire response, emergency medical services (EMS), and hazardous materials capabilities in the port area. As of 2022, the fire station began service provision to the Port of Tacoma and other industries in the Tideflats.

Land Ownership

Tribal Ownership

The Puyallup Tribe owns various parcels within the area. The most significant of these properties is located along the Hylebos and Blair waterways. The Tribe utilizes these properties for economic, cultural, and administrative uses. The Tribe operates a marina, automobile import facility, and processing facilities. The Tribe also has non-industrial uses within the area including a cultural site, dx^włalilali “a place to come ashore,” and the Tribal Ceremonial Grounds, which are places where various ceremonies and cultural activities take place.

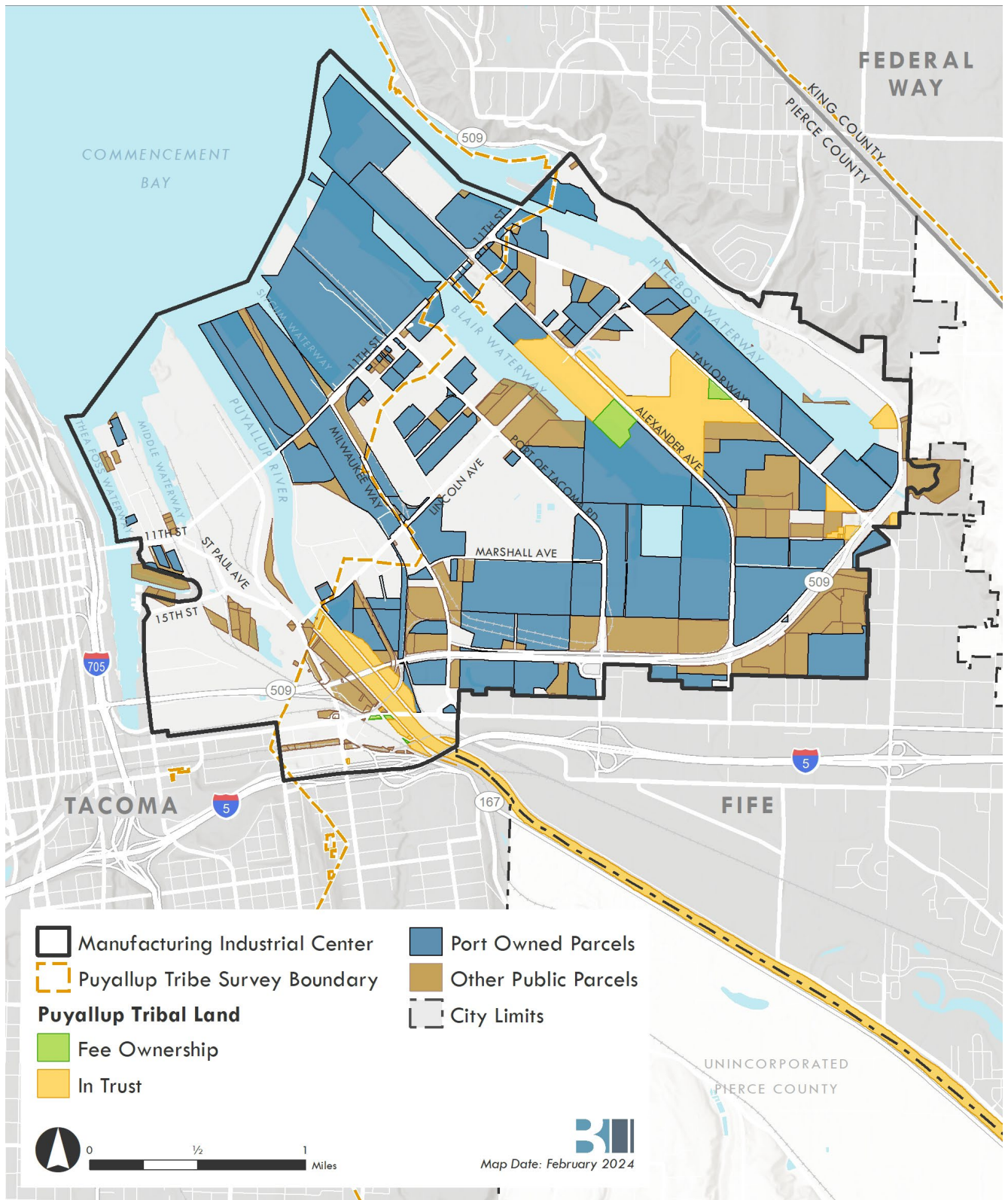
Additionally, the Tribe operates several administrative departments within the area. In addition to these properties, parts of the Puyallup River within the study area are also owned by the Puyallup Tribe. See **Exhibit 3-16**.

⁵ The prison is expected to close in 2025 when the contract with ICE expires, as the state has passed a law banning private detention facilities.



SOURCES: City of Tacoma 2020; BERK 2020, 2024

EXHIBIT 3-15 Land Use – Southwest Portion of Study Area, 2020



Port and public ownership based on land use designation, taxpayer address, and business name fields in the assessor data.

SOURCES: City of Tacoma 2020; Puyallup Tribe of Indians 2020; BERK 2020, 2024

EXHIBIT 3-16 Non-Private Ownership – Study Area, 2020

Port Ownership

The Port of Tacoma is a major landowner in the area. It operates and leases piers, docks, wharves, cargo handling equipment, and related upland facilities.

Major container and intermodal facilities that are located in the study area include deepwater terminals for containerized, breakbulk, and bulk cargo and intermodal rail facilities. Some of the largest cargo terminals, especially the container terminals, are owned and leased by the Port of Tacoma, but there are also many private facilities that transfer cargo to and from ships and barges. See Exhibit 3-16.

3.1.7 Edges and Adjacent Neighborhoods

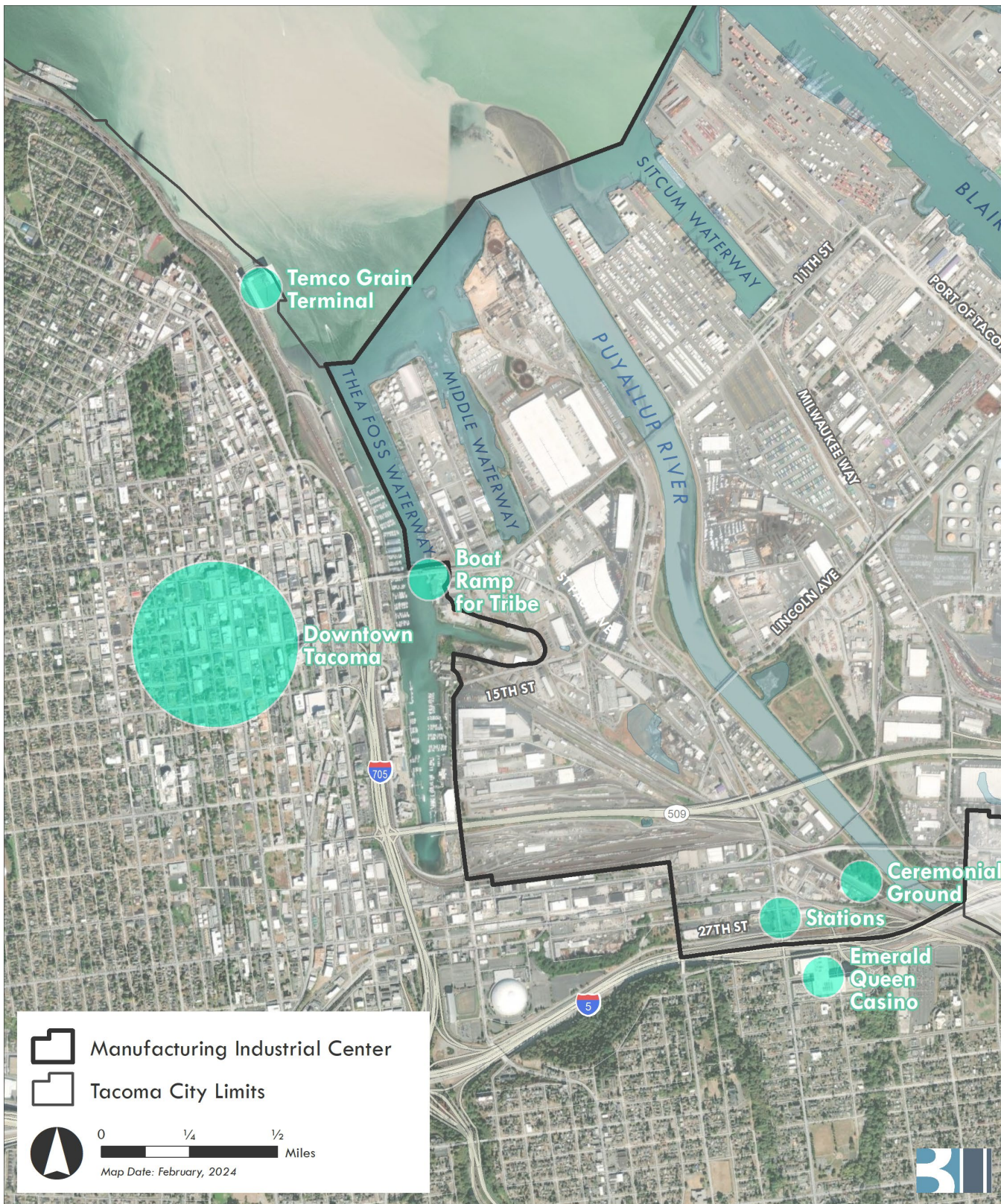
The study area is bound by I-705 and Dock Street on the west, I-5 on the south, 70th Avenue E and SR 99 on the east, and Marine View Drive and East 11th Street on the north. In addition to these transportation features, the study area is situated in a valley with steep slopes that separate it from uses in the east and west. The combination of transportation corridors and topography creates strong edges that physically separate the study area from the adjacent neighborhoods.

Western Edge

The Thea Foss Waterway physically separates the study area from Downtown Tacoma to the west. A mix of uses including attractions such as the Museum of Glass, waterfront apartment and condominium buildings, and interspersed commercial uses occupy the narrow strip of land between Dock Street and the shoreline on this western edge. North of the study area on Schuster Parkway is the Tacoma Export Marketing Company (TEMCO) Grain Terminal. The terminal is the nation's largest exporter of grain and second-largest exporter of flour. See **Exhibit 3-17**.

The 11th Street bridge at the intersection of Dock Street and S 11th Street is a gateway feature to the study area. A boat ramp facility for the Puyallup Tribe is also located here.

On the east side of the Foss Waterway, south of the 11th Street Bridge, the Port and Tacoma Public Schools are planning a business office building and Tacoma Public Schools new Maritime | 253 skills center. The center will offer training and education for high school students who desire a career in the maritime and industrial trades.



SOURCE: Google Maps 2024

EXHIBIT 3-17 Western Edge – Study Area

To the southwest edge of the study area, beyond Puyallup Avenue and E 25th Street, are the parking areas and low-density development around the Tacoma Dome Station. The Tacoma Dome Station is a regional transportation facility where multiple transit routes and services converge, including Tacoma Link streetcar, Sounder commuter rail, and local and regional bus service. Just outside the study area on the southwest is the Emerald Queen Casino and Tribal government uses. Within the study area, along the southern edge east of E 27th Street are ceremonial grounds for the Puyallup Tribe.

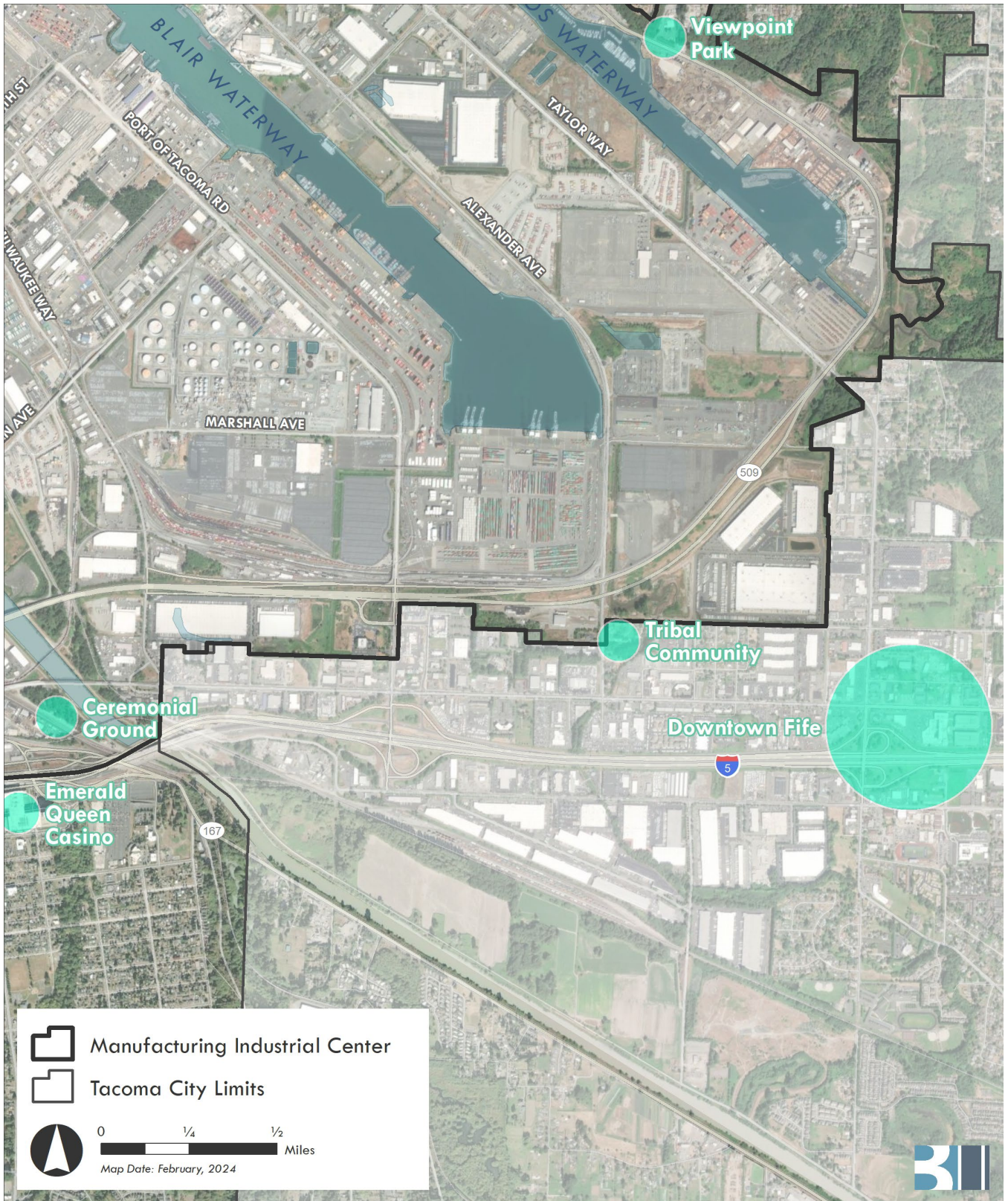
Southern Edge

The southeastern edge of the area between the study area and I-5 (located within the city limits of Fife) is dominated by commercial uses oriented to the highway. Interspersed with these highway-oriented commercial uses is a tribal community informally known as “Youngsville.” Some properties are converting from hotels to residential uses along the Pacific Highway corridor. In the City of Fife, three hotels have been converted into more than 200 dwelling units. See **Exhibit 3-18**.

Eastern Edge

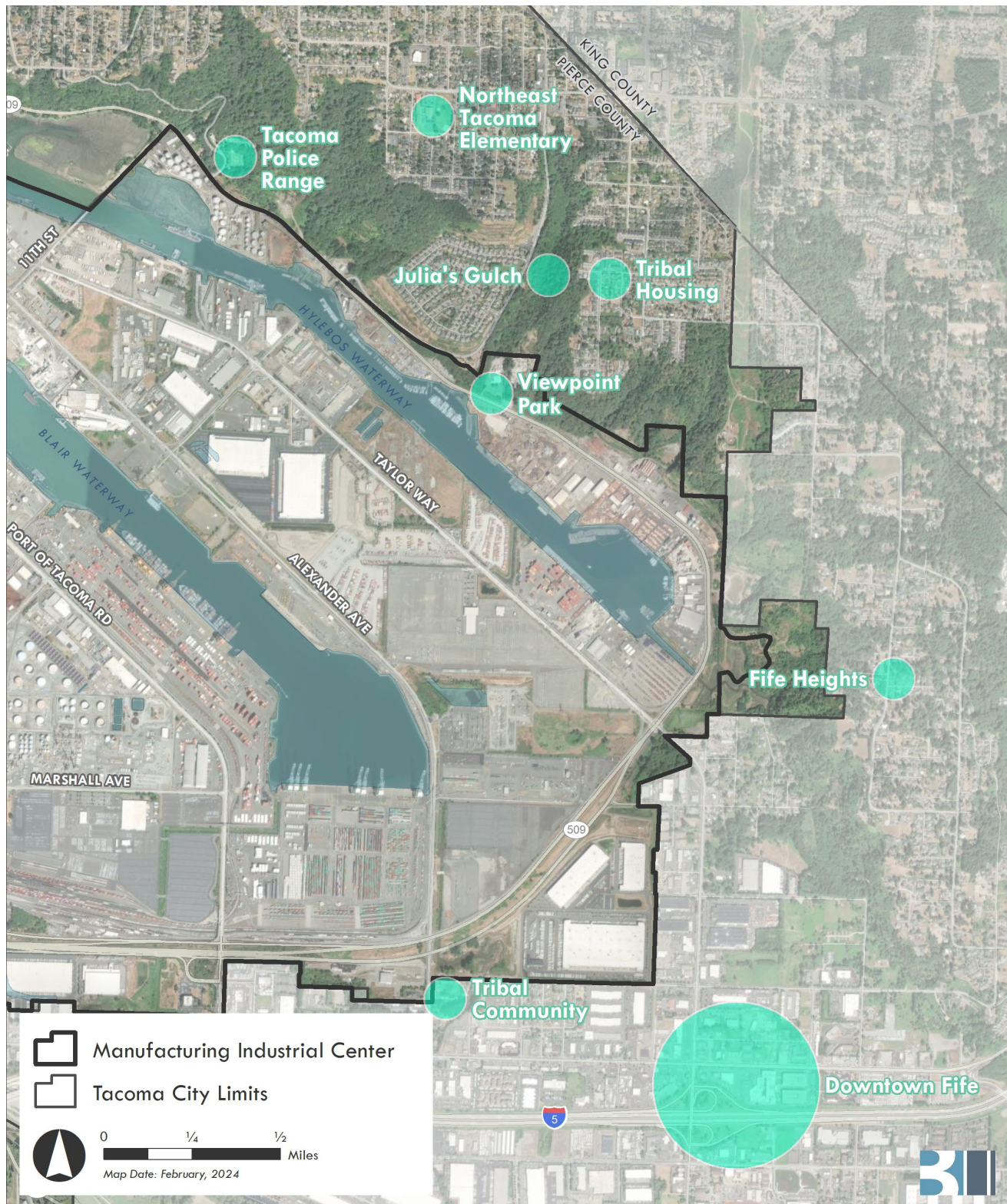
Marine View Drive and SR 509 form the eastern edge of the study area. Julia’s Gulch, a 60-acre site owned by the Port of Tacoma and managed by Metro Parks, borders the eastern edge of the study area. The site remains green through a stewardship agreement with the City of Tacoma, Schnitzer Steel Industries, and Forterra. Viewpoint Park, housing, and forested areas are just outside the study area. Steep topography separates the study area from the development along this side of the study area. See **Exhibit 3-19**.

Southeast of the study area, Fife’s City Center and future light rail station are planned. This area would have a mix of uses including housing. See Section 3.1.1, *City of Fife Comprehensive Plan and Zoning*.



SOURCE: Google Maps 2024

EXHIBIT 3-18 Southern Edge – Study Area



Aerial image of the study area and the eastern edges.

SOURCE: Google Maps 2020

EXHIBIT 3-19 Eastern Edge – Study Area

3.1.8 Existing Development Types

A large proportion of the development in the study area consists of port-related uses including dock and yard spaces needed for proper cargo handling. These areas have limited buildings and instead comprise a specific type of development characteristic of an area with a working seaport. This includes wharfs, cranes and related infrastructure, power, refrigerated container storage and power, rail, top picks vehicles and other heavy equipment, gate, and security infrastructure.

Character of Area

A significant proportion of the study area is devoted to freight yards, outdoor spaces, and other open areas typical in industrial districts. Buildings in the study area are large-format buildings oriented to internal circulation rather than streets. Buildings are typically surrounded by large areas to accommodate truck staging, employee parking, and outdoor storage needs.

Building Types and Area

Major building types include industrial flex buildings that can accommodate a range of activities along with ancillary office spaces, warehouses built for storage, and purpose-built manufacturing buildings that are unique to their functions. Industrial/flex properties account for almost 10.9 million square feet (SF) of space, followed by manufacturing buildings with 2.6 million SF. Another 1.3 million SF of built space is distributed across uses such as oil and chemical refining, resource uses (including cement and gravel plants), marinas and shipyards, lumberyards, railroad yards, and the federal Northwest Detention Center.

Other uses are minimal in this area, including retail and office uses. No multifamily residential development is located within the study area, although some non-residential uses do include live-work/caretaker units. These smaller retail and service buildings occupy interstitial spaces between larger industrial structures.

Age of Buildings

The study area includes both older and newer buildings. About 10%, or approximately 1.6 million SF, of building space was built pre-war, and 57% or roughly 5.8 million SF of total rentable building area is 50 years old or older. There has been a significant amount of new construction in the study area concentrated in warehousing and

distribution buildings, with about 3.8 million SF of said buildings constructed since 2011. See images of buildings in **Exhibit 3-20**.

3.1.9 Expected Growth and Development Capacity

The capacity of the study area for jobs has been evaluated in 2010 and 2020. The City of Tacoma has identified the 2010 results as continuing to be appropriate for the study area. See **Table 3-5**. The growth capacity is summarized in Chapter 2, *Alternatives*, and Chapter 4, *Population, Employment, and Housing*.

TABLE 3-5 Buildable Lands Analysis – Study Area, 2010 (Acres)

Zone	Built Out/Undevelopable	Underutilized	Vacant	Grand Total
M1	15	41	3	58
M2	98	136	167	401
PMI	1,097	1,397	180	2,674
S8	3	42		45
S9	645	91	35	771
Acres Total	1,857	1,706	385	3,949

SOURCES: Pierce County 2014; City of Tacoma 2022

NOTE: The buildable lands analysis exclude public owned lands but does not necessarily exclude undeveloped open space that is privately owned or portions of parcels that are undeveloped.

In 2013, the City of Tacoma developed allocations for population and employment for the 2030 and 2040 planning horizons. For 2030, the allocations used for the City as a whole were those established by Pierce County in compliance with GMA for the 2015–2035 Comprehensive Plan. For 2040, the allocations used were taken from the PSRC’s VISION 2040 report and are based on data generated by the State of Washington’s Office of Financial Management. The City will be updating these for consistency with VISION 2050 when it prepares its Comprehensive Plan periodic update. These total allocations for growth in different city geographies are shown in **Table 3-6**.

The adopted Comprehensive Plan assumes 7,555 jobs by 2040 in the Port of Tacoma MIC.



Top left image: Warehouse building. Top right image: Industrial flex buildings.
Middle image: Interior of concrete factory.
Bottom image: Purpose-built manufacturing buildings for Graymont and Georgia Gypsum.

SOURCES: Google Earth 2020; Port of Tacoma 2020

EXHIBIT 3-20 Existing Development

TABLE 3-6 Growth Allocations – City of Tacoma, Current Plans

Area	Population Allocations			Employment Allocations		
	Percent	2030	2040	Percent	2030	2040
Tacoma	100%	78,600	127,000	100%	64,200	97,000
Downtown Regional Growth Center	60%	47,160	76,200	70%	44,940	67,900
North Downtown	26%	20,080	32,445	30%	19,470	29,417
South Downtown	26%	20,080	32,445	30%	19,470	29,417
Hilltop	9%	7,000	11,310	9%	6,000	9,065
Tacoma Mall Regional Growth Center*	6%	5,000	8,887	0	5,000	8,385
Tideflats Manufacturing/Industrial Center	0%	0	0	8%	5,000	7,555
South Tacoma Manufacturing/Industrial Center	0%	0	0	8%	5,000	7,555
Remaining allocation	34%	26,440	41,913	7%	4,260	5,606
% of remaining allocation to Mixed Use Centers (MUCs)	50%			80%		
MUCs	17%	13,220	21,361	5%	3,408	5,149
Outside all centers	17%	13,220	21,361	1%	852	1,287

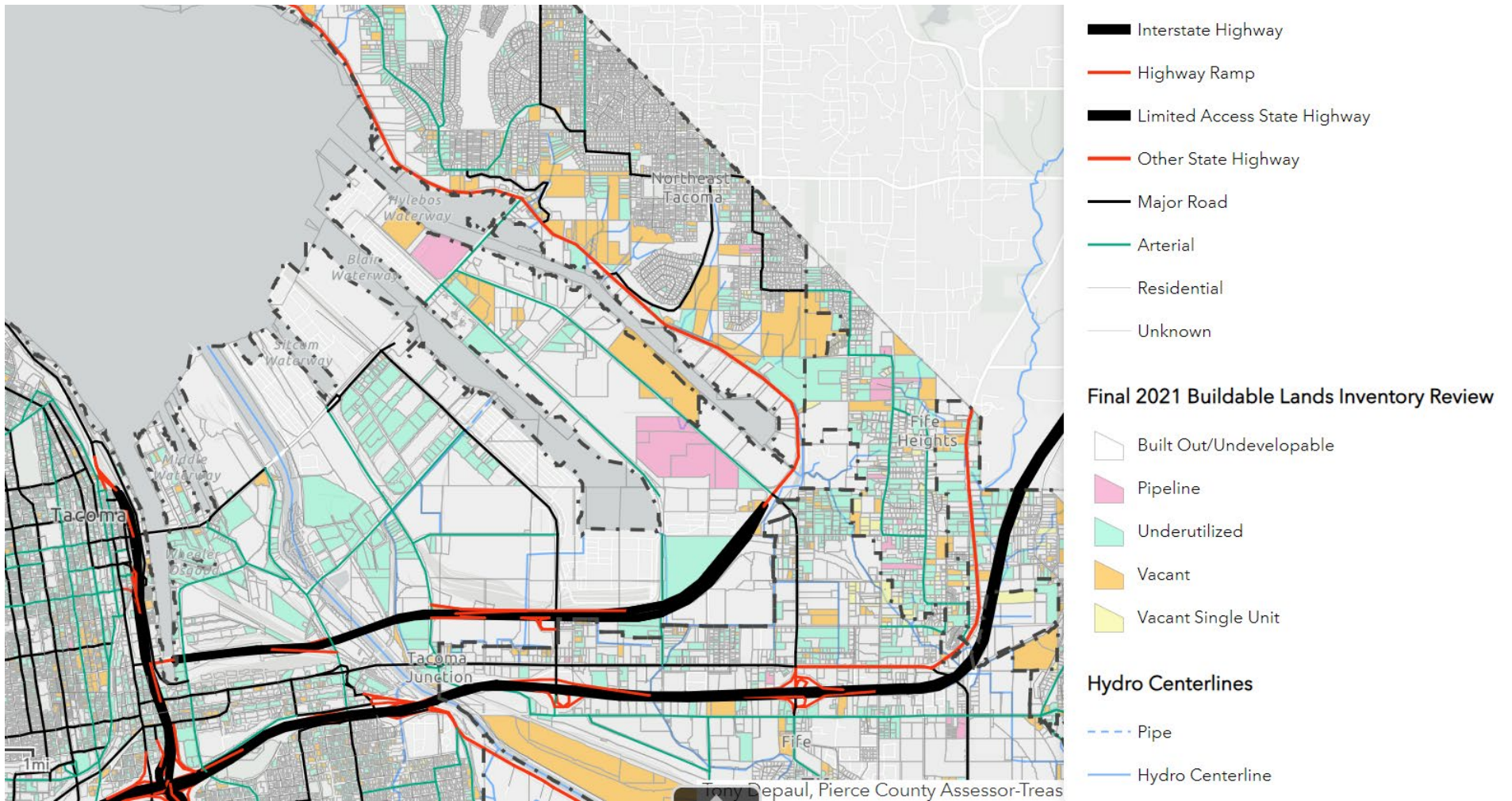
SOURCE: City of Tacoma 2013, 2018

* In 2018, the City adopted the Tacoma Mall Neighborhood Subarea Plan and increased growth allocations to this Center. The existing growth targets for the current 485-acre Tacoma Mall Regional Growth Center are 7,555 new jobs and 8,079 additional people by 2040. This Subarea Plan uses those growth targets but increases them to account for a 90-acre expansion area. The new targets for the enlarged 575-acre Tacoma Mall Neighborhood are 8,385 new jobs and 8,887 additional people by 2040. This would then reduce the “remaining allocation” correspondingly.

The 2021 buildable lands evaluation is visualized in **Exhibit 3-21**. The PMI zone is only found in the Tideflats and is the most extensive zone in the study area. Results of the 2021 buildable lands evaluation show that the PMI zone alone would meet the capacity necessary to add more than 11,000 jobs to achieve more than 20,000 jobs in the study area.

- **PMI:** Vacant Land 3,220 jobs
- **PMI Underutilized:** 7,388 jobs
- **Pipeline:** 918 jobs
- **Total PMI Zone:** 11,526

In addition, a share of M1 and M2 capacity would be available for new and redevelopment and add more jobs in the Tideflats.



SOURCES: City of Tacoma 2020; BERK 2020

EXHIBIT 3-21 Land Capacity – Study Area, 2020

3.1.10 Summary of Affected Environment

- The study area includes a large and diverse set of land uses. These uses span a range of activities and sectors. The assorted mix of uses reflects the presence of marine and shoreline habitat, a working port, a large and diverse industrial support sector, and a range of uses that share a need for distance from residential uses, transportation access, and outdoor storage.
- Industrial uses such as manufacturing, warehousing, and transportation account for about 70% of the land uses in the Tideflats study area. Roughly 12% of land in the study area is vacant, either unused or undeveloped. Other uses include services (6%), construction (6%), utilities (5%), and commercial (2%) activities.
- Existing state, regional, and local policies and regulations support the area as a location of concentrated industrial activity and its role as a MIC. The Comprehensive Plan supports the provision of adequate buffers to avoid land use conflicts between industrial development and surrounding non-industrial uses. The Comprehensive Plan assumes that the existing topography (e.g., especially on the east) is an effective buffer and no additional Transition Area is needed. Industrial uses produce several impacts, around air quality, noise, and odor, that topography alone might not adequately buffer.
- Recent planning, including the South Downtown Subarea Plan, and planning for transit around the Tacoma Dome Station area, envision changes to areas adjacent to the study area. These considerations will influence buffers and Transition Areas and connections to the study area.
- Existing zoning within the study area continues to allow some uses that may be considered incompatible with industrial activity such as retail, residential, or other non-industrial uses that PSRC centers criteria suggest be limited in MICs. The intent of the Comprehensive Plan Container Port Element is that a core of PMI (Port-Maritime Industrial) zoning is protected from encroachment by incompatible land uses by a buffer of general industrial zoning (M-1 and M2). However, PMI zoning allows for a large variety of uses, including heavy industrial uses, light industrial uses, and non-industrial uses. For example, PMI zoning allows for hazardous chemical manufacturing, and shipping terminals of all kinds, as well as light industry and warehousing. The non-interim regulations addressed some potential incompatible uses.
- The City has implemented non-interim zoning that reduced incompatible uses in 2021. Depending on the alternative integrated into the Subarea Plan, allowed and prohibited uses could need adjustment to ensure that they tie into a shared vision

Non-Interim Land Use Amendments

On October 20, 2020, the City Council approved Amended Ordinance No. 28696, which approved a 6-month extension of the Tideflats Interim Regulations and also directed the Planning Commission and staff to begin a process to develop new recommendations for a non-interim ordinance to replace the interim regulations. This project reviewed land use regulations in the Port of Tacoma Manufacturing and Industrial Center and Industrial Zoning Districts City-wide to address the following issues:

- Public notification requirements for permits and land use amendments.
- Conversion of industrial lands to non-industrial uses.
- Encroachment of residential developments on industrial lands.
- Siting of potentially high-risk/high-impact heavy industrial uses.

The process resulted in amendments to the Tacoma Municipal Code Title 19, *Shoreline Master Program*, and Title 13, Chapters 13.02, *Planning Commission*; 13.05, *Land Use Permits and Procedures*; 13.06, *Zoning*; and 13.12, *Environmental Code*. Growth Management Act, SEPA, and Tacoma Municipal Code.

for the future of the area and comply with PSRC centers criteria to limit non-industrial uses.

- Current policies promote sustainable development and attention to the effects of climate change (e.g., Policy EN-1.3). A vulnerability assessment of the study area suggested that projected impacts over a 20-year planning horizon will primarily be driven by increased flooding during extreme flood events, leading to temporary flooding of roadways and development in low-lying areas.
- The current Tacoma Comprehensive Plan and PSRC regional framework policy intent is for the study area to be a viable industrial center. The Shoreline Master Program requires a balance of water-dependent and oriented uses, public access, and environmental conservation. Additionally, growth should be balanced with the fact that the study area is located within the ancestral lands of the Spuyaləpabš̓ (Puyallup Tribe of Indians) and includes several places that are locations of important events, village sites, and geographical features with historical and cultural significance.
- The public can currently access the shoreline at points along Thea Foss Waterway including at Waterway Park, the City of Tacoma Fire Department facility, and on the east at the Inner Hylebos with additional viewing opportunities at Julia’s Gulch. The City of Tacoma Shoreline Public Access Plan describes other possible opportunities to provide public access to waterways in the area while meeting the goals outlined in the Shoreline Master Program.
- The area adjacent to the Puyallup River shoreline includes local and federal properties. Recreation opportunities may be possible with an undeveloped riverfront in an urban setting. However, the Puyallup River is vulnerable to flooding due to climate change and has limited adaptation options due to its history of alteration.

3.2 Potential Impacts

This section identifies and compares the potential impacts on land use in the study area for each alternative, including consistency with plans and policies, land use compatibility, land use transitions, and sea level rise risk to land uses.

3.2.1 Thresholds of Significance

The alternatives are expected to result in a land use impact if they would result in:

- **Inconsistencies with plans and policies.** The alternative would result in an inconsistency between the stated land use goals and

policies in the Comprehensive Plan and/or the VISION 2050 regional growth plan, Countywide Planning Policies, Shoreline Master Program, or plans of governments within or abutting the study area. The alternative would introduce a land use pattern that would foreclose future opportunities to reach goals and policies. Inconsistencies could also occur along the edge of the Core Area where RCW 36.70a.085 requires that a Port Element of a Comprehensive Plan “identify and resolve key land use conflicts along the edge of the core area, and minimize and mitigate, to the extent practicable, incompatible uses along the edge of the core area.” That would give focus to “buffer” areas to reduce potential impacts.

- **Land use incompatibility within the Study Area.** The alternative would cause an increase in the prevalence of disparate activity levels and use patterns that would result in incompatibilities within industrial zones in the study area. Incompatibilities could undermine industrial and maritime operations, or the comfort and safety of employees or residents. Incompatibilities could be related to time of day/night activity, noise levels, odors, and conflicting movements by vehicles and other modes. See above regarding compatibility along Core Areas and Commercial Buffer Areas in the Container Port Element as well.
- **Inadequate land use transitions at the boundaries of the study area.** The alternative would create a land use pattern where high-intensity/high-impact uses would be likely to abut or encroach on adjacent non-industrial uses and concentrations of residential populations abutting the study area. These impacts can result from noise, light and glare, odor, or height, bulk, and scale of taller buildings adjacent to nonindustrial areas.
- **Increased risk of land uses to sea level rise.** Proposed land uses increase vulnerability to sea level rise or hinder the ability to incorporate climate adaptation measures.

Within industrial areas that have limited residential populations and a utilitarian industrial context, impacts related to height, bulk, scale, and aesthetics are not considered adverse impacts. Other areas of the city, outside of MICs or industrial zones, are more sensitive to aesthetic and height/bulk/scale impacts. Therefore, adverse impacts related to aesthetics and height/bulk/scale within this EIS are focused on the Transition Areas and addressed as part of the land use transitions impacts analysis.

3.2.2 Impacts Common to All Alternatives

Policy Consistency

In general, all alternatives are consistent with applicable state, regional, and local plans and policies that provide the framework for land use and development within the MIC (see **Table 3-7**).

The alternatives generally continue the status quo designations (Alternatives 1 and 4) emphasizing industrial uses, where Alternatives 2 and 3 promote a core of industrial activities but provide adjustments to Transition Areas allowing for other uses.

TABLE 3-7 Local Plans

Local Plans	Evaluation
CITY OF TACOMA	
Comprehensive Plan	<p>Both the No Action Alternative and Alternative 4 retain the existing Comprehensive Plan goals and policies concerning preserving and protecting port-related industrial uses, as well as the Heavy Industrial future land use map designations within the boundary of the MIC. Both Alternatives 1 and 4 maintain the PMI zoning districts for the area identified in the CPE as the Core Area, ensuring that land uses within the Core Area; and the Industrial/Commercial Buffer Area identified in the CPE aligns with the land zoned as M2 and M1 within the MIC. The M1 zoning district allows for residential uses consistent with policy CP-2.5.</p> <p>Both Alternatives 2 and 3 propose a reduction in the size of the identified Core Area, primarily through adjusting the buffer areas; these differences with the adopted Subarea Plan would necessitate amendments to the Comprehensive Plan’s CPE and the Container Port Core Area and Industrial Buffer Areas Map in collaboration with the Port.</p> <p>The Industrial/Manufacturing Buffer Area under Alternatives 2 and 3 would expand in certain areas, each with different approaches to allowable uses in the buffer areas. Implementing these changes would involve rezoning and adjusting development standards. In Alternative 2, areas excluded from the Core Area on the Middle Peninsula would permit general industrial uses that support the Core Area. In Alternative 3, light industrial uses would be allowed in the Middle Peninsula, potentially necessitating amendments to the Future Land Use Map to reclassify the area as Light Industrial with associated M1 zoning.</p> <p>Further changes within the Industrial/Manufacturing Buffer Area under Alternatives 2 and 3 involve implementing measures more aligned with current CPE policies aimed at establishing a long-term buffer for the Core Area. These measures would ensure compatibility with activity levels and the physical character of adjacent less-intensive areas, thus improving the transition of land use between adjoining areas. Alternative 3 would permit the expansion of residential uses from the future Portland Ave. Station Area where it is currently permitted into the Foss Peninsula Area, with the implementation of development standards to control housing types. Conversely, Alternative 2 would prohibit housing within the Industrial/Manufacturing Buffer Area entirely. Both Alternative 2 and 3 would implement standards supporting transit-oriented manufacturing uses in proximity to transit, in line with port-related industrial activities.</p>
Future Land Use Map Designations	
CPE – Core Area Policies	
CPE – Industrial/Commercial Buffer Area	

Local Plans	Evaluation
<p>Shoreline Master Program</p>	<p>No changes to the SMP or shoreline district designations are proposed under any alternative. The SMP promotes no-net-loss of shoreline ecological function, public access, and water-oriented uses. All alternatives would promote water-dependent, water-related, and water enjoyment (recreation) uses. All development alternatives involve shoreline and habitat restoration. Alternative 2 will emphasize these activities further, while Alternative 3 will have an expanded focus on habitat restoration. Alternative 4 continues the adopted land use plan with more habitat restoration opportunities. Alternative 1 continues current policies and implementation status. With the Subarea Plan proposed in Alternatives 2, 3, and 4 there is an opportunity to further implement Tacoma goals and policies in the Comprehensive Plan and Shoreline Master Program in the types of policies, codes, or the planned action mitigation measures regarding climate change adaptation and resilience, cultural resource conservation, and shoreline public access. The Subarea Plan Framework advances City and tribal coordination.</p>
<p>North Downtown Subarea Plan</p>	<p>The North Downtown Subarea Plan recognizes the industrial character of the east bank of the Thea Foss Waterway with the presence of warehouses, docks, and marine-related businesses. No land use changes are contemplated for this area. All alternatives are consistent with the proposed land uses contemplated by the North Downtown Subarea Plan.</p>
<p>South Downtown Subarea Plan</p>	<p>The South Downtown Subarea Plan includes portions of the Tideflats Subarea and anticipates mixed use, recreation, and similar uses.</p> <p>Alternatives 2 and 3 are the most consistent with the South Downtown Subarea Plan with the proposed introduction of transit-oriented manufacturing, identification of strategic opportunity for habitat restoration, and enhanced public access and recreation in the Foss Peninsula Transition Area. Alternative 3 would allow for some housing whereas Alternative 2 would not. Alternatives 1 and 4 would retain the status quo industrial designations in the Buffer or Core Area; some housing could occur in a limited way in the M-1 zone.</p>
<p>PORT OF TACOMA</p>	
<p>Scheme of Harbor Improvements</p>	<p>All alternatives are consistent with the stated Mission, Goals, and Core Values of the Port of Tacoma’s Comprehensive Scheme of Harbor Improvements, which applies to the whole county and references the strategic plan for its intended action.</p>
<p>Strategic Plan 2021–2026</p>	<p>All alternatives are consistent with the Mission, Values, and Foundational Goals of the 2021-2026 Port of Tacoma Strategic Plan and support the identified implementing strategies: economic vitality, environmental leadership, organizational success, transportation advocacy, and community connections. All alternatives would invest in the study area for added jobs and promote environmental remediation and habitat restoration at varying levels. Alternative 3 would provide for the most job growth and habitat restoration efforts of any of the alternatives.</p>

Local Plans	Evaluation
CITY OF FIFE COMPREHENSIVE PLAN	
Fife Comprehensive Land Use Plan	<p>Fife plans for Downtown and Regional Commercial uses abutting the study area in its City Center, a Center of Local Importance. This area would contain a new light rail station. Alternatives 1 and 4 would continue the status quo land use designations abutting Fife. Both the No Action Alternative and Alternative 4 focus on heavy industrial uses abutting Fife. Alternatives 1 and 4 would not adjust the development standards to balance industrial viability with livability or compatibility with adjacent areas in Fife, per the following policies:</p> <ul style="list-style-type: none"> • Policy CP–2.6: Establish development or performance standards to allow for continued viability of the Industrial/Commercial Buffer Area, while protecting the livability of adjacent areas. • Policy CP–2.1: Work in collaboration with adjacent jurisdictions, including Pierce County and the City of Fife, to ensure a good Industrial/Commercial Buffer from the Core Area to larger surrounding areas. <p>Alternatives 2 and 3 propose to implement measures to improve land use compatibility and identify strategic opportunities for habitat restoration. Alternative 2 results in a mix of heavy and light industrial uses adjacent to the City of Fife; while Alternative 3 emphasizes a mix of light industrial and compatible industry supporting commercial uses. Alternative 3 includes additional edge strategic habitat restoration opportunities and does the most to improve water quality, salmon habitats, and strategies to address climate change. Alternative 3 would offer a transition to less-intense uses from the Container Port Core Area to the Fife City Center.</p>

The alternatives fit with regional policies that designate MICs and promote industrial uses. See **Table 3-8**. Alternative 3 is the only alternative that meets the criteria for 20,000 jobs in an Industrial Employment Center MIC; other alternatives meet the growth levels for an Industrial Growth Center MIC. Alternative 2 is consistent with the CPPs that prohibit housing. Alternatives 1, 3, and 4 allow for limited housing.

All alternatives are consistent with state and federal plans to allow for economic development and to promote environmental quality (especially the development alternatives), particularly habitat conservation options and ability to integrate development resilient to climate change. See **Table 3-9**. There are joint planning and consultation options to address City–Tribal land use and permitting processes to advance compatibility. **Therefore, there is no significant adverse impact.**

TABLE 3-8 County and Regional Plans

Plans	Evaluation
Pierce County Countywide Planning Policies (CPPs)	Alternatives 1, 2, and 4 align with the CPPs, featuring different approaches to accommodating and concentrating employment growth within the MIC, except that they allow some form of housing. Only Alternative 2 is consistent with policy C 34.6.4, with provisions that prohibit housing within the MIC.
PSRC’s VISION 2050 Multicounty Planning Policies	In general, all alternatives are consistent with VISION 2050 policies including MPPs related to prioritizing Centers and the role of a MIC. Alternatives proposing housing (Alternatives 1, 3 and 4) are less consistent with Multicounty Planning policies that discourage housing (e.g., MPP-Ec-22 and MPP-DP-50). Alternative 2 would be most consistent.
PSRC’s Regional Center Criteria	<p>All alternatives are consistent with:</p> <ul style="list-style-type: none"> • Existing jobs: 10,000 minimum: Consistent: See Section 3.3. • Future Jobs: 20,000. Only Alternative 3 meets. Other alternatives meet a lower tier MIC classification. See Section 3.3. • Minimum 50% industrial employment: See Section 3.3. • Availability of existing or planned frequent, local, express, or flexible transit service: The Sounder Station and other service is available. • Presence of irreplaceable industrial infrastructure: All alternatives emphasize industrial uses. • At least 75% of land area zoned for core industrial uses: See Section 3.3. • Industrial retention strategies in place: See Section 3.3. <p>Regional role: All alternatives retain port and maritime uses that are regionally important.</p>

Land Use Compatibility

All alternatives would retain more than two-thirds of acres in Port-Maritime industrial use, consistent with MIC criteria and creating a compatible land use pattern. See **Table 3-10**. With industrial character areas included, the share of primarily industrial districts would be 75% or more.⁶ The remaining shares of districts typically include light industrial or mixed industrial commercial uses. Building heights up to 100 feet are allowed in some locations and setbacks are limited; see Table 3-2. Standards for light and glare apply to signs but not to building exteriors.

⁶ PSRC Designation Criteria for an Industrial Employment Center or Industrial Growth Center includes At least 75% of the land area is zoned for core industrial uses. Examples of zoning designations dominated by traditional industrial land uses are manufacturing, transportation, warehousing, and freight terminals. Commercial uses within core industrial zones shall be strictly limited.

TABLE 3-9 State, Tribal, and Federal Plans

Plans	Evaluation
Washington State Growth Management Act (Goals)	Land use, development, implementing measures, and shoreline and habitat restoration approaches under all development alternatives are consistent with the GMA.
Puyallup Tribe of Indians Comprehensive Land Use Plan	<p>Tribal land areas within the MIC under all alternatives are consistent with the Tribe’s Comprehensive Plan Vision and support the Tribe’s economic development vision. However, because Tribal properties are not under the jurisdiction of the City of Tacoma, and the Tribe does not have a Future Land Use Map at this time (it is a short-term action step in the Puyallup Tribe of Indians Comprehensive Land Use Plan), this impact analysis cannot fully determine the type or extent of impact.</p> <p>Alternative 3 is representative of the Puyallup Tribe of Indian’s desire for conservation in waterways and shorelines, and light industrial and mixed uses in transitions while continuing economic development in the core area. Alternative 2 is similar to Alternative 3 with conservation opportunities but without the housing, and with less light industrial in the Transition Areas.</p> <p>Alternative 1 continues current SMP goals and policies without new strategies for habitat restoration. It continues the current M2 zone in the Buffer Area and does not adjust performance standards to improve compatibility.</p> <p>Alternative 4 maintains current land use and zoning designations with heavy industrial in more Transition Areas like Alternative 1, but with some policies and strategies around habitat conservation.</p> <p>Under all alternatives, the Tribe could work in collaboration with the City to develop a Future Land Use Map and strategy for ensuring land use compatibility.</p> <p>The development alternatives would implement a Planned Action Ordinance that would not require a new SEPA threshold determination. This process would require compatibility with the ongoing consultation process between the City and the Tribe.</p>

TABLE 3-10 Percent of Future Land Use Acres

Alternative	Port-Maritime/ Industrial Character	Industrial Character	Industrial TOD and Light Industrial Character	Habitat/Restoration
Alternative 1 No Action	68.8% ^a	10.2% ^b	22.1% ^c	Least: Current Shoreline Master Program
Alternative 2	69.6% ^d	15.7% ^e	14.7% ^f	More: Strategic opportunities for restoration
Alternative 3	69.6% ^d	0%	30.4% ^f	Most: Water quality, salmon habitat, habitat restoration
Alternative 4	67.7% ^a	10.2% ^b	22.1% ^c	Some: Current Shoreline Master Program + policy emphasis

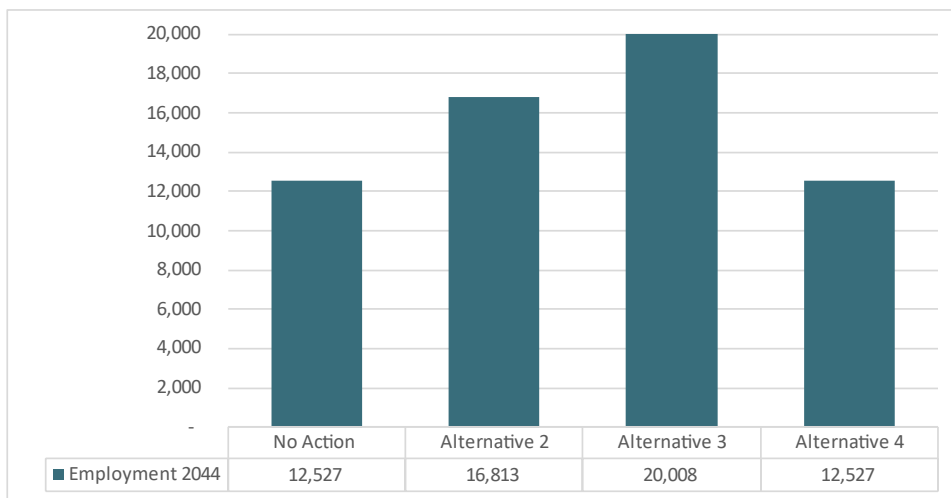
SOURCE: Developed by BERK 2023

NOTES:

- a. Includes areas zoned PMI and S8.
- b. Includes areas zoned M-2.
- c. Includes area zoned M-1 and S9.
- d. Core Area (new).
- e. General Industrial.
- f. Foss Peninsula, Portland Avenue Station, and Northeast Tacoma.

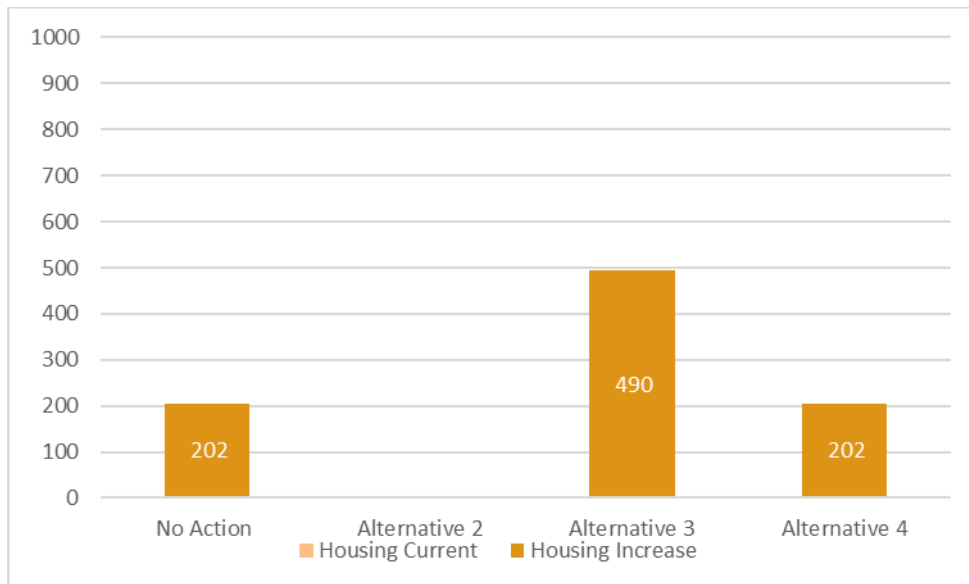
More discussion is addressed under each alternative.

All alternatives would add employment to the study area, and have the capacity to achieve more than 20,000 jobs (see Chapter 4). The jobs trends studied would be between 12,000 and 20,000. All but Alternative 2 would add limited housing to the handful of units that exist. By limiting housing the most, Alternative 2 would have a more compatible land use pattern and be the most consistent with regional policies. Limited areas of housing may be allowed under regional policies, although it is a less favored use in order to preserve land as much as possible for industrial purposes. The types of housing that could be made compatible with appropriate siting include caretakers’ residences, live/work where the activity reinforces manufacturing (e.g., makers space), or other. See **Exhibit 3-22** and **Exhibit 3-23**.



SOURCE: City of Tacoma 2023; BERK 2023

EXHIBIT 3-22 Activity Levels – Employment 2044



SOURCES: City of Tacoma 2023; BERK 2023

EXHIBIT 3-23 Activity Levels – Housing 2044

Land Use Transitions

The alternatives vary in their transitions, with some heavier industrial and others more light or mixed industrial. See **Table 3-11**. There are varying degrees of impact on adjacent communities, but not one common impact. See discussions under each alternative below.

TABLE 3-11 Land Use/Zoning Transition Summary Evaluation

Location	Existing Development Abutting Subarea	Alternative 1 No Action: Uses Allowed at Edges	Alternative 2: Uses Allowed at Edges	Alternative 3: Uses Allowed at Edges	Alternative 4: Uses Allowed at Edges
Western Edge	Mixed-use residential, commercial, and institutional/cultural	M-2 Heavy Industrial, M-1 Light Industrial	TOD Manufacturing, No Housing	TOD Manufacturing, Housing	M-2 Heavy Industrial, M-1 Light Industrial
Southern Edge	Highway-oriented commercial uses, tribal community called “Youngville”	M-2 Heavy Industrial	General Industrial	Mixed Use Commercial, Light Industrial, Housing	M-2 Heavy Industrial
Eastern Edge	Steep slopes, low density residential, open space, parks	M-2 Heavy Industrial, PMI, Port Maritime Industrial	Light Industrial, Commercial	Light Industrial, Commercial	M-2 Heavy Industrial, PMI, Port Maritime Industrial

SOURCE: BERK 2023

Sea Level Rise and Land Use

Preliminary reports indicate low and moderate risk to coastal development at 1 to 2 feet of sea level rise and high and severe risk at 3 to 5 feet. In the 20-year horizon of the Subarea Plan, low to moderate impacts are anticipated to coastal development and in the longer term, there is a potential for greater sea level rise impacts to coastal development.

Overall risk scores were identified for the long-term (greater than 20 years) high risk (to valuable industrial development critical to region), and medium risk (to a variety of, less dense uses than within MIC).

Table 3-12 compares how alternatives could increase land use vulnerability to sea level rise such as by concentrating uses at greater risk in the study area, or how the growth and land use pattern could hinder the ability to incorporate climate adaptation measures.

- Alternative 1 has the most industrial flexibility and limited housing allowances; it has a low added employment density. It would address conditions on a site-by-site basis rather than with an overall balance of growth, restoration, and adaptation. There would be less redevelopment and opportunity to address environmental restoration climate adaptation in a cohesive way.
- Alternative 2 provides more flexible industrial employment growth and no housing growth in the study area while incorporating more coordinated restoration efforts in advance of permitting, and protective and accommodative adaptation measures for industrial land and essential public facilities.
- Alternative 3 provides the most job growth in a smaller footprint; it also allows for more non-industrial uses in Transition Areas. It allows more housing, although still limited. There would be more proactive accommodation and managed retreat of land uses. It provides more coordinated fish and wildlife habitat restoration.
- Alternative 4 is similar to Alternative 1 except there would be more coordinated and accelerated fish and wildlife habitat restoration, and sea level rise measures to preserve industrial lands and protect essential public facilities with options for adaptation and mitigation. See Table 3-12.

TABLE 3-12 Sea Level Rise and Land Use

	Impact	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Intensity of Residential uses: Long-term	+	- Some	- Less	+ Most	- Some
Employment Density: Long-term	+	- Less	+ More	+ Most*	- Less
Opportunity to increase resilience	-	- Less	+ More	+ Most	+ Some
Co-benefits in adaptation (e.g., wetlands restoration)	-	- Less	+ More	+ Most	+ Some

SOURCE: BERK 2023

Key: Direction of impact is higher intensity or density (+) in areas subject to sea level rise: Less = none or negligible density or intensity. Some = modest amounts of intensity or density. More or Most = substantial or greatest intensity or density planned above existing.

Direction of impact is lower levels of resilience of adaptation (-). Less has limited amount of policies, codes, strategies, or mitigation integrated into the alternative; Some has a moderate amount of them integrated into the alternative; and More or Most = substantial or greatest amount integrated into the alternative.

* While the highest employment density is planned and they would be subject to climate exposure over the long-term, this alternative proposes the most measures to relocate and adapt to sea level rise, which may mean employment in smaller footprints with habitat restoration and other measures increased.

3.2.3 No Action Alternative 1

Consistency with Plans & Policies

Although the No Action Alternative does not involve changes to plans and policies, some inconsistencies with existing plans and policies would remain and are expected to increase due to the evolving land use trends over the next 20-year period. The existing zoning of the study area could be made more consistent with the CPE’s identification of Core Areas and Industrial/Commercial Buffer areas.

The Port of Tacoma MIC was originally designated by PSRC in 2002. Considering PSRC’s current minimum eligibility criteria for designation as a new Industrial Growth Center MIC or an Industrial Employment Center MIC (as summarized in Section 3.1.1, *Local Policy Framework*)

the Port of Tacoma MIC today would not meet all of the eligibility criteria for an Industrial Growth Center MIC.

- Planned jobs within the MIC would be above the 10,000 minimum required for eligibility as an Industrial Growth Center but below the 20,000 minimum required for an Industrial Employment Center.

However, between the Core Area, heavy industrial zoning, and light-industrial zoning, more than 75% of the land area is zoned for core industrial uses. PSRC defines these core industrial uses as dominated by traditional industrial land uses including manufacturing, transportation, warehousing, and freight terminals.

It would be less consistent with Countywide Planning Policies to prohibit housing in the MIC.

Alternative 1 would not adjust the development standards to balance industrial viability with livability or compatibility with adjacent areas in Fife consistent with current Buffer Area policies, and M2 would continue to be included in the Buffer Area in proximity to Fife's City Center.

Alternative 1 is less consistent with the Puyallup Tribe of Indians Comprehensive Land Use Plan, which post-dates the MIC. The Tribe's plan promotes more habitat restoration, addressing employment growth as well as sea level rise.

Due to partial consistency with Centers criteria, Alternative 1 has a **significant impact on consistency with plans and policies.**

Land Use Compatibility

Land use incompatibilities are not expected under Alternative 1; the low employment growth is expected to result in modest activity increases over current levels. The mix of land uses would continue to focus on port and industrial uses. Housing is allowed in the M-1 zone in the southwest portion of the study area and is not prevalent or extensive, limiting the potential for incompatibility.

Alternative 1 allows limited new housing in the M-1 zone. As described in Chapter 7, *Air Quality and Greenhouse Gas Emissions*, adding housing would result in additional air quality exposure-driven impacts to an area considered vulnerable. Thus, there would be **significant land use compatibility impacts regarding adding housing into the study area.**

Land Use Transitions

Under the No Action Alternative, land use transitions are expected to remain the same as the current situation. Transition Areas in the MIC are the Industrial/Commercial Buffer Areas identified in the CPE. The M1 zone in the Buffer Area allows uses that are less intense than the Core Area/PMI areas, and it is a more compatible zone where it adjoins residential neighborhoods or mixed-use commercial areas. However, the current zoning of the Industrial/Commercial Buffer Area includes M2, which allows most heavy industrial uses and abuts non-industrial areas. The M2 zone is similar in the range of uses in the PMI zone, and M2 inclusion in the Buffer Area results in inconsistencies with existing policies that call for a broader mix of uses and utilization of performance standards to mitigate nuisance issues to adjacent communities.

Abrupt transitions occur when non-industrial adjacencies are impacted by neighboring high-intensity/high-impact industrial activities that result in excessive noise, air pollution, noxious odors, or impacts resulting from heavy industrial uses in the PMI and M2 zones where they abut nonindustrial areas. See **Table 3-13**; some locations have **significant adverse transition impacts**.

Per Chapter 7, *Air Quality and Greenhouse Gas Emissions*, Alternative 1 is expected to result in a significant unavoidable adverse impact due to non-industrial uses proximate to heavy industrial activities. Thus, Alternative 1 would result in significant land use transition impacts.

TABLE 3-13 Land Use/Zoning Transition – Alternative 1

Location	Existing Development Abutting Subarea	Alternative 1 No Action: Uses Allowed at Edges	High Intensity/High Impact Uses Abut Adjacent Non-Industrial Uses
Western Edge	Mixed use residential, commercial, and institutional/cultural	M-2 Heavy Industrial, M-1 Light Industrial	Significant Adverse: M2 abuts DMU. M2 across from DCC and DMU zone.
Southern Edge	Highway oriented commercial uses, tribal community called “Youngsville”	M-2 Heavy Industrial	Less than Significant: M2 abuts Regional Commercial, Neighborhood Commercial, and Industrial. One small area of M2 abuts Small Lot Residential.
Eastern Edge	Steep slopes, low density residential, open space, parks	M-2 Heavy Industrial, PMI, Port Maritime Industrial	Significant: Abuts residential zones up slope. Does not account for future land use planned in Fife City Center offering mixed uses.

SOURCE: BERK 2023

Sea Level Rise and Land Use

Alternative 1 provides a low employment density and limited housing density on top of existing employment uses, limiting potential exposures to hazards. Thus, the impacts of increasing exposure to sea level rise are **less than significant** within the planning period. However, Alternative 1 would also have limited redevelopment opportunities to put comprehensive habitat restoration and adaptation measures for sea level rise over the long term. See Table 3-12.

3.2.4 Alternative 2

Consistency with Plans & Policies

Under Alternative 2, amendments would be made to the Future Land Use Map and CPE maps. The Core Area could be reduced and the Buffer Area increased. Buffer areas illustrated on Alternatives maps in Chapter 2 could be implemented with designations that support standard General Industrial uses and new industrial formats in the Foss Peninsula and Portland Avenue Station (e.g., Transit-Oriented, R&D, Office, Retail), which are expected to be compatible with edge uses.

Land use changes over the 20-year planning horizon would be consistent with Comprehensive Plan goals and policies. Updates to these goals and policies are integrated into Alternative 2 and the new zones and development resulting from them tailored to advance those policies.

Land use patterns would be consistent with the plan's goals and policies regarding protections for industrial and maritime uses in Core Areas.

Under Alternative 2, conditions in the MIC would not meet PSRC's regional criteria for designation as an Employment Growth Center MIC regarding 2044 employment levels. See Section 3.3 for additional evaluation. **This is considered a significant impact** but can be mitigated by designation as a different type of MIC, or by incorporating some Industrial TOD into the MIC, which could assume greater job densities.

Between the Core Area, general industrial character area, and light-industrial character area, more than 75% of the land area is zoned for industrial uses as defined by PSRC for manufacturing, transportation, warehousing, and freight terminals. See Table 3-10.

Planned jobs within the MIC would be above the 10,000 minimum required for eligibility as an Industrial Growth Center MIC but below

the 20,000 minimum required for an Industrial Employment Center MIC. See Exhibit 3-22.

Alternative 2 is the most consistent with Countywide Planning Policies to prohibit housing in the MIC.

Alternative 2 provides a mix of heavy and light industrial uses adjacent to the City of Fife, and would implement updated compatibility measures in Subarea Plan policies and future codes.

Alternative 2 is more consistent than Alternative 1 with the Puyallup Tribe of Indians' Comprehensive Land Use Plan, since the Tribe's plan promotes an areawide habitat restoration plan, as well as protective and adaptation measures for sea level rise.

Land Use Compatibility

Alternative 2 would increase the level of activity in the study area by increasing jobs by 46%. Alternative 2 would reduce the potential for incompatible uses by reducing housing opportunities in the subarea over current zoning.

Land Use Transitions

Land use transitions under Alternative 2 would largely resemble those under No Action Alternative. See **Table 3-14**; some locations are identified as having **adverse land use transition impacts**. Measures will be implemented in the SR 509 to Fife and northeast Tacoma areas to improve land use compatibility with adjacent non-industrial uses. Alternative 2 proposes a reduction in intensity from heavy to light industry and implements performance standards, which would reduce compatibility impacts.

Per Chapter 7 (regarding air quality exposures), the progression from heavy industrial to light industrial while limiting non-industrial uses would reduce the subarea's emissions footprint and community exposure. Alternative 2 would have a **less-than-significant impact** in terms of land use transitions beyond the study area.

TABLE 3-14 Land Use/Zoning Transition Summary Evaluation – Alternative 2

Location	Existing Development Abutting Subarea	Alternative 2: Uses Allowed at Edges	High-Intensity / High-Impact Uses Abut Adjacent Non-Industrial Uses
Western Edge	Mixed use residential, commercial, and institutional/cultural	TOD Manufacturing, No Housing	Less than Significant: Foss Peninsula and Portland Avenue Station would have Transit-Oriented Manufacturing, with small scale crafting, retail, office, and R&D. More park and recreation and habitat restoration would also be incorporated.
Southern Edge	Highway oriented commercial uses, tribal community called “Youngsville”	General Industrial	Less than Significant: General Industrial abuts Regional Commercial, Neighborhood Commercial, and Industrial. One small area of General Industrial abuts Small Lot Residential. The Fife Transition Area (see Chapter 2, Alternative 2, Exhibit 2-4) would include more restoration opportunities and measures to improve land use compatibility.
Eastern Edge	Steep slopes, low density residential, open space, parks	Light Industrial, Commercial	Less than Significant: Light Industrial and compatible commercial uses, more habitat restoration opportunities and measures to improve land use compatibility.

SOURCE: BERK 2023

Sea Level Rise and Land Use

Alternative 2 provides a moderate employment density and no housing, limiting potential residential exposures to hazards from sea level rise. Alternative 2 would include more redevelopment opportunities, which could help the City implement a comprehensive habitat restoration and adaptation measures for sea level rise over the long term. See Table 3-12. With limited impacts during the 20-year life of the Subarea Plan and less exposure of future residences, Alternative 2 would have a **less-than-significant adverse impact on sea level rise**.

3.2.5 Alternative 3

Consistency with Plans & Policies

Under Alternative 3, the planning and policy context would undergo changes that would necessitate amendments to the Comprehensive Plan, specifically pertaining to the CPE identification of areas within the MIC as Core Areas and Industrial/ Commercial Buffer Areas. A significant portion of the Middle Peninsula area will be excluded from the currently identified Core Area. The City would also adopt the new Tideflats Subarea Plan encompassing the land use concepts and characteristics identified in this alternative.

Under Alternative 3, adjustments would be made to the Future Land Use Map land use designations. The boundaries of the Heavy

Industrial Future Land Use Map land use designation within the MIC would be modified to decrease the current area designated as Heavy Industrial.

Envisioned changes would include:

- The new **Core Area** will be reserved for Container/Port activities and related industrial and commercial support services.
 - Non-industrial uses within the new Core Area will be restricted.
 - Larger-scale habitat enhancement efforts will be concentrated along the Puyallup River to enhance water quality and salmon habitats and mitigate the impacts of climate change. Smaller strategic habitat sites will be integrated with new development.
 - More industrial land would be repurposed for habitat restoration alongside measures to address the implications of sea level rise across the entire MIC.
 - Shoreline uses within the Industrial/Commercial Buffer Areas will focus on accommodating water-oriented uses.
 - Industrial/Commercial Buffer Areas will afford greater flexibility for non-industrial uses.
- The **Portland Avenue Station** area would be characterized by transit-oriented development, allowing for light industrial uses. New housing types will be restricted to workforce housing and live-work units situated in proximity to the future light rail station.
- The **Foss Peninsula** area would be comprised of transit-oriented manufacturing that supports industrial activity near the future light rail station. Industrial uses would include smaller firms, certain retail components, craft production, and port-related offices and research and development facilities. Efforts to augment public shoreline access and recreation opportunities would be undertaken.
- The **Middle Peninsula** would see the development of light industrial type uses.
- The **SR 509 to Fife** area would be characterized by a blend of light industrial and compatible industry-supporting commercial uses. Habitat restoration projects will contribute to enhanced water quality, salmon habitats, and implementation of strategies addressing climate change impacts.
- **The northeast Tacoma** area would have a light industrial character including compatible commercial and civic land uses. Emphasis would be placed on shoreline and habitat restoration to bolster salmon migration, alongside improved public shoreline access and additional recreation opportunities.

Consistency with plans and policies under Alternative 3 is similar to those outlined for Alternative 2 with the following exceptions:

- **Housing.** Alternative 3 is expected to involve the construction of approximately 490 workforce housing and live-work units over the 20-year planning horizon, in close proximity to the forthcoming light rail station.
 - Housing could conflict with Multicounty Planning Policies in VISION 2050, which discourage the establishment of new housing within MICs (e.g., MPP-EC-22 and MPP-DP-50). Similar policy directives are echoed in the Comprehensive Plan, such as the CPE (e.g., CP-2.5). However, Alternative 3 limits the uses to live/work. The inclusion of such housing is expected to be restricted, mitigating the potential impact of heightened residential usage within the Industrial/Commercial Buffer Areas.
 - The Countywide Planning Policies are more explicit about prohibition of housing. Live/work is not specifically limited.
 - Alternative 3 demonstrates alignment with policies in the City's Comprehensive Plan that endorse: the expansion of affordable housing in immediate proximity to employment opportunities and transit facilities, including within the MIC (e.g., H-4.4); and the formulation of development and performance standards that ensure the MIC's ongoing vitality while safeguarding the quality of life in adjacent non-industrial zones (e.g., DD-9.5, DD-9.6). Similarly, existing Comprehensive Plan policies in the CPE pertaining to the Industrial/Commercial Area advocate for development criteria that ensure compatibility with neighboring areas of lower intensity (e.g., CP-2.3, CP-2.6).
 - Overall, the impacts on consistency with plans and policies resulting from this alternative are likely to result in **moderate** impacts, including Future Land Use Map redesignations and related rezoning to align with the objectives for the Industrial Commercial Areas, adjustments to development and performance standards, and the introduction of housing.
- **Employment Level.** Alternative 3 is the only alternative that meets the expected job levels of 20,000 consistent with VISION 2050 criteria for Industrial Employment Center MICs.
- **Industrial Land Use.** The Centers designation indicates 75% of the land area should be zoned for traditional industrial land uses, like manufacturing, transportation, warehousing, and freight terminals. Commercial uses shall be strictly limited. The Core Area is nearly 70% of the study land use area. The final 30% is made up of light industrial with compatible commercial and mixed uses. The implementing zoning must be designed to favor light industrial uses that fit the criteria and have a minor allowance for commercial uses.

Alternative 3 would have a significant adverse impact because of an inconsistency with Countywide Planning Policies regarding the use of housing (even live/work units), whereas it is consistent with PSRC criteria.

Land Use Compatibility

Alternative 3 has the highest planned employment and the highest amount of housing, although modest in total numbers. There would be increased activity levels. There are more mixed uses in Transition Areas with light industrial, transit-oriented industrial, compatible commercial, and live/work in some locations. Greater attention to site planning could be needed with the mix of uses.

Based on Chapter 7, Alternative 3 is expected to result in a **significant unavoidable adverse impact regarding air quality** due to non-industrial uses proximate to heavy industrial activities inside the study area.

Land Use Transitions

Given light industrial and a mix of compatible uses to the west, south, and east, Alternative 3 would have the greatest compatibility with uses to the south and east. It would not result in adverse impacts on the west. See **Table 3-15**. The physical transitions between uses are considered compatible.

In terms of air quality Alternative 3 is expected to result in a **significant unavoidable adverse impact regarding air quality** due to non-industrial uses proximate to heavy industrial activities outside the study area.

Sea Level Rise and Land Use

Alternative 3 provides the most employment density and most housing, with the greatest employee and resident exposures to climate-exacerbated hazards like sea level rise. Alternative 3 would adapt to sea level rise, which may mean employment in smaller footprints. Fish and habitat restoration and other measures are increased and maximized, such as along the Puyallup River, Hylebos Waterway, and Hylebos and Wapato creeks. See Table 3-12.

TABLE 3-15 Land Use/Zoning Transition Summary Evaluation – Alternative 3

Location	Existing Development Abutting Subarea	Alternative 3: Uses Allowed at Edges	High-Intensity / High-Impact Uses Abut Adjacent Non-Industrial Uses
Western Edge	Mixed use residential, commercial, and institutional/cultural	TOD Manufacturing, Housing	Less than Significant: Foss Peninsula and Portland Avenue Station would have Transit-Oriented Manufacturing, with small-scale crafting, retail, office, and R&D. More park and recreation and habitat restoration would also be incorporated. Live/work would be allowed at Portland Avenue Station like today’s M1 zone.
Southern Edge	Highway oriented commercial uses, tribal community called “Youngsville”	Mixed Use Commercial, Light Industrial, Housing	Compatible: Light Industrial with compatible commercial would abut Regional Commercial, Neighborhood Commercial, and Industrial. One small area of Light Industrial abuts Small Lot Residential. The Fife Transition Area would include more restoration opportunities and measures to improve land use compatibility.
Eastern Edge	Steep slopes, low density residential, open space, parks	Light Industrial, Commercial	Compatible: Light Industrial and compatible commercial and civic uses; more habitat restoration opportunities. More shoreline access and recreation. Public acquisition of private properties on hillside adjacent to MIC. Added compatible commercial and civic uses could better align with Fife City Center to the southeast.

SOURCE: BERK 2023

With limited impacts during the 20-year life of the Subarea Plan, Alternative 3 would have a **less-than-significant adverse impact on sea level rise**. Over the longer term, more residences and employees could be exposed to climate change impacts, although Alternative 3 would be designed to protect, retreat, adapt infrastructure and land uses and would have the potential to avoid significant impacts. Adaptive management may be required.

3.2.6 Alternative 4

Consistency with Plans & Policies

Alternative 4 is similar to the No Action Alternative, as it does not involve changes to the Comprehensive Plan future land use map. Similar to Alternative 1, due to partial consistency with criteria, Alternative 4 has a **significant impact on consistency with plans and policies**.

Alternative 4 would potentially amend policies or implementation strategies around enhancement of shoreline access and recreation, sea level rise adaptation, coordinated transportation mitigation agreements, and decarbonization. This would be an improvement (benefit) in policy alignment with state, regional, and local plans for sustainability and resiliency. See Chapter 2, *Alternatives*.

Land Use Compatibility

Under Alternative 4, land use incompatibilities would be similar to those observed for Alternative 1, with similar growth and allowed land uses.

Land Use Transitions

Transitions to the western, southern, and eastern edges would be similar to Alternative 1, except that more smaller habitat restoration sites would be implemented as development occurs.

Sea Level Rise and Land Use

Like Alternative 1, Alternative 4 provides a low employment density and limited housing density on top of existing employment uses, limiting potential exposures to hazards. Alternative 4 would also have limited redevelopment opportunities to put comprehensive habitat restoration and adaptation measures for sea level rise over the long term. It would, however, include some accelerated habitat restoration and efforts to consider sea level rise adaptation to protect industrial uses and essential public facilities. See Table 3-12.

3.3 Avoidance, Minimization and Mitigation Measures

Many of the potential land use impacts are mitigated down to non-significant level by incorporated Subarea Plan features that are a part of the Proposed Action or by existing regulatory commitments that would be applied with or without the Proposed Action. Especially important mitigating features are highlighted below.

3.3.1 Mitigation Measures Common to All Alternatives

Existing Regulations and Commitments. The regulatory framework would apply to all alternatives including:

- **Shoreline Master Program (SMP).** The existing SMP regulations are unchanged and will continue to apply to all new development. Many of the SMP regulations support protections for industrial maritime activities at the shorelines in industrial areas under all alternatives. These designations require water-dependent and water-related uses at the shoreline and will provide protection from incompatible land uses for all alternatives for land that is within 200 feet of the shoreline. No-net-loss of shoreline ecological function with any shoreline activity is required, and voluntary habitat restoration is encouraged.
- **Application of the City's Noise Ordinance (TMC Chapter 8.122).** can mitigate impacts from noise that is 10 A-weighted decibels (dBA) greater than outdoor ambient noise during the day or 5 dBA at night.
- **Application of Puget Sound Clean Air Agency Air Operating Permit Conditions.** Industrial and commercial development is subject to regional air quality permit requirements and federal and state air quality standards. See Chapter 7, *Air Quality and Greenhouse Gas*.

Plan and Policy Consistency – Fife. Heavy industry immediately adjacent to a mixed-use town center could be inconsistent with Tacoma Buffer Area policies. Alternatives 1 and 4 could incorporate Alternatives 2 and 3 transition concepts. Other strategies could include landscaping and buffer standards as well as tree canopy to address aesthetic impacts. The City could also limit the range of uses within the Buffer zones to avoid land use compatibility impacts on the Fife Town Center.

Plan and Policy Consistency – Puyallup Tribe of Indians.

Alternatives 1 and 4 retain current land use designations and zoning. The lack of a Future Land Use Map in the Puyallup Tribe of Indians Comprehensive Land Use Plan means determining compatibility with Alternatives 1 and 4 is challenging. Alternatives 2, 3, and 4 incorporate habitat conservation concepts to a greater degree, which is more consistent with the Tribe's policies. The adjustment to Buffer Areas and policies would make Alternatives 2 and 3 more consistent

with tribal plans. Mitigation measures that could benefit all of the development alternatives include:

- Encourage the Puyallup Tribe of Indians to work in collaboration with the City of Tacoma to develop a Future Land Use Map and strategy for ensuring land use compatibility.
- The shift from Heavy to Light Industry in Alternatives 2 and 3 may alleviate some of the potential incompatibilities. Or, the City could refine the uses that are allowed in M2 zones to limit high-impact uses or consider a discretionary permit for review.
- The City could define a buffer dimension from Tribal properties to establish a heightened review and permit process (e.g., 1,000 feet).
- Maintain consultation, a legal requirement from the Land Claims Settlement, to solicit input from the Tribe on permits within the reservation. The Planned Action can specify a notice and permit review procedure to facilitate project-level consultation and allow discretion to condition a project to meet Subarea Plan policies and Planned Action mitigation measures, and ensure that treaty rights are respected based on input from the Tribe as part of the Planned Action formal process.

Land Use Compatibility and Transitions. The City could limit significant housing development in adjacent mixed-use zones (e.g., Tacoma Dome area) to reduce potential impacts related to inadequate transitions from industrial to nonindustrial areas. The City could develop light and glare standards for larger or taller developments in line of sight with adjacent uses. These standards should address placement, light output, direction, and shielding of any exterior illumination above a given height to reduce light and glare emissions to adjacent non-industrial areas. See also mitigation by alternative below.

Sea Level Rise. All alternatives should incorporate sea level rise mitigation over the 20-year life of the Subarea Plan. In addition, measures to ensure that development is forward-looking and incorporates measures anticipating future sea level rise impacts beyond the 20-year period could be considered:

- Account for up to 2 feet of relative sea level rise (RSLR) in the short-term design and 5 feet RSLR in the long-term planning of high-risk resources.
- Utilize lower, less-conservative RSLR projections in the planning of low-risk resources (e.g., public spaces and trails).
- Employ a phased RSLR adaptation approach; at initial planning stages, account for potential future adaptation measures.

Supplementary adaptation measures can then be implemented and adjusted over time.

- Monitor and re-evaluate sea level rise hazards on a regular basis.
- Maintain flexibility in sea level rise adaptation strategies. Ensure that new or redeveloped infrastructure or uses do not preclude implementation of future adaptation strategies designed for more severe RSLR scenarios.
- Coordinate RSLR adaptation efforts with regional initiatives.
- Seek and attempt to maximize potential hazard mitigation co-benefits (e.g., wetland restoration).

3.3.2 No Action Alternative

The City could accept a lower level of employment density and achieve center criteria as an Industrial Growth Center MIC under VISION 2050. The City could further limit housing in the M1 zone to be more consistent with Countywide Planning Policies.

3.3.3 Alternative 2

The City could increase job density in some Transition Areas in Buffer Areas similar to Alternative 3 to achieve the desired employment density to meet the criteria for an Industrial Employment Center MIC.

Application of building and site design standards to promote compatibility could be included in new zoning standards (e.g., pedestrian-level design of small-scale manufacturing, office, retail; light and glare reduction of multistory TOD at station).

3.3.4 Alternative 3

The City could limit the geography of allowed housing and focus on industry-supportive housing (e.g., industrial live/work and caretaker units), provided it fits the Countywide Planning Policy prohibition of housing.

Application of building and site design standards to promote compatibility could be included in new zoning standards (e.g., pedestrian-level design of small-scale manufacturing, office, retail; light and glare reduction of multistory TOD at station).

3.3.5 Alternative 4

See Alternative 1.

3.4 Significant Unavoidable Adverse Impacts

Some degree of inconsistency between the expected land use pattern and plans and policies was found for all the alternatives. Since consistency of land use patterns with plans and policies requires interpretation and balancing with many policies, it is common for some inconsistency to exist, while maintaining an overall level of consistency. Areas of policy inconsistency can be avoided through corresponding plan amendments to the One Tacoma Comprehensive Plan and the Countywide Planning Policies, or through changes to the MIC boundaries or Core/Transition Areas. Thus, significant adverse impacts can be avoided with mitigation.

The potential for inadequate transitions from industrial to nonindustrial areas is highest along the west and east edges abutting mixed-use and residential uses, respectively. While topography (e.g., slopes and waterways) can reduce physical differences in development types between industrial and non-industrial uses, noise and air quality or light and glare impacts could travel beyond. Application of existing regulations and other potential mitigation could reduce impacts to a less-than-significant level.

Significant adverse impacts of sea level rise on alternatives and exacerbation of vulnerability by alternatives can be mitigated in the 20-year life of the Subarea Plan due to the low to moderate exposure and advanced habitat mitigation. Beyond the 20-year life of the plan, more employees and potentially limited residents could be unavoidably exposed to climate-induced hazards in the Tideflats study area. However, it could be made less-than-significant by requiring new construction and redevelopment to incorporate proactive climate mitigation measures, ongoing monitoring, and adaptive management.

CHAPTER 4 Population, Employment, and Housing

This chapter describes existing demographic conditions and adopted Comprehensive Plan targets for the Tideflats study area, based on available city, regional, state, and federal data, and on adopted plans.

4.1 Affected Environment

4.1.1 Existing Policies and Regulations

The study area is part of the City of Tacoma planning area and is a center for jobs. This section describes the county and city policies regarding employment growth since the growth is ultimately allocated across the city including in the subarea. While not a focus for housing and residents, the study area abuts mixed use and residential areas; understanding growth strategies in residential areas abutting the study area is also appropriate.

The City of Tacoma plans in coordination with Pierce County and other jurisdictions. The city's 2015 Comprehensive Plan looks forward to Tacoma's long-term future, ensuring that growth happens in a beneficial, healthy, and sustainable way. In 2024, the City will adopt an updated Comprehensive Plan per Washington Growth Management (GMA) requirements for periodic review. The current Comprehensive Plan conforms to Pierce County's Countywide Planning Policies (Pierce County 2022a) and guidance from the Puget Sound Regional Council (PSRC) VISION 2040 (PSRC 2009) and will soon be amended to match recent Countywide Planning Policy (CPP) amendments and VISION 2050 requirements (PSRC 2020).

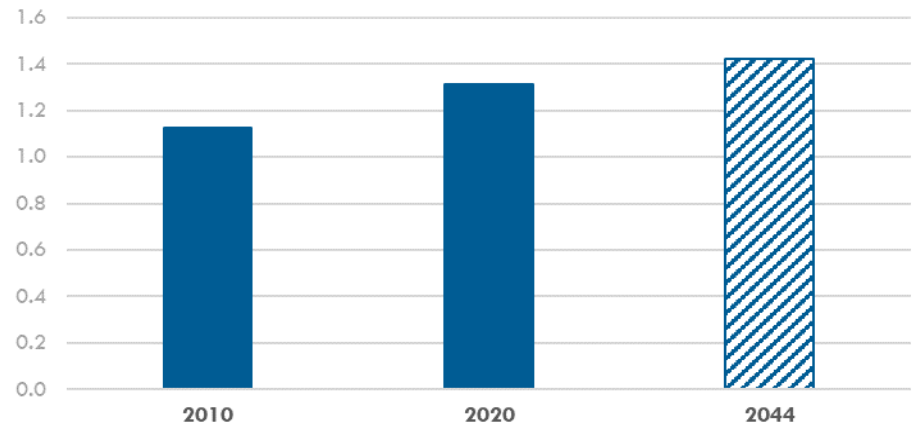
Consistent with VISION 2050, new CPP growth targets set forth 105,977 new residents and 70,800 new jobs by 2044 in the city as a whole. These growth numbers are reduced from the 2015–2035 targets of 127,000 units and 97,000 jobs. See **Table 4-1**.

TABLE 4-1 Growth Targets and Assumptions – City of Tacoma, 2020–2044

	Current 2020	Growth Targets 2020–2044	2044
Population	219,346	105,977	325,323
Housing	92,310	42,865	135,175
Employment	121,183	70,800	191,983

SOURCES: Pierce County Ordinance No. 2022-46s 2022; Pierce County Ordinance No. 2023-22s 2023

Adopted 2044 employment targets for the city as a whole show a large increase in Tacoma’s jobs to housing ratio, from 1.31 to 1.42. The jobs to housing ratio is an indicator of whether there is sufficient housing for employees in a given area, and indirectly reflects commute lengths. A ratio between 0.75 and 1.5 reflects the ability to reduce vehicle miles travelled (EPA 2014). The employment targets and the resulting shift in jobs to housing ratio illustrate the importance of job growth to fulfilling the envisioned role of Tacoma as a Regional Employment Center. The Port of Tacoma MIC is a Manufacturing Industrial Center and is meant to take a share of the city’s jobs with a focus on maritime and manufacturing jobs that provide wages supporting local and regional residents. See **Exhibit 4-1**.



SOURCES: Prepared by BERK from PSRC Employment Data derived from State Employment Security Department Covered Employment Estimates ESD 2023; Pierce County CPPs 2022a

EXHIBIT 4-1 Jobs to Housing Ratio – City of Tacoma, 2010–2044 Growth Allocations

There are currently about 11,000 existing jobs in the Port of Tacoma MIC, about 9% of citywide jobs (see Appendix E). This was estimated based on baseline jobs in the 2014 Pierce County Buildable Lands Report, and represents total jobs. That number is about 10% to 15%

above covered employment estimates tracked by PSRC and the Employment Security Department; covered estimates address jobs covered by unemployment insurance. Based on PSRC estimates, the area has about 9,941 covered jobs and adding 15% of uncovered jobs could equal about 11,695 jobs, essentially the same as the 2014 report. See **Table 4-2**.

TABLE 4-2 Existing Jobs in the Tacoma Tideflats Study Area

Designation	Total Parcel Acres	Existing Jobs (2014 Buildable Lands Report)	Covered Employment Estimates 2022 PSRC-ESD*
Buffer	552	3,001	
Core Area	3,397	8,477	
Total	3,949	11,479	9,941–11,695

SOURCES: Pierce County 2014; PSRC 2023; City of Tacoma 2023

NOTES: Recent 2022 estimates from PSRC indicate employment of 9,941 in 2022 in the MIC. Covered employment refers to jobs "covered" under the state's Unemployment Insurance Program and constitutes 85%–90% of total employment. Covered employment estimates in the MIC over the 2010–2022 period are fairly stable with a median of 9,990. Adding 15% to the covered employment estimate would achieve 11,695 jobs, generally similar to the 2014 Buildable Lands estimate.

The base year employment shows most jobs are located in the Core Area, which is the largest part of the study area. Core Areas contain port and port-related container industrial areas (Goal CP-1 of the Tacoma Comprehensive Plan). Buffer areas are transition zones between the Core and abutting uses in the study area. An Industrial/Commercial Buffer Area is defined around the Core Area that will protect the continued viability of the Core Area while providing for a compatible Industrial/Commercial Buffer to development in the larger surrounding area (Goal CP-2 of the Tacoma Comprehensive Plan). See Chapter 3, *Land and Shoreline Use – Plans and Policies*, Exhibit 3-2, for a map of the Core and Buffer areas (Container Port Core and Industrial/Buffer Area).

Criteria for Employment in Centers

The PSRC sets forth criteria for designating Industrial Employment Centers, a form of MIC. Relevant to population, employment, and housing, the activity levels and mix of employment criteria are listed below. See Chapter 3, *Land and Shoreline Use – Plans and Policies*, for additional criteria regarding 75% of the land to be used for core industrial uses.

- **Activity Levels:** There must be at least 10,000 existing jobs. The jurisdiction must be planning for at least a total of 20,000 jobs. The center must have sufficient zoned development capacity to

adequately accommodate targeted levels of growth. Because it is not time-bound, zoned capacity can allow higher levels of development and a more compact and mature urban form in regional centers.

- **Mix of Employment:** At least 50% of the employment must be industrial employment.

An Industrial Growth Center, a smaller form of a MIC, has the following criteria:

- **Activity Levels:** There must be at least 4,000 existing jobs in the center. The jurisdiction must be planning for at least a total of 10,000 jobs in the center.
- **Mix of Employment:** At least 50% of the employment must be industrial employment.

Currently, the study area is classified as an Industrial Growth Center by PSRC in VISION 2050. Through the subarea planning process, the City can demonstrate the ability to meet the criteria for Industrial Employment Centers.

The recent Pierce County Buildable Lands Report (revised 2022) indicates that the PMI zone that makes up the vast majority of the study area alone has capacity for 11,526 jobs (Pierce County 2022). Combined with the base year jobs, this would show capacity for more than 20,000 jobs. In addition, there is greater capacity for jobs in the M1 and M2 zones that are located in the buffer area.

Economic Development

Goals and policies in the Comprehensive Plan that support a growing vital city with economic development choices are listed below (City of Tacoma 2019). See additional information on economic development in Appendix H.

Goal EC-1. Diversify and expand Tacoma's economic base to create a robust economy that offers Tacomans a wide range of employment opportunities, goods, and services.

Policy EC-1.5. Encourage commercial and industrial development by ensuring the availability of suitable sites for development and providing appropriate zoning and infrastructure.

Policy EC-1.6. Develop relationships, partnerships, and programs to promote international business and trade opportunities in Tacoma.

Policy EC-1.10. Leverage Tacoma's industry sector strengths and assets to position Tacoma as a leader and innovator in the local, regional, and state economy.

Policy EC-1.11. Identify and regularly update Tacoma's target industries to better leverage the city's economic position within the region and to respond to strategic opportunities as they arise.

Policy EC-1.12. Actively seek investments to grow Tacoma's presence in the following target industries:

- a) Bio-medical and medical
- b) Information technology and cyber security
- c) Professional services
- d) Industrial and manufacturing
- e) Tourism and hospitality
- f) Creative economy
- g) International trade
- h) Finance and Insurance

Goal EC-2. Increase access to employment opportunities in Tacoma and equip Tacomans with the education and skills needed to attain high quality, living wage jobs.

Policy EC-2.1. Maintain adequate employment land and public facilities that support living wage jobs that do not require a 4-year college degree and facilitate career advancement for low income people.

Goal EC-3. Cultivate a business culture that allows existing establishments to grow in place, draws new firms to Tacoma and encourages more homegrown enterprises.

Policy EC-3.10. Promote key retail, office, and manufacturing opportunity sites, as identified in the city's Economic Development Strategic Plan, Subarea Plans, and other planning documents.

Goal EC-6. Create robust, thriving employment centers and strengthen and protect Tacoma's role as a regional center for industry and commerce.

Manufacturing/Industrial Centers

The study area is considered a MIC in the Comprehensive Plan and by PSRC in VISION 2050. Comprehensive Plan policies seek to protect and invest in the study area, which is largely in public and tribal ownership in the Core Area as well as much of the Buffer Area. See

Chapter 3, *Land and Shoreline Use – Plans and Policies*, Exhibit 3-2 for a map of the Core and Buffer Areas identified in the Container Port Element (CPE), and Exhibit 3-16, illustrating Port-owned properties, Tribal fee ownership and trust properties, and other public lands. Private ownership lands are largely on the Foss Peninsula, Middle Peninsula, the central area between the Puyallup River and Blair Waterway, and the east side of Hylebos Waterway.

Policy EC–6.19. Provide industrial land and encourage investment in necessary services that support industrial business retention, growth and traded sector competitiveness as a West Coast trade and freight hub, a regional center of diverse manufacturing and a widely accessible base of living wage jobs, particularly for underserved and underrepresented people.

Policy EC–6.20. Strictly limit Comprehensive Plan Map amendments that convert industrial land and consider the potential for amendments to otherwise diminish the economic competitiveness or viability of prime industrial land.

Policy EC–6.21. Protect and preserve sufficient land use capacity for water-dependent and related industrial uses within the city’s industrial shorelines.

Policy EC–6.22. Maintain properties currently developed with industrial users and strive to offset the reduction of development capacity with the addition of prime industrial capacity that includes consideration of comparable site characteristics.

Policy EC–6.23. Pursue regional capital improvement opportunities to provide a competitive advantage for Tacoma’s industrial districts and ensure that industrial districts have the necessary infrastructure and capacity to support businesses engaged in activities such as transportation, logistics and international trade.

Policy EC–6.24. Coordinate with the Port to market and recruit businesses to vacant and undeveloped Port-owned properties.

Policy EC–6.25. Take advantage of trade relationships established by the Port of Tacoma to promote business attraction and expansion.

Policy EC–6.26. Promote and administer a sister cities program that encourages international partnerships and exchanges focused on education, culture, trade, foreign direct investment, and business attraction.

Policy EC–6.27. Explore expansion of the Urban Clean Water Technology Innovation Partnership Zone and continue to support marketing of available properties.

Housing

Goals and policies in the Comprehensive Plan that support a growing vital city with housing choices are listed below (City of Tacoma 2019).

Goal H-3. Promote safe, healthy housing that provides convenient access to jobs and to goods and services that meet daily needs. This housing is connected to the rest of the city and region by safe, convenient, affordable multimodal transportation.

Policy H-3.2. Locate higher density housing, including units that are affordable and accessible, in and around designated centers to take advantage of the access to transportation, jobs, open spaces, schools, and various services and amenities.

Policy H-3.3. Promote transit supportive densities along designated corridors that connect centers, including duplex, triplex, cottage housing, and townhouses.

Policy H-3.4. Strive to accommodate 80% of the city's housing targets within and around designated centers.

Policy H-3.6. Locate new affordable housing in areas that are opportunity rich in terms of access to active transportation, jobs, open spaces, high-quality schools, and supportive services and amenities.

Goal H-4. Support adequate supply of affordable housing units to meet the needs of residents vulnerable to increasing housing costs.

Policy H-4.4. Facilitate the expansion of a variety of types and sizes of affordable housing units and do so in locations that provide low-income households with greater access to convenient transit and transportation, education and training opportunities, Downtown Tacoma, manufacturing/industrial centers, and other employment areas.

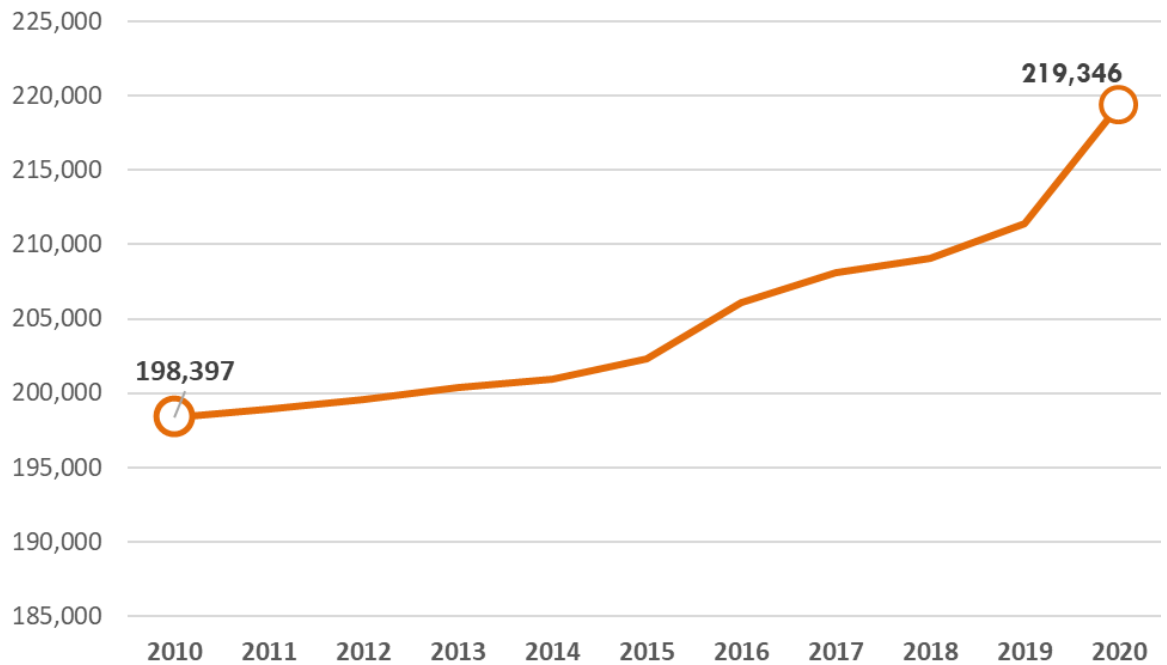
Goal H-5. Support access to resource efficient and high performance housing that is well integrated with its surroundings, for people of all abilities and income levels.

Policy H-5.2. Promote housing that is protected from noise, pests, hazardous environmental conditions, and materials.

4.1.2 Current Conditions

Population

The 2020 population of the City of Tacoma was 217,827 people (**Exhibit 4-2**), representing roughly a quarter of the population of Pierce County. Given its role as a MIC, the Tideflats study area has a very small population overall and a very small proportion of the city’s residents. Estimates for 2020 indicate that the study area has a population of 1,114 including group quarter population. See Appendix F.



SOURCE: City of Tacoma 2020

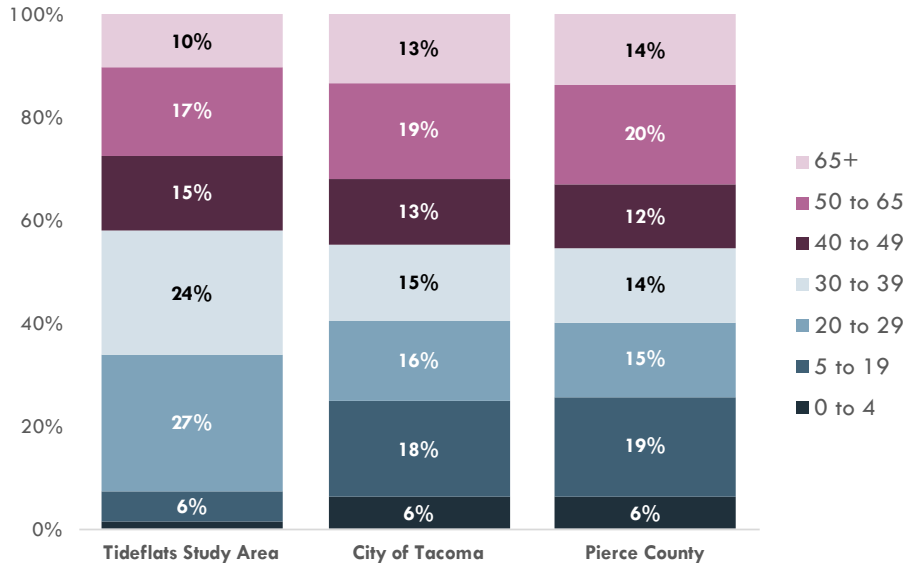
EXHIBIT 4-2 Historical and Current Population – City of Tacoma, 2020

Demographics

The Tideflats study area has a larger proportion of residents who are between the ages of 20 and 39 (58%) relative to the city (31%) or county (29%). See **Exhibit 4-3**.

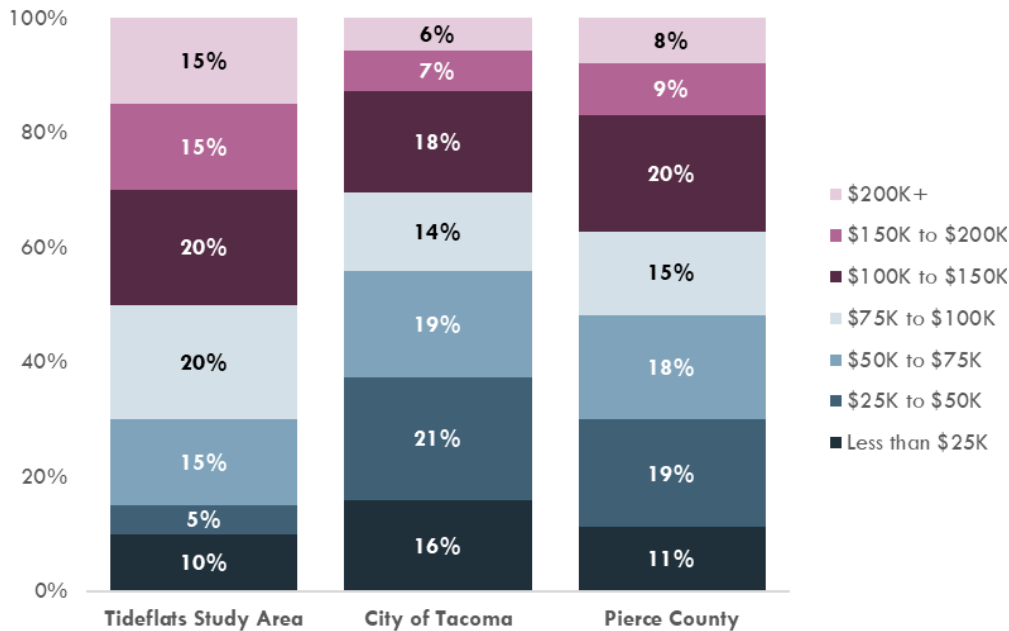
Smaller proportions of study area households earn less than \$50,000 (15%) compared to the city (37%) and county (30%). Roughly half of study area residents earn \$100,000 or more, compared to 31% in the city and 37% in the county. See **Exhibit 4-4**.

A larger proportion of study area residents have bachelor’s degrees or more (42%) compared to the city (26%) and the county (32%). See **Exhibit 4-5**.



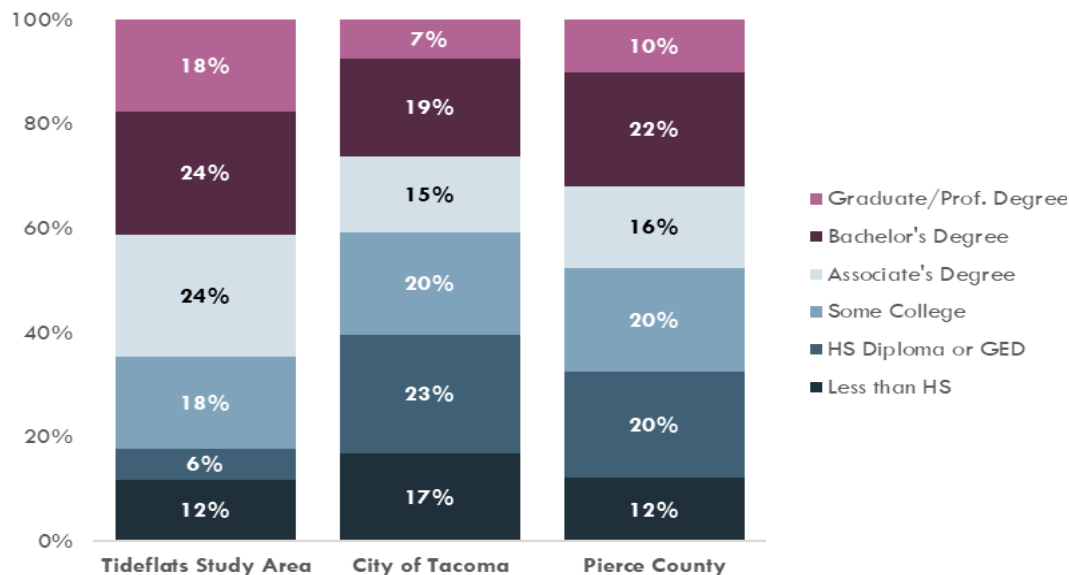
SOURCES: City of Tacoma 2023; BERK 2020

EXHIBIT 4-3 Age – Study Area, City of Tacoma, and Pierce County, 2020



SOURCES: Esri 2020; BERK 2020

EXHIBIT 4-4 Household Income – Study Area, City of Tacoma, and Pierce County, 2020



SOURCES: Esri 2020; BERK 2020

EXHIBIT 4-5 Educational Attainment – Study Area, City of Tacoma, and Pierce County, 2020

Housing Profile

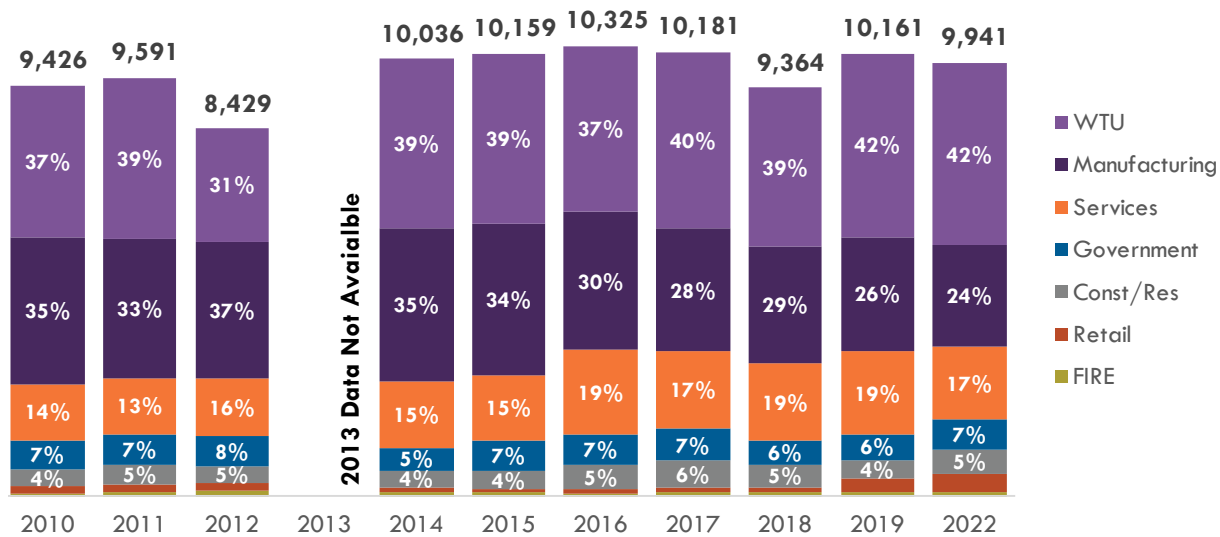
As a MIC, there is limited housing in the study area. No multi-family residential development is located within the study area, although some non-residential uses do include accessory caretaker units. Recent Assessor data show a total of four dwelling units.

Population numbers do not include detainees at the Northwest Detention Center (NWDC), an immigration prison located in the study area. The NWDC was opened in 2004 and is a privately owned and operated facility on behalf of U.S. Immigration and Customs Enforcement. The NWDC currently has capacity for 1,575 people, making it one of the largest immigration prisons in the United States (Northwest Immigration Rights Project 2020). The prison is expected to close in 2025 when the contract with U.S. Immigration and Customs Enforcement (ICE) expires, as the state has passed a law banning private detention facilities.

Employment Profile

As of 2019, covered employment within the Port of Tacoma MIC was 10,161 but by 2022 reduced to 9,941. Still, the jobs are 515 more than the level in 2010 at 9,426. These job estimates are based on jobs covered by state unemployment insurance and likely are 85–90% of total jobs. See Table 4-2.

As of 2022, about 66% of employment in the MIC is within the Wholesale Trade, Transportation, and Utilities (WTU) sector (42%) as well as the Manufacturing sector (24%).¹ Much of the growth over the past 10 years has been driven by the WTU sector while the Manufacturing sector has shrunk from 2010 levels. Other significant industry sectors include Services (19%), Government (6%), and Construction & Resources (4%). See **Exhibit 4-6**.



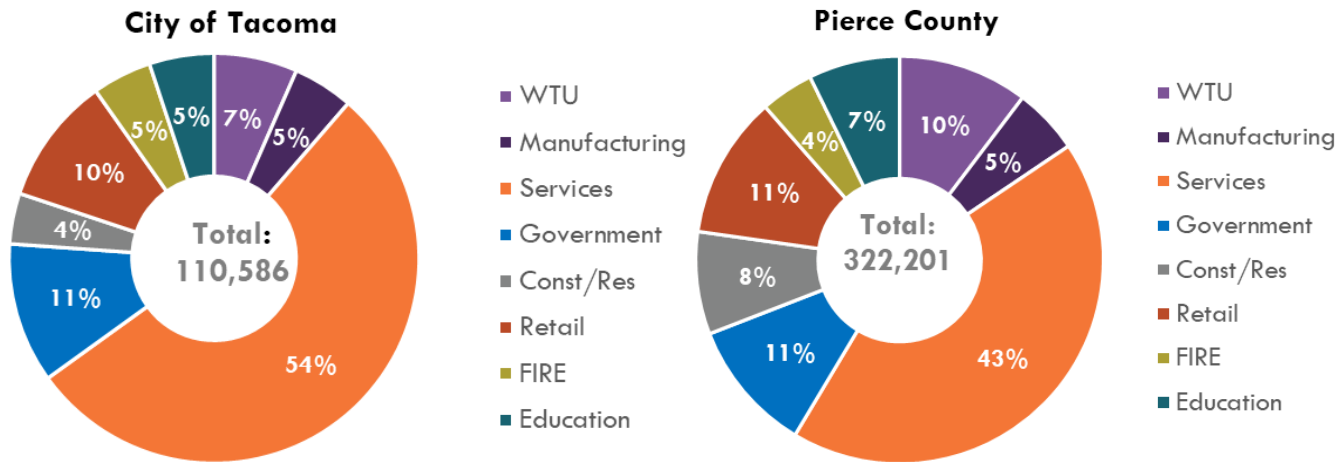
Year	Const/Res	FIRE	Manufacturing	Retail	Services	WTU	Government	Education	Total
2010	378	60	3,342	172	1,284	3,504	686	-	9,426
2011	455	112	3,198	157	1,273	3,693	703	-	9,591
2012	381	137	3,135	183	1,341	2,583	669	-	8,429
2013	Data Not Available								
2014	382	84	3,501	112	1,528	3,894	535	-	10,036
2015	420	89	3,469	81	1,506	3,915	679	-	10,159
2016	543	64	3,145	117	1,939	3,813	703	-	10,325
2017	607	82	2,810	130	1,778	4,044	730	-	10,181
2018	504	90	2,679	119	1,784	3,639	549	-	9,364
2019	437	103	2,619	294	1,912	4,220	576	-	10,161
2022	534	105	2,353	419	1,675	4,164	692	-	9,941

NOTES: Total employment estimates for 2013 are currently unavailable. Reductions in jobs due to the West Rock closure in 2023 are not reflected in the figures.

EXHIBIT 4-6 Port of Tacoma MIC Employment by Sector, 2010–2022 Covered Employment

¹ Per PSRC MIC consistency checklists, traditional industrial land uses include manufacturing, transportation, warehousing, and freight terminals. See: <https://www.psrc.org/media/7013>.

Exhibit 4-7 illustrates employment by sector in Tacoma and Pierce County for 2019. Manufacturing and WTU jobs make up about 12% and 14% of total employment in Tacoma and Pierce County, respectively. Services are by far the most significant employment sector in both Tacoma and Pierce County at 53% and 44% of total employment, respectively.



SOURCES: PSRC 2020; BERK 2020

EXHIBIT 4-7 Tacoma and Pierce County Employment by Sector, 2022

Economic Impact Assessment

While established local and regional industry strengths are reflected in the study area, the changing role of ports; trends in sectors such as logistics, warehousing, transportation, and utilities and manufacturing; changes to shipping technology; and growing interest in environmental sustainability will influence and shape the development and composition of the area in the years to come (World Bank Transport Division 2007).

As a manufacturing and industrial center, the Port of Tacoma MIC is a significant driver of the local and regional economy. The industrial activity in the MIC is inextricably linked to other key sectors in the greater Pierce County and Washington State economy, such as retail, services, and agriculture. For example, food products are stored, packaged, and distributed from the study area to restaurants, grocery stores, and other businesses throughout the city and Pierce County region. Examples of similar linkages to the local and regional economy include shipbuilding firms supplying the region’s maritime economy and others.

One way to assess and quantify the impact of these linkages is to quantify the purchasing patterns of key sectors as they relate to goods and services demanded by other sectors. This form of analysis is referred to as an input-output analysis.

To measure the economic impact of the private businesses in the Port of Tacoma MIC on Pierce County, a 2019 study from the Center of Business Analytics at the Milgard School of Business at the University of Washington-Tacoma utilized an input-output model. The results from this study are shown in **Table 4-3**. It should be noted that this study was not a professionally prepared study, and findings should be used for reference purposes only.

TABLE 4-3 Estimated Total Impacts from Private Businesses in the Port of Tacoma MIC

Economic Impact	Employment	Economic Output
Direct Economic Impact	5,165	\$1.99 billion
Indirect/Induced Economic Impact	10,640	\$3.31 billion
Total Economic Impact	15,805	\$5.30 billion

SOURCES: Center for Business Analytics at Milgard School of Business University of Washington Tacoma 2019; BERK 2020

The UW-Tacoma study found that all private businesses in the Port of Tacoma MIC directly employed a total of 5,165 people, and those businesses directly generated nearly \$2 billion in annual economic output. Those businesses and employees were estimated to then support an additional 10,640 jobs indirectly in Pierce County, which are estimated to generate more than \$3 billion in annual economic output. The total impact of the private businesses in the Port of Tacoma MIC on Pierce County is estimated to support 15,805 jobs directly and indirectly and generate more than \$5 billion in annual economic output.

As mentioned previously, another significant driver of economic activity within the Port of Tacoma MIC is the Port of Tacoma. The economic impact of the Port of Tacoma is driven by two lines of business: marine cargo operations and Port of Tacoma tenants. Economic impacts for the Port of Tacoma were estimated by a 2019 study produced by Community Attributes Inc. for the NWSA (CAI 2019). The results from this study are summarized in the table below in **Table 4-4**.

TABLE 4-4 Estimated Direct Impacts by Line of Business, Port of Tacoma (2017)

Economic Impact	Employment	Economic Output
DIRECT ECONOMIC IMPACT		
Marine Cargo Operations	12,950	\$3.70 billion
Port of Tacoma Tenants and Other Businesses	1,500	\$0.85 billion
INDIRECT ECONOMIC IMPACT		
Marine Cargo Operations	36,900	\$7.78 billion
Port of Tacoma Tenants and Other Businesses	5,200	\$1.55 billion
Total Economic Impact	56,550	\$13.88 billion

SOURCES: CAI 2019; BERK 2020

The 2019 study found that the marine cargo operations for Port of Tacoma directly employed a total of 12,950 people, and those jobs directly generated \$3.70 billion in annual economic output. Port of Tacoma tenants and other businesses were found to directly employ 1,500 people, and those jobs directly generated \$0.85 billion in annual economic output.

The economic output from the direct jobs supporting marine cargo operations at NWSA indirectly supported an additional 36,900 jobs across the Washington State economy, while jobs from Port of Tacoma tenants and other businesses indirectly supported an additional 5,200 jobs across the Washington State economy. In total, the Port of Tacoma’s economic impact across the state was estimated to support 56,550 jobs and \$13.88 billion in annual economic output.

4.1.3 Summary of Affected Environment

- **The study area is a local, regional, and national asset.** The MIC is an active industrial area with significant existing jobs in core industrial sectors. The area has a long history of industrial employment and is a key component of a regional system of manufacturing and industrial centers that stretches from the Cascade Industrial Center in the north to the Frederickson MIC in the south. The economic impact of the Port of Tacoma MIC extends to the county and region.
- Tacoma’s adopted growth target is for 105,977 new residents and 70,800 new jobs between 2020 and 2044.
- The city’s employment targets for 2044 show a large increase in Tacoma’s jobs to housing ratio, from 1.31 to 1.42. The employment

targets illustrate the importance of job growth to fulfilling the envisioned role of Tacoma as a Regional Employment Center.

- With roughly 10% of the city's total employment and almost half of its manufacturing/industrial employment, the study area accounts for a significant portion of both the City of Tacoma's and Pierce County's industrial employment.
- The use of space for manufacturing in the study area is declining, with new warehousing and logistics development pressure. Manufacturing uses that are not strongly marine- or logistics-oriented may relocate over time.
- Ensuring job growth and retention in the study area will be an important piece of realizing the Comprehensive Plan targets. Much of the land is in public and tribal ownership in both the Core Area and Buffer Area. Private ownership lands are largely on the Foss Peninsula, Middle Peninsula, the central area between the Puyallup River and Blair Waterway, and the east side of Hylebos Waterway.
- Existing policies supports access to a wide range of employment opportunities, growth, and competitiveness as a West Coast trade and freight hub, a regional center of diverse manufacturing, and a widely accessible base of living wage jobs, particularly for underserved and underrepresented people.
- Existing policies also support locating housing, including units that are affordable and accessible, in and around designated regional growth centers, and in areas that are opportunity rich in terms of access to active transportation, jobs, open spaces, high-quality schools, and supportive services and amenities. Policies also promote housing that is protected from noise, pests, hazardous environmental conditions, and materials.

4.2 Potential Impacts

This section evaluates the EIS alternatives based on the thresholds of significance presented above chapter: employment growth and mix, employment displacement, housing growth and displacement, and housing demand.

4.2.1 Thresholds of Significance

Thresholds of significance include:

- **Employment Growth and Mix.** The action would lead to changes in the employment mix that would decrease the percentage or total quantity of jobs related to or supportive of Manufacturing Industrial Centers (MICs) below thresholds in regional policies.

- **Employment Displacement.** The action would cause a high likelihood of voluntary or involuntary economic displacements of businesses in industrial sectors widely in the subarea. It would preclude new opportunity for expansion of industrial employment through business formation and retention.
- **Housing Growth and Displacement.** The action would result in a loss of housing due to redevelopment and insufficient development capacity, tools, or programs to address displacement of dwellings and population.
- **Housing Demand.** The action would create demand for housing that cannot be accommodated within the city in adjacent districts or areas where housing is planned.

4.2.2 Impacts Common to All Alternatives

Employment Growth and Mix

The Tideflats study area meets the baseline requirement of at least 10,000 existing jobs for designation as an Industrial Employment Center, and based on the findings of the 2022 Pierce County Buildable Lands Report (Pierce County 2022b), each of the alternatives has the likely zoning capacity to meet the Industrial Employment Center criteria for capacity to add 10,000 jobs. The alternatives differ in their projected employment performance. See **Table 4-5**. Overall, each alternative is expected to meet the planning requirements for MIC status under VISION 2050 and would yield positive employment growth, but only the growth trend under Alternative 3 achieves the overall growth target for 20,000 total jobs.

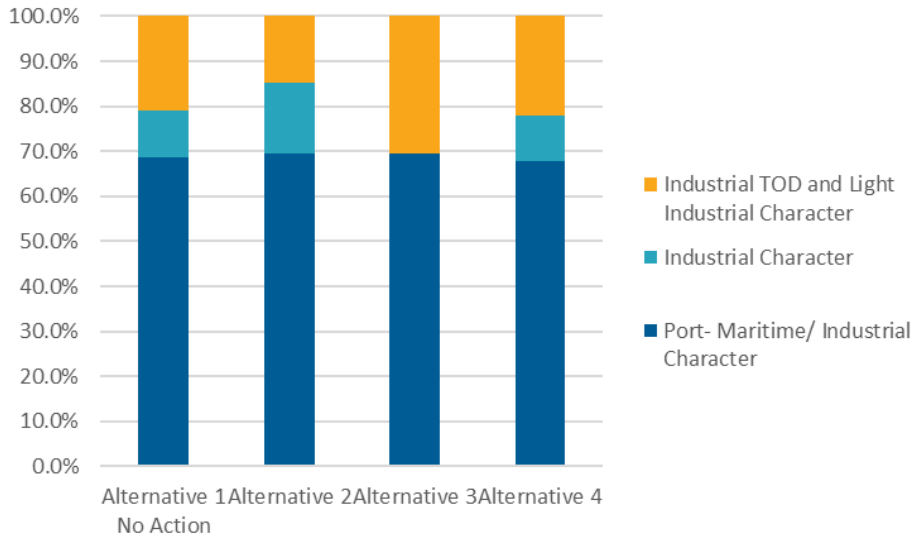
TABLE 4-5 Employment Growth by Alternative, 2020–2044

Total Employment	No Action	Alternative 2	Alternative 3	Alternative 4
Base Employment	11,479	11,479	11,479	11,479
2044 Performance Trend Evaluated	12,527	16,813	20,008	12,527
Net Growth Performance Studied	1,048	5,334	8,529	1,048
Minimum Net Growth Capacity*	11,526	11,526	11,526	11,526
Base + Minimum Capacity	23,005	23,005	23,005	23,005

SOURCES: City of Tacoma 2023; Pierce County 2022b; BERK 2023; SEVA 2023

* Based on the PMI zone capacity per Pierce County Buildable Lands Report (revised 2022).

All alternatives would provide more than 50% of jobs as industrial employment and allow expansions of industrial and port/maritime employment. Business formation and retention would be promoted under each alternative. See **Exhibit 4-8**.



SOURCE: Developed by BERK 2024

NOTE: See Exhibit 3-10 in Chapter 3, *Land Use – Plans and Policies*, for details of future land use shares.

EXHIBIT 4-8 Percent of Future Land Use Acres

Employment Displacement

In both Core Areas and Buffer Areas, or mixed industrial designations, the primary uses would be industrial. Non-industrial businesses would be limited to those that support employees of the area (e.g., food/retail). Each alternative would likely result in some employment displacement because of the potential loss of land mass due to sea level rise, change of land use for restoration activities, expansion of container shipping facilities, or shifts in overall land use from heavy to light industry. The degree of impact and areas affected differ under each alternative.

Housing Growth and Displacement

As an industrial-focused area, minimal housing currently exists in the study area, and limited additional housing is proposed; under Alternative 3, more housing is proposed in the Portland Avenue Station Area. See **Table 4-6**.

TABLE 4-6 Housing Growth by Alternative, 2020–2044

Total Housing	No Action	Alternative 2	Alternative 3	Alternative 4
2020	4	4	4	4
2044*	206	4	494	206
Growth	202	0	490	202

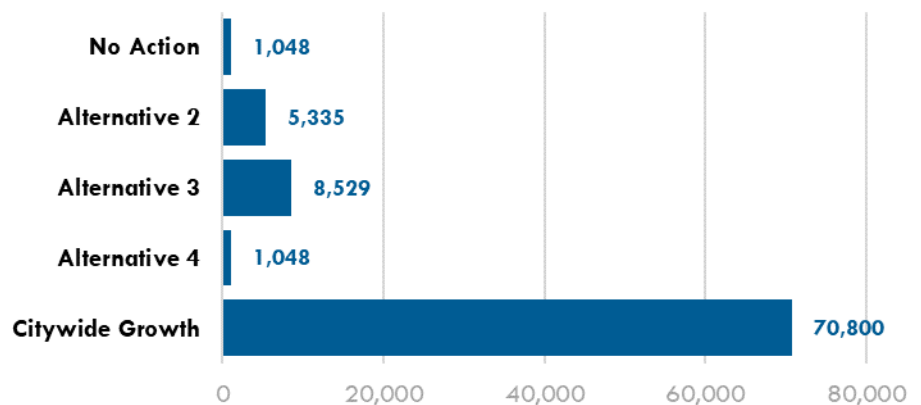
SOURCES: City of Tacoma 2023; BERK 2023

* Buffer Area in No Action and Alternative 4 and Portland Avenue Station Area for Alternatives 2 and 3.

There is potential for replacement of the limited existing housing in the study area with non-residential uses that are primary. The alternatives limit the type and location of new housing; limiting the potential for displacement, the EIS alternatives would provide limited capacity for housing above existing conditions in most alternatives except Alternative 2, which does not allow for new housing.

Housing Demand

While it is possible that job increases in the study area could increase demand for housing outside of the study area, the job growth is planned to help the City meet its growth targets that are set based on VISION 2050 and the Countywide Planning Policies. These growth targets are set to achieve a jobs-housing balance in the county and region (see **Exhibit 4-9**).



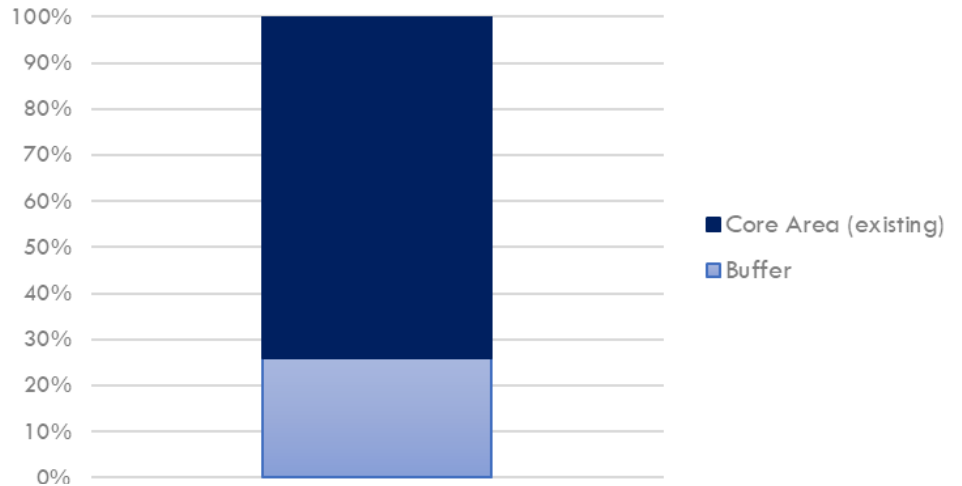
SOURCES: City of Tacoma 2023; BERK 2023

EXHIBIT 4-9 Net Employment Growth by Alternative in Relation to Citywide Target, 2020–2044

4.2.3 Alternative 1 (No Action Alternative)

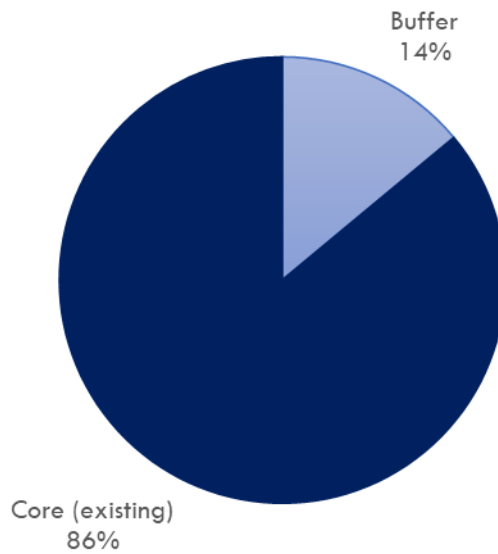
Alternative 1, the No Action Alternative, continues the current plan designations and zoning:

- **Employment Growth and Mix.** Alternative 1 forecasts a total future number of jobs at 12,527. Up to 100% of the job mix is expected to be industrial, well above the 50% required per Center guidelines. Core Areas and Buffer Areas are zoned for Heavy Industrial Uses, and Light Industrial zoning is limited. The Core Area represents 74% of the employment capacity and the Buffer Area 26%. See **Exhibit 4-10**. About 86% is in the Core Area by designation acreage and 14% in the Buffer Area. See **Exhibit 4-11**. The baseline zoning restricts non-industrial uses in the Core Area while allowing some flexibility for non-industrial uses in certain districts. Alternative 1 includes the least restrictions on industrial uses.
- **Employment Displacement.** Alternative 1 projects 1,048 jobs above existing jobs but has capacity for more than 11,526 jobs on vacant or redevelopable land in the PMI zone in the Core Area and more capacity beyond that in the M1 and M2 zones in the Buffer Area. See Table 4-5. The pressure for economic displacement is anticipated to be low.
- **Housing Growth and Displacement.** Housing is allowed in the M1 zone west of Portland Avenue Station. A small net increase is estimated at 202 additional units above the anticipated existing units of 4. See Table 4-6.
- **Housing Demand.** Alternative 1 provides 1% of the citywide growth target for 2044. Growth is anticipated in current plans and would not be expected to increase housing demand appreciably. See Exhibit 4-9.



SOURCES: City of Tacoma 2023; BERK 2023

EXHIBIT 4-10 Employment Mix – Alternative 1 (No Action)



SOURCES: City of Tacoma 2023; BERK 2023

EXHIBIT 4-11 Acres by Designation – Alternative 1 (No Action)

4.2.4 Alternative 2

Alternative 2 anticipates an increase in employment higher than Alternative 1 but less than Alternative 3. Alternative 2 would reduce housing, although such uses could be a grandfathered use:

- **Employment Growth and Mix.** Alternative 2 is projected to achieve a total job number of 16,813, less than the 20,000 targeted, but capacity allows achievement of that figure. At least 50% of jobs, and likely much more, would be industrial under Alternative 2. Alternative 2 would provide a greater focus on industrial employment of the development alternatives and would encourage industrial uses with higher employment densities. Alternative 2 provides over 55% in industrial jobs in the Core, Middle Peninsula, Puyallup River, and SR 509 to Fife areas and 45% in jobs within Foss Peninsula and Portland Avenue Station Area that have higher density and heavy industrial jobs and support businesses, and Northeast Tacoma with light industrial employment. See **Exhibit 4-12** showing jobs by designation area and **Exhibit 4-13** showing acres by designation area.
- **Employment Displacement.** Alternative 2 provides capacity for 5,334 jobs above existing jobs and provides locations for higher-intensity industrial transit-oriented development (TOD) employment, which could displace some lower intensity industrial uses. However, the job increases are anticipated to be on vacant or redevelopable sites in addition to existing jobs (in net new space). There is capacity to replace existing employment space.
- **Displacement** is most likely to occur in areas along the Foss Peninsula and Northeast Tacoma where land use concepts transition from heavy industry to light industry or mixed industry, as existing heavy industrial uses would be more likely to become non-conforming under the proposed land use concepts. However, the impacts would be mitigated by the City's non-conforming use standards, which provide vested rights for existing businesses (see TMC 13.06.010.L).
- **Housing Growth and Displacement.** No housing would be allowed anywhere in the Tideflats study area under Alternative 2, but it is possible that existing housing would be grandfathered. Some limited existing housing could be replaced by industrial uses. This is not expected to affect the city's ability to meet its housing target since the study area is not intended as a place for housing capacity.
- **Housing Demand.** The anticipated jobs would represent 8% of the city's 2044 job target. Anticipated job growth is not anticipated to increase demand for housing beyond that now planned by the City by 2035 or by 2044. The city's Comprehensive Plan periodic update will identify sufficient capacity for housing at all levels of affordability.

Industrial Transit-Oriented Development (TOD)

Industrial TOD was examined by the University of Washington-Tacoma in 2020. Findings from Chapter 6 by Adam Nolan & Ashleigh Williams are shared below.

Urban industry is needed to combat displacement while also economically uplifting workers and businesses in urban areas.

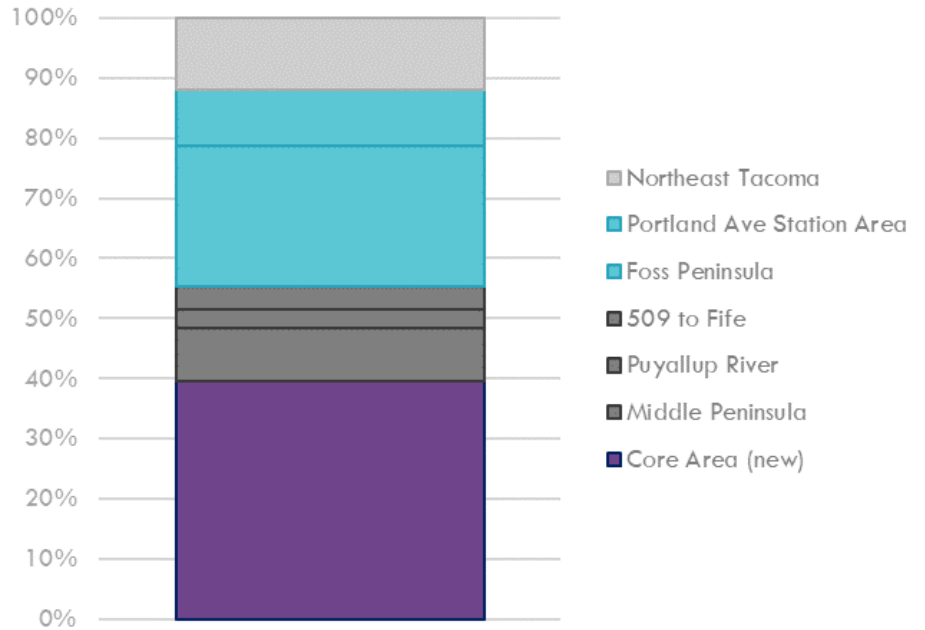
While effective in providing some protections for urban industrial activities, traditional zoning fails to ensure adequate surplus or the right kind of spaces for modern manufacturing.

... industry is more suitable for urban spaces than ever before as modern manufacturing now entails smaller, more environmentally friendly and technologically savvy firms. The preservation of industrial spaces in urban areas allows for the growth of manufacturing firms and the economic presence they provide.

While proximity to urban areas can lead to benefits for manufacturing businesses and residents ..., it can also lead to the displacement of those businesses and residents (due to gentrification).

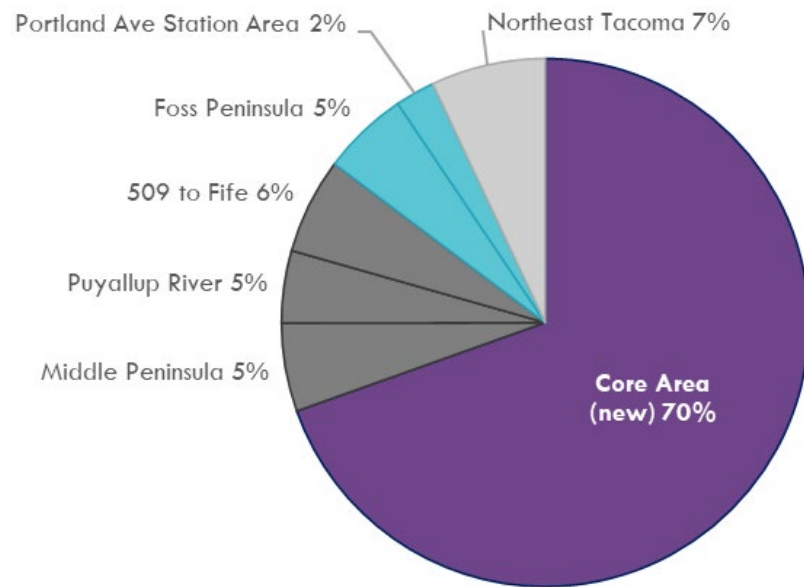
Different strategies of 'mandatory inclusionary zoning' ... to create sufficient space for manufacturing ... include use of tax credits or subsidies (high density residential, etc.), transfers of development rights, requiring a specific percentage of industrial uses in buildings, amortizing the cost of constructing new industrial space, or providing lower industrial rents necessary for emerging manufacturers.

SOURCE: Pendras et al. 2020



SOURCE: BERK 2023

EXHIBIT 4-12 Employment Mix – Alternative 2



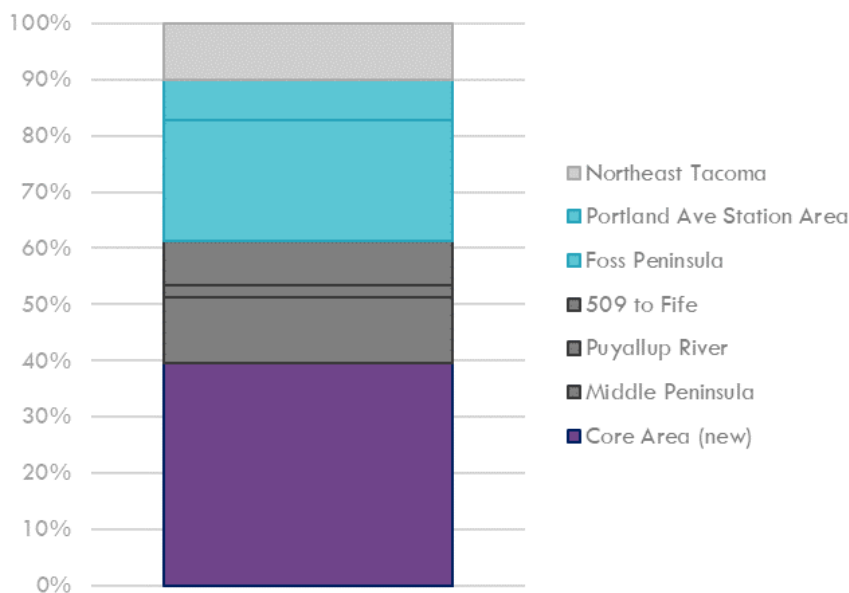
SOURCE: BERK 2023

EXHIBIT 4-13 Acres by Designation – Alternatives 2 and 3

4.2.5 Alternative 3

Alternative 3 includes the greatest employment levels of all alternatives. Alternative 3 would also allow more housing than other EIS alternatives, although still small in number:

- Employment Growth and Mix.** Alternative 3 includes the highest overall employment density even with more land in restoration/conservation status. More industrial land supply is converted for restoration and sea level rise adaptation; over time, the Portland Avenue Transition Area shifts to a more traditional TOD with industrial use allowance. All Transition Areas become Light Industrial and could allow more non-industrial uses within the Transition Areas. Core Areas of the port are reserved for Container/Port activities and related industrial and commercial support services. Up to 20,008 jobs would be located in the Port of Tacoma MIC by 2044 consistent with the Industrial Employment Center criteria and 60% or more of jobs would be industrial; job capacity would likely be higher than for Alternatives 1, 2, and 4 since more land would be in a Light Industrial and Industrial TOD character, which is expected to have a higher job density. Alternative 3 provides over 61% in industrial jobs in the Core (industrial), Middle Peninsula (industrial), Puyallup River (industrial and restoration), and SR 509 to Fife (heavy and light industrial) designation areas and 45% in industrial jobs within Foss Peninsula (TOD), Portland Avenue Station Area (TOD), and Northeast Tacoma (Light Industrial and industry-supportive commercial). See **Exhibit 4-14** depicting Alternative 3 job mix. Acres by designation under Alternative 3 are the same as Alternative 2; see Exhibit 4-13.



SOURCE: BERK 2023

EXHIBIT 4-14 Employment Mix – Alternative 3

- **Employment Displacement.** Alternative 3 provides capacity for 8,529 jobs above existing jobs. It provides locations for higher intensity transit-oriented industrial employment, like Alternative 2, which could displace some lower intensity industrial uses. However, the job increases are anticipated to be on vacant or redevelopable sites in addition to existing jobs (in net new space). There is capacity to replace existing employment space. Under this alternative, displacement is most likely to occur along the Puyallup River as restoration and flood control projects are proposed, in the vicinity of the Portland Avenue Light Rail Station, and within the Core Area where container port expansion is anticipated. Along Marine View Drive, existing heavy industrial uses would likely become non-conforming under a Light Industrial zoning district, but impacts would be mitigated by the City's nonconforming use standards, which vest existing uses and allow pathways for continued investment and expansion. Along the I-5 to Fife Transition (see Chapter 2, Alternative 2, Exhibit 2-4), there would be a mix of heavy and light industrial. This shift to including light industrial zoning would not likely cause significant industrial displacement due to recent trends toward restoration activities and light industrial uses that would be compatible with the proposed land use concept.
- **Housing Growth and Displacement.** Housing would be encouraged close to transit and in proximity to downtown, with housing types limited to workforce housing and live/work units. Some existing housing could be replaced by industrial uses such as in industrial TOD areas. The amount of housing to be added is modest and contributes 0.3% to the city's 2044 housing target, a small amount since the Tideflats study area is not intended as a place for significant housing capacity.
- **Housing Demand.** The anticipated jobs would represent 12% of the city's 2044 job target. However, job growth is not expected to increase demand for housing beyond that now planned by the City by 2035 or by 2044. The city's Comprehensive Plan periodic update will identify sufficient capacity for housing at all levels of affordability.

4.2.6 Alternative 4

Like Alternative 1 (No Action), Alternative 4 would continue the current plan designations and zoning, but it adjusts city policies and strategies by a new Subarea Plan; these policies and strategies would be designed to avoid displacement of port-supportive uses such as warehousing, preserve industrial lands, and protect essential public facilities such as port operations, with options for sea level rise adaptation and mitigation. Housing would be allowed near transit.

- **Employment Growth and Mix.** Alternative 4 considers a trend resulting in 12,527 jobs. However, similar to Alternative 1, there is sufficient capacity for jobs in the Core Area alone to add more than 10,000 new jobs and the PSRC criteria for an Industrial Growth Center. Per the center designation criteria, more than 50% of jobs would be industrial, with up to 100% of the job mix anticipated to be industrial under Alternative 4. The Core Area represents 74% of the employment capacity and the Buffer Area 26% (the same as Alternative 1, No Action). See Exhibit 4-10. About 86% is in the Core Area by designation acreage and 14% in the Buffer Area. See Exhibit 4-11.
- **Employment Displacement.** Alternative 4 provides capacity for 1,048 additional jobs above existing jobs on vacant or redevelopable land (the same as Alternative 1, No Action). See Table 4-5. The pressure for economic displacement is anticipated to be low.
- **Housing Growth and Displacement.** Housing is allowed near transit under Alternative 4 and, for the purposes of the EIS evaluation, the location of housing is expected to be similar to Alternative 1 in the M-1 area near the Portland Avenue Station. A small net increase is estimated at 202 additional units above the existing units of 4. See Table 4-6.
- **Housing Demand.** Alternative 4 provides capacity for 1% of the citywide employment growth target for 2044. Growth is anticipated in current plans and would not be expected to increase housing demand appreciably. See Exhibit 4-9.

4.3 Avoidance, Minimization, and Mitigation Measures

4.3.1 Mitigation Measures Common to All Alternatives

With the application of existing or future policies and codes, none of the alternatives would create more than a moderate impact on population, housing, and employment uses.

Mitigation measures applicable to all alternatives include:

Employment Growth and Mix

- Update economic development strategies to focus on industrial uses with higher employment densities for recruitment and retention.
- Implement the Green Economic Development Strategy to take advantage of the competitive advantages of the Tideflats, with particular focus on the priority industrial sectors identified in that strategy and uses that require a shoreline location. This strategy is designed to enable Tacoma to seize new market opportunities created by public and private sector efforts to decarbonize the economy. The goal is to put Tacoma's economy on a new trajectory – not just creating good jobs in the near-term, but more fundamentally shifting the composition and orientation of the economy so that it can continually create more and better jobs over time (R.M. Donahue Consulting 2023).
- Update development standards to ensure that new logistics and distribution centers can be converted into high job-producing uses in the future and consider incentives to encourage conversion to higher job-producing uses. Additional approaches could include limits on the size of new distribution facilities or limiting the area in which these facilities would be permitted, to retain more land supply for other preferred uses.
- Given the state priority to protect and expand container shipping and international trade, ensure that there is a sufficient land supply in the core area for future container shipping needs and prioritize job creation within the Transition Areas.

Employment Trends and PSRC Centers Criteria

The MIC is designated as an Industrial Growth Center and can meet that level of jobs under all alternatives. However, all alternatives have capacity to meet the higher planning target associated with PSRC's Industrial Employment Centers. Different forecasts were analyzed and evaluated under each alternative, some of which assumed more or less

growth toward the planned capacity. To bend forecast trends to the higher employment goal, the following options could be considered:

- Recommend PSRC develop a new MIC center type that better reflects needs of container ports under that element of GMA (Seattle/Tacoma).
- Provide capacity toward the full PSRC planning requirement, but set a local employment forecast that is less than the PSRC planning requirement (10,000 jobs) to reflect what is likely to occur during the plan horizon.

Employment Displacement

- Avoid industrial displacement from non-industrial uses. Where allowed, ensure that commercial or retail uses are subject to maximum size of use limits (e.g., TMC 13.06.060.E.4. Commercial Uses in South Tacoma M/IC).
- Ensure ongoing and new industrial uses. Require a percentage of new buildings to be devoted to industrial use in districts allowing limited residential or non-industrial purposes (e.g., TMC 13.06.060.E.4 Residential Uses).
- Limit the geography of industry-supportive housing allowed near transit or live/work units. Monitor the number and location in relation to industrial uses to ensure proper transitions and avoid undue encroachment on industrial uses.
- Set a minimum job density for new employment and transfers of development rights to achieve a specific percentage of industrial uses in buildings. Consider amortizing the cost of constructing new industrial space. Encourage lower industrial rents necessary for emerging manufacturers.
- Develop programs to provide relocation assistance for industrial/commercial uses displaced by public projects in the Tideflats, including Port container shipping expansion, restoration projects, or sea level rise adaptation measures. Assistance could include site suitability analysis for relocation and financial assistance for relocation costs and tenant improvements. Prioritize relocation within the Tideflats and within the City of Tacoma to minimize the loss of employment.
- Recognize that the Port has a multiplier effect that does mitigate impacts of local displacement, or lack of job growth.

Housing Growth and Displacement

- **Housing Displacement.** Implement anti-displacement strategies identified in Tacoma's Affordable Housing Action Strategy (AHAS) (City of Tacoma 2018).
- **Rental Business License.** The business license and certification that the owner meets housing standards helps ensure that all rental housing in Tacoma is safe and meets basic housing maintenance requirements.

Housing Demand

- No mitigation necessary. None of the alternatives are expected to produce jobs inconsistent with the proposed target.

4.3.2 Alternative 1 (No Action)

The No Action Alternative has capacity for more than 10,000 new jobs and can meet growth targets and meet PSRC MIC job density requirements for Industrial Employment Centers. Growth trends studied under Alternative 1 are not projected to produce local employment growth that meets the proposed employment targets. The City could apply one or more features of Alternative 2 or 3 to increase expected employment density.

4.3.3 Alternative 2

Alternative 2 has capacity to meet PSRC MIC job density requirements for Industrial Employment Centers. Market-based trends explored with Alternative assume jobs at less than an Industrial Employment Center but above the Industrial Growth Center. The City could apply one or more features of Alternative 3 to increase employment density.

4.3.4 Alternative 3

See *Mitigation Measures Common to All Alternatives*.

4.3.5 Alternative 4

See Alternative 1.

4.4 Significant Unavoidable Adverse Impacts

Employment Growth and Mix. Under all alternatives, the projected employment mix would remain 50% or more industrial—one of the threshold criteria for regional designation as an Industrial Employment Center or Industrial Growth Center. No significant unavoidable adverse impacts are anticipated.

Employment Displacement. New types of employment like industrial TOD or zones that allow for commercial or retail uses could place pressure on existing employment uses and displace them. Focusing on maritime and industrial jobs could result in fewer related uses moving to other locations. Zoning standards and requirements described for all alternatives can reduce potential impacts to a less-than-significant level.

Housing Growth and Displacement. Under Alternatives 1, 3, and 4, housing would be a minor use and would be contained near transit. Under Alternative 2, housing would be disallowed and existing units, although few, could be displaced. The City will plan sufficient capacity citywide to meet its 2044 housing growth target with the Comprehensive Plan periodic update. Thus, no significant unavoidable adverse impacts are anticipated.

Housing Demand. Employment growth in the Tideflats study area under all alternatives is not expected to markedly increase demand for housing beyond the City's capacity or need to plan for its 2044 housing targets. No significant unavoidable adverse impacts are anticipated.

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CHAPTER 5 Plants and Animals

This chapter includes a description of plants and animals and related policies and regulations within the boundary of the Tacoma Tidelands study area. The chapter then describes the potential impacts on plants and animals associated with each alternative and discusses how these potential impacts can be avoided, minimized, and mitigated.

5.1 Affected Environment

5.1.1 Existing Policies and Regulations

Plants and animals in the study area are protected by a variety of federal and state laws and policies, and local plans and policies. These laws, plans, and policies have slightly different but sometimes overlapping requirements, and together are intended to protect and maintain species, habitats, and their functions.

5.1.2 Federal and State Policies and Regulations

Several federal and state regulations, plans, and policies influence planning, land use, and management activities that can impact or benefit plants and animals and their habitats within the study area.

Table 5-1 summarizes the applicable federal and state laws, regulations, and policies.

TABLE 5-1 Federal and State Laws, Regulations, and Policies Related to Plants and Animals

Law/Regulation/Policy	Lead Agency	Description
Federal Endangered Species Act (ESA) 16 U.S.C. 1531–1544	National Marine Fisheries Service (NMFS) U.S. Fish and Wildlife Service (USFWS)	Program for the conservation of federally listed threatened and endangered plants and animals and their habitats. Prohibits importing, exporting, taking, possessing, selling, and transporting listed species (with certain exceptions), and prohibits the destruction of designated critical habitat.
Washington State-listed Endangered, Threatened, or Sensitive Species List WAC 220-610-110	Washington Department of Fish and Wildlife (WDFW)	Program for the listing and recovery of state-listed threatened and endangered species.
Magnuson-Stevens Fishery Conservation and Management Act (MSA) – Public Law 104–297, October 11, 1996, as amended	NMFS	Requires federal agencies to review activities that may adversely affect Essential Fish Habitat (EFH). The EFH designation for the Pacific salmon fishery (Chinook, coho, and pink salmon) includes all those streams, lakes, ponds, wetlands, and other waterbodies currently or historically accessible to salmon in Washington, except above identified impassable barriers.
Marine Mammal Protection Act 16 U.S.C. 1361–1423(h)	NMFS, USFWS	Protects all marine mammals and prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas.
Fish and Wildlife Coordination Act 16 U.S.C. 661–666(e)	NMFS, USFWS, WDFW	Requires that federal agencies consult with the USFWS, NMFS, and state wildlife agencies for activities that affect, control, or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat.
State Hydraulic Code (Washington Administrative Code [WAC] 220-660)	WDFW	Regulates hydraulic projects (construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or freshwaters of the state) by requiring a Hydraulic Project Approval (HPA) for all such projects. The purpose of the HPA is to ensure that construction or performance of work is done in a manner that protects fish life.
Bald and Golden Eagle Protection Act 16 U.S.C. 668–668d	USFWS	Protects bald and golden eagles from the unauthorized capture, purchase, or transportation of the birds, their nets, or their eggs.
Coastal Zone Management Act 16 USC 1451–1465	Administered by Washington Department of Ecology (Ecology)	Voluntary state–federal partnership that encourages states to adopt management programs to meet the federal goals of protection, restoration, and appropriate development of coastal zone resources. In Washington, primarily implemented through the Shoreline Management Act (described below). Includes the “federal consistency” provision, which gives states a strong voice in federal agency decision-making and guidelines.
Washington State Shoreline Management Act (SMA), Chapter 90.58 RCW	Ecology	Requires local jurisdictions to implement Shoreline Master Programs (SMPs) to “prevent the inherent harm in an uncoordinated and piecemeal development of the state’s shorelines.” Shorelines are defined as marine waters, streams, and rivers with greater than 20 cubic feet per second (cfs) mean annual flow; lakes 20 acres or larger; upland areas called shorelands that extend 200 feet landward from the edge of these waters;

Law/Regulation/Policy	Lead Agency	Description
		biological wetlands and river deltas connected to these waterbodies; and some or all of the 100-year floodplain, including all wetlands.
Executive Order 12962 (Recreational Fisheries)	USFWS	Mandates federal agencies, to the extent permitted by law and where practical, to improve the “quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities.”
Migratory Bird Treaty Act of 1918 (16 USC 703-712)	USFWS	Protects migratory birds by prohibiting private parties (and federal agencies in certain judicial circuits) from intentionally taking, selling, or conducting other activities that would harm migratory birds, their eggs, or nests (such as the removal of an active nest or nest tree), unless the Secretary of the Interior authorizes such activities under a special permit.
Washington State Growth Management Act (GMA) RCW 36.70A.020	Department of Commerce	Frames the land use planning regime for many counties and cities in Washington to prepare local comprehensive plans, development regulations, and requirements for public participation. The purpose is to set goals to plan and control growth in order to wisely use and protect the state’s resources, including aquatic resources.
Clean Water Act (33 Code of Federal Regulations [CFR] 320-332) Sections 401 and 404	U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (Corps), and Ecology	Regulates discharges of dredged or fill materials into waters of the U.S., including wetlands and streams. Also requires any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification from the state that the discharge complies the applicable water standards.
Water Pollution Control Act (Revised Code of Washington [RCW] 90.48)	Ecology	Enables the review and approval, condition, or denial of projects proposed in waters of the U.S., including wetlands. Generally administered via Section 401 of the Clean Water Act.

5.1.3 Local and Tribal Policies and Regulations

The study area includes lands located in the cities of Tacoma and Fife. These municipalities have developed comprehensive plans, zoning, shoreline management plans, and ordinances for environmentally critical areas to direct growth and development within their jurisdictions and have codified regulations in their respective municipal codes. **Table 5-2** presents a summary of applicable local and tribal laws, plans, and policies. The primary local program with the most influence over the Tideflats Subarea is the Tacoma Shoreline Master Program (SMP), which includes goals, policies, and development regulations for all shoreline areas including Commencement Bay and its waterways (City of Tacoma 2013).

TABLE 5-2 Local and Tribal Laws, Regulations, and Policies Related to Plants and Animals

Law/Regulation/Policy	Lead Agency	Description
Tacoma Municipal Code (TMC) Chapter 13.11 Critical Areas Preservation	City of Tacoma	TMC Chapter 13.11 governs areas of Tacoma outside of SMP jurisdiction that provide habitat for plants and animals including critical aquifer recharge areas, fish and wildlife habitat conservation areas, flood hazard areas, geologically hazardous areas, stream corridors, and wetlands.
State Environmental Policy Act (SEPA). Washington Administrative Code (WAC) 197-11	City of Tacoma	WAC 197-11 and TMC 13.12 provides regulations for the SEPA process, which identifies and analyzes environmental impacts associated with governmental decisions. These decisions may be related to issuing permits for private projects, constructing public facilities, or adopting regulations, policies, and plans.
Shoreline Master Program (SMP) (Updated 2022). TMC Chapter 19	City of Tacoma	TMC Chapter 19 is the SMP. The SMP provides goals, policies, and regulations for shoreline use and protection, and establishes a permit system for administering the program (City of Tacoma 2022).
One Tacoma, Comprehensive Plan (Updated 2020)	City of Tacoma	One Tacoma describes the community's long-term vision and goals, and guides decisions on land use, transportation, housing, capital facilities, parks, and the environment (City of Tacoma 2019a).
Urban Forest Management Plan	City of Tacoma	Implemented through Urban Forest Management Plan (UFMP) that aims to achieve tree canopy cover of 30% by the year 2030. The UFMP includes goals, strategies, targets, actions, and an audit system for evaluation, and is intended to work in tandem with the 2015 One Tacoma Comprehensive Plan and the 2021 Climate Action Plan (City of Tacoma 2019b).
Strategic 20-Year Passive Open Space Plan	City of Tacoma	Implementation will restore and protect 496 acres of City-owned natural areas for the purpose of improving surface water for public benefit (City of Tacoma 2017a).
Fife Municipal Code (FMC) Title 17 Environmental Protection	City of Fife	FMC Title 17 protects areas in the city identified as critical areas from adverse impacts and incompatible land use. Critical areas include wetlands, critical aquifer recharge areas, fish and wildlife habitat conservation area, frequently flooded areas, geologically hazardous areas, and seismic hazard areas.
Shoreline Master Program (SMP) (Adopted 2019)	City of Fife	The SMP provides goals, policies, and regulations for shoreline use and protection, and establishes a permit system for administering the program. Fife shorelines include the Puyallup River and Hylebos Creek.
Puyallup Tribal Code (PTC) Fisheries Management Code (Chapter 12.04) and Revised Shellfish Code (12.12).	Puyallup Tribe of Indians	PTC Fisheries Management Code (Chapter 12.04) and Revised Shellfish Code (Chapter 12.12) contain provisions to protect, manage, and enforce regulations governing Tribal fishing and harvesting activities.

The study area also includes lands located within the Puyallup Tribe of Indians Reservation and Tribal-owned parcels. The Puyallup Tribe operates and administers a set of laws and regulations collectively referred to as the Puyallup Tribal Codes (PTC). The PTC includes a Fisheries Management Code (Chapter 12.04) and the Revised Shellfish Code (Chapter 12.12) that contain provisions to protect, manage, and enforce regulations governing Tribal fishing and harvesting activities.

In addition, the Tribe is involved in formal and informal consultation with state and federal agencies under many of the laws and regulations listed previously, and also provides review and input on local decisions made under the State Environmental Policy Act (SEPA) or Growth Management Act (GMA).

5.1.4 Current Conditions

Plants and animals in the study area occur in the context of a highly developed, highly modified landscape with high levels of impervious surface and high levels of shoreline armoring associated with intense industrial and port land uses. Natural drainage features, which historically supported wetlands, streams, and associated habitats important for fish, shellfish, and wildlife, either no longer exist or have been heavily modified. The Commencement Bay Nearshore Tideflats area, which overlaps with the study area, is a U.S. Environmental Protection Agency (EPA) Superfund site. Development, dredging, diking, filling, and channelizing in and around Commencement Bay have resulted in shoreline alterations; loss of aquatic, mudflat, and delta wetland habitat; and degradation of water quality. The Commencement Bay Cumulative Impact Study, prepared in 1991, documents the loss of special aquatic sites (Corps 1991). The City of Tacoma found in 2017 that only approximately 4% of the study area is covered by tree canopy (City of Tacoma 2017b). Types of vegetation found in the study area include grasses, mostly isolated street trees, and shrubs.

The U.S. Army Corps of Engineers (Corps) found in the Commencement Bay Cumulative Impact Study that intertidal mudflats in Commencement Bay have decreased 89% since 1877. In addition, only 1% of an estimated 3,894 acres of emergent marsh habitat remains. Most of the habitat loss was a result of filling for port development, flood control, and agricultural use (Corps 1991).

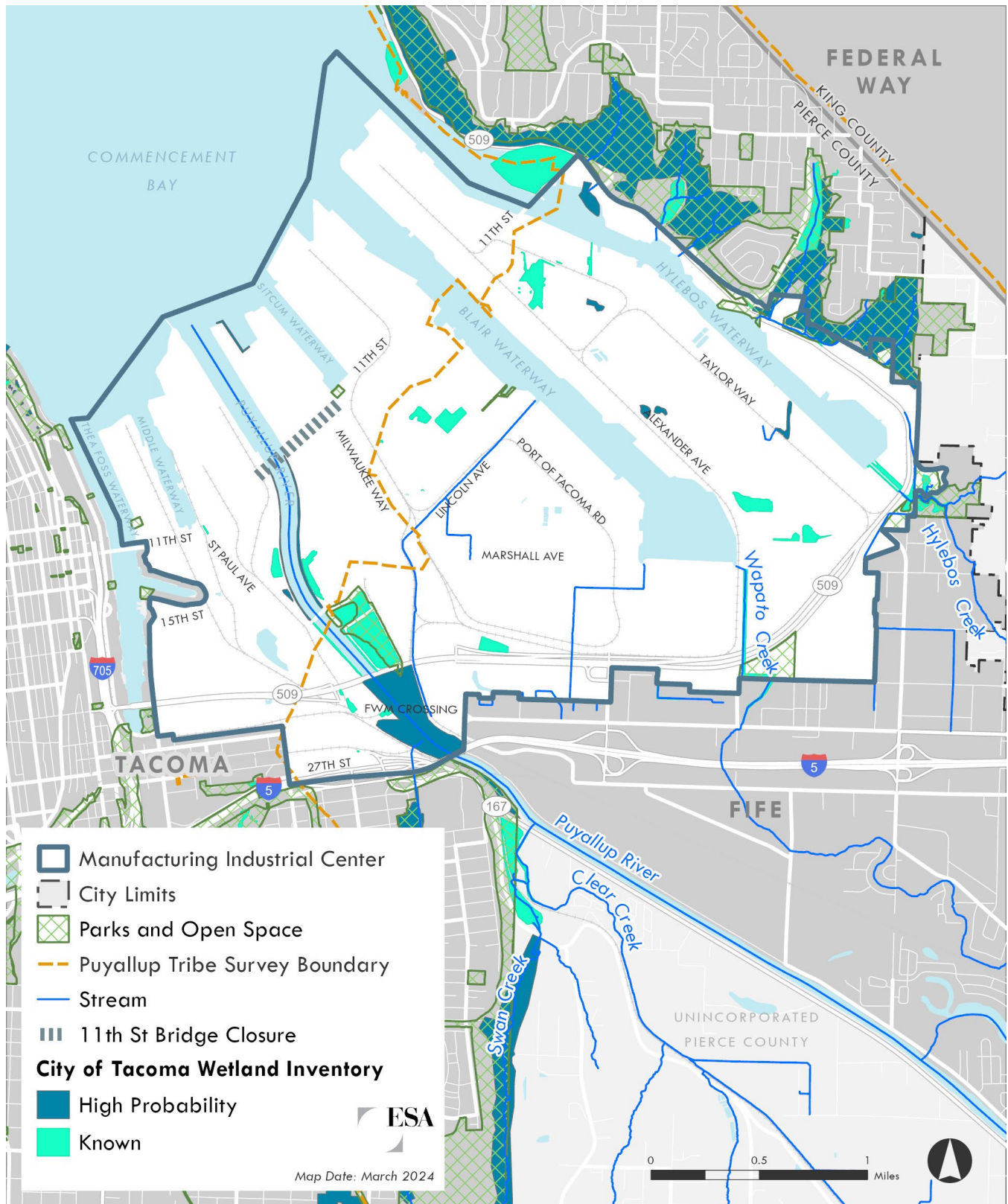
By its nature, the Port of Tacoma occupies the estuary, which is a transition point for many habitats and species. Over the last several decades, the Port of Tacoma, the City of Tacoma, and surrounding local jurisdictions, as well as the Puyallup Tribe, have established several hundred acres of stream, wetland, and intertidal habitat restoration projects in and around the study area, as well as farther upstream within the Puyallup River watershed. The habitat restoration and mitigation sites within the study area provide important habitat patches for fish and wildlife traveling through the area.

Vehicle and truck travel throughout the Tideflats Subarea potentially harms salmon habitat. Recent research indicates that chemicals from tires are causing salmon deaths on the west coast of the US (Yale Environment 360 2023). This is part of the affected environment for fish species that municipalities seek mitigation for to improve water quality in the Subarea Plan.

Streams and Wetlands

The Puyallup River, Hylebos Creek, and Wapato Creek flow through the study area within highly modified channels and armored banks, with little to no riparian cover. Portions of both Hylebos Creek and Wapato Creek upstream of the Subarea Plan study area, as well as within the study area, have been restored over the past several decades. Extensive restoration efforts along Hylebos Creek continue upstream of the study area. Hylebos Creek discharges into the Hylebos Waterway, which also contains several mitigation and habitat restoration sites within the context of surrounding industrial development. Wapato Creek discharges to the Blair Waterway. The Blair Waterway also contains mitigation sites along its heavily armored industrial shoreline.

The Puyallup River is tidally influenced throughout the study area and is the major source of sediment to nearshore marine habitats. Historically the Puyallup River delta supported extensive intertidal mudflats and emergent tidal marsh. Today estuarine wetlands and mudflats occur in a few isolated areas adjacent to the industrial waterways and associated with restoration and mitigation sites (USFWS 2020a; City of Tacoma 2020a). The Port of Tacoma, City of Tacoma, Washington Department of Natural Resources, the Puyallup Tribe, and the Commencement Bay Natural Resource Trustees have completed restoration and mitigation sites in the study area (Radice 2024). Freshwater wetlands are present in small, isolated areas within the built environment and comprise a very small percentage of the study area. According to the City of Tacoma's wetland inventory, less than 200 acres, or 3.5% of the study area, supports known wetlands or areas with a high probability of wetlands (City of Tacoma 2020a). The City's wetland inventory maps identify 40 small (<1 acre) known wetlands scattered throughout the study area (**Exhibit 5-1**).



SOURCE: ESA 2024

EXHIBIT 5-1 Mapped Streams, Wetlands, Parks, and Open Space

Fish and Wildlife Species

The developed industrial and degraded conditions in the study area offer very limited habitat value to most native terrestrial species. Species that do occur are mostly those adapted to the conditions, such as rats and raccoons. The interstate and state road network also essentially cuts off access to upland species common in the region. Despite these conditions, special status species can and do occur and forage in the productive waters (particularly special status species that are highly mobile). Examples, great blue heron, bald eagle, marbled murrelet.

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 2024). Wapato Creek and Hylebos Creek support a smaller set of salmonid species including steelhead, coho, Chinook (fall), pink, and chum salmon. Three of these fish species are listed as threatened under the federal Endangered Species Act (ESA) (Chinook, bull trout, and steelhead), have designated critical habitat in the study area, and are also listed in Washington State by the Washington Department of Fish and Wildlife (WDFW) (Table 5-3). The waterways are characterized by narrow intertidal and shallow subtidal margins around a relatively deep channel. These margins are important migratory routes for salmon, waterfowl, and shorebirds, and serve as rearing areas for juvenile and adult salmonids and their prey.

TABLE 5-3 Federally and State-Listed Species in the Study Area

Common Name	Scientific Name	Federal Status	State Status	Critical Habitat in Study Area
Chinook salmon (Puget Sound)	<i>Oncorhynchus tshawytscha</i>	Threatened	Candidate	Yes
Steelhead (Puget Sound)	<i>O. mykiss</i>	Threatened	Candidate	Yes
Bull trout	<i>Salvelinus confluentus</i>	Threatened	Candidate	Yes
Coho salmon (Puget Sound)	<i>O. kisutch</i>	Species of Concern	None	None
Killer whale (orca) (Southern Resident Distinct Population Segment)	<i>Orcinus orca</i>	Endangered	Endangered	Yes
Western Pond Turtle	<i>Clemmys marmorata</i>	Proposed Threatened	Threatened	Yes
Marbled murrelet	<i>Brachyramphus marmoratus</i>	Threatened	Threatened	None
Streaked horned lark	<i>Eremophila alpestris strigata</i>	Threatened	Endangered	None
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Threatened	Endangered	None

Adult salmonids are typically found in Commencement Bay August through November, except spring Chinook salmon and steelhead, which are present during the winter and spring (City of Tacoma 2007). The Salmon Habitat Protection and Restoration Strategy for the Puyallup and Chambers watersheds (Water Resource Inventory Area [WRIA] 10 and WRIA 12, respectively) is designed to provide a scientific framework for identifying priorities and strategies to support protection and restoration of salmon habitat in both watersheds and, ultimately, the Puget Sound region. According to the Salmon Habitat Protection and Restoration Strategy for Puyallup and Chambers watershed, adult Chinook salmon (fall) can arrive as early as June (Puyallup and Chambers Watersheds Salmon Recovery Lead Entity 2018). Juvenile Chinook salmon use the Commencement Bay nearshore and the waterways, particularly after the releases of hatchery fish in mid to late May (Kerwin 1999, as cited in City of Tacoma 2007). The Puyallup River watershed is used by the only remaining spring Chinook salmon stock found in South Puget Sound.

Despite substantial modification of the Commencement Bay nearshore, 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 (WDFW 2020b). The WDFW surveys documented mostly surf smelt spawning at these locations, with only a small area of sand lance spawning observed at the spit on the west side of the Puyallup River.

The Puyallup Tribe operates a robust program to maximize and optimize the shellfish harvest by protecting the habitats and populations of shellfish while also providing a safe environment for commercial, ceremonial, and subsistence fishing opportunities for Tribal members. The Tribe manages this fishery per their Revised Puyallup Tribal Shellfish Code (Chapter 12.12), and it includes crab (Dungeness, redrock, graceful), sea cucumber, geoduck, and spot-prawn, among other species. Despite productive habitat for crab along edges of the waterways, there is no Tribal harvest within the Tideflats study area due to (1) ship traffic associated with Port activities (Winfrey 2020), and (2) the closure of the harvest by the Washington State Department of Health due to a combination of marine biotoxins and pollution (DOH 2023). The closest approved commercial harvest for filter feeding shellfish is north of the study area between Browns Point and Dash Point. Recreational harvest of spot prawn occurs near the barge rafts on Commencement Bay. Common squid are harvested from

areas near Les Davis pier adjacent to Ruston Way. Crab species are harvested throughout the bay, especially near the mouth of the Thea Foss Waterway (Winfrey 2020).

According to WDFW, documented shellfish resources include Dungeness crab and Pacific geoduck clams, although the Washington State Department of Health has closed all of Commencement Bay shoreline to shellfish harvesting due to a combination of marine biotoxins and pollution associated with densely populated urban areas (DOH 2023).

Marine mammals that have been observed in Commencement Bay include Pacific harbor seal, harbor porpoise, California sea lion, and killer whale. Seal and sea lion haul-outs have been documented along Tacoma's marine shoreline on buoys, floats, and log booms in northeast Commencement Bay (Jeffries et al. 2000, as cited in City of Tacoma 2007). Harbor porpoise distribution in Puget Sound includes Central and South Puget Sound. WDFW also has a geographic information system (GIS) map that shows abundance estimates for harbor porpoises in Central Puget Sound, and Commencement Bay is included in the habitat area (Bockstiegel 2021). In general, shoreline use by marine mammals is limited due to the shipping traffic.

Commencement Bay is located within the Pacific Flyway, a major north-south migratory corridor that extends from Mexico north into Canada and the state of Alaska. The marine waters along with the restored intertidal wetlands and riparian buffers associated with mitigation sites provide habitat for shorebirds, waterfowl, and upland birds to breed and overwinter.

The highly degraded nature of the study area would not support most special status species. However, great blue heron and bald eagle have both been observed in the study area. They are highly mobile and opportunistic hunters, drawn to the fish resources along the shoreline (Cornell Lab of Ornithology 2023).

The WDFW Priority Habitats and Species (PHS) database online mapper also documents big brown bat, purple martin, bald eagle, great blue heron, and western pond turtle in the study area (WDFW 2020c). None of these species are listed under the federal ESA or have specific protections under state regulations. Coyote and beaver are frequently found in the study area, with the latter species requiring active management to maintain stream and ditch conveyance and reduce localized flooding issues.

City of Tacoma Natural Resource Damage Assessment and Restoration (NRDA) Habitat Sites

The Commencement Bay Natural Resource Trustees, in adherence with state and federal laws, assessed the natural resource damage caused by previous land practices and assigned it to potentially responsible parties (PRP). The City of Tacoma was among those PRPs and in 1997, the City entered into a Natural Resource Damage Assessment (NRDA) Consent Decree. The Consent Decree had many parts including environmental protection efforts, tribal and oversight payments as well as the construction of five restoration sites, four of which are within the study area. These sites were chosen based on their benefit to salmon and proximity to the natural resource damage among other criteria. Restored areas are described below:

- **Middle Waterway:**
 - **1701 East F Street:** The 1.85-acre piece of land next to Middle Waterway has been cleaned of its contaminated materials and reconstructed into an intertidal salt marsh. Volunteers planted native plants near the water to restore the habitat necessary for juvenile chinook, pink and chum salmon from the Puyallup River.
 - **Final Report:** Middle Waterway Completion Report (City of Tacoma 2005)
- **Olympic View Resource Area:**
 - **202 East F Street:** This 12.4-acre area includes land that the state Commissioner of Public Lands has withdrawn from leasing. To restore the area, 600 pilings were removed, and 11 tons of contaminated sediment was replaced with 22 tons of clean sediment. The work returned the Olympic View upland and aquatic areas to its natural condition and preserved one of the last remaining eelgrass beds in Commencement Bay.
 - **Final Report:** OVRA Monitoring Completion Report (City of Tacoma 2011a)
- **Tahoma Salt Marsh:**
 - **1741 North Schuster Parkway:** Nestled along the Ruston Way shoreline, a bowl-shaped salt marsh and upland areas were created in this area to restore riparian habitat. Contractors removed more than 6,000 cubic yards of soil. The clean soil was reused to create the upland areas and nearly 1,000 cubic yards of contaminated soil was properly disposed of off-site. Volunteers planted more than 6,000 native plants near the water.
 - **Final Report:** TSM Monitoring Completion Report (City of Tacoma 2011b)

- **Place of Circling Waters:**
 - **1621 Marine View Drive:** Located along Hylebos Creek at the foot of Northeast Tacoma, off-channel habitat was created, and upland areas were preserved benefitting local Coho, Chinook, and Chum salmonid species. Amphibians and bird species also benefit from the wetland enhancement. Under an agreement with the Port of Tacoma, the Port owns the site, constructed the habitat, and monitors and maintains it.
 - **Current Report:** Place of Circling Waters Monitoring Report, Year 1 (City of Tacoma 2012)

The Commencement Bay Natural Resource Trustees have also established restoration projects throughout the Puyallup River Watershed. The current sites are listed below.

yaḥwəla?

Located on the northeast shore of Commencement Bay near the mouth of the Hylebos Waterway, these 15 acres have been set aside for preservation of the shoreline's intertidal habitat areas and native vegetation.

Skookum Wulge

Located on the northeast shore of Commencement Bay near the mouth of the Hylebos Waterway, this narrow strip of 1.19 acres has been set aside for preservation of the shoreline's intertidal habitat areas and native vegetation.

Squally Beach

Located on the northeast shore of Commencement Bay just north of the 11th Street bridge, seeps from the hill above are diffused over the shoreline creating an area of brackish marsh and backwater pools. This 0.66-acre area provides intertidal habitat and native vegetation.

Mowitch

Located at the head of the Hylebos Waterway, this site provides intertidal backwater fingers that enable brackish marsh vegetation to grow and provide foraging and refuge habitat for salmonids. The Port of Tacoma was a partner on this project.

Additional Habitat Sites

Thea Foss Waterway Cleanup Habitat Mitigation Sites

The City removed or capped in place sediments contaminated by more than a century of environmentally insensitive practices within the former St. Paul Waterway and restored marine habitats around the Foss and other areas of Commencement Bay in partnership with agencies, organizations, property owners and other responsible parties. As part of the cleanup project, clean sediment was added to the Puyallup River Delta, and habitat restoration sites were constructed at four new locations: Middle Waterway Tideflats Habitat, North Beach Habitat, Puyallup River Side Channel and Hylebos Creek mitigation site. In addition, shorelines were enhanced wherever possible to make them habitat friendly, including four additional areas along the Thea Foss Waterway.

Port of Tacoma Habitat Sites

The areas within the Tideflats study area that do provide natural vegetation cover are typically associated with Port of Tacoma-managed habitat mitigation sites, which provide substantial habitat for fish and wildlife species, particularly salmonids. The Port created its first habitat mitigation site at Slip 1 in 1980 and since then over 21 sites and approximately 213 acres have been developed or preserved by the Port. The habitat sites are a result of either compensatory mitigation requirements due to unavoidable development or remediation impacts, NRDA, or preservation of open space provided as a public benefit (Port of Tacoma 2018).

One of the first sites (and the most well-known) is the Gog-le-hi-te wetland complex, which totals approximately 26 acres of estuarine intertidal wetland habitat. The wetlands provide valuable habitat to numerous species of fish and wildlife, including important Tribal, commercial, and ESA-listed fish species. Gog-le-hi-te provides an important transitional environment for juvenile salmon migrating from fresh to marine waters as well as habitat for migratory and resident birds (**Exhibit 5-2**). At the mouth of the former Milwaukee Waterway is another mitigation site of approximately 30 acres that supports marine intertidal and shallow subtidal sandflats and mudflats. The site restored and connected two previously existing sandflats of Commencement Bay and provides spawning habitat for surf smelt and foraging opportunities for juvenile salmon, shorebirds, and waterfowl (**Exhibit 5-2**).



NOTE: Gog-le-hi-te I view to the east (left) Gog-le-hi-te II view to the west (center) Milwaukee Waterway to the north (right)

SOURCE: Port of Tacoma 2018

EXHIBIT 5-2 Estuarine and Intertidal Habitats at Mitigation Sites

Existing Port mitigation sites are summarized in **Table 5-4**. Some of the listed sites are outside of the Tideflats study area (e.g., Clear Creek, Upper Clear Creek, and Place of Circling Waters).

Slip 5

The Slip 5 habitat site includes about 7 acres of marine intertidal and subtidal habitat. Slip 5 is located on the west side of the mouth of the Blair Waterway, bordering Commencement Bay. Slip 5 provides a sand and gravel beach habitat ideal for juvenile salmon to find food and is also prime habitat for birds. Located on the west side of the mouth of the Blair Waterway, bordering Commencement Bay, Slip 5 provides a sand and gravel beach habitat ideal for juvenile salmon to find food. The site also provides habitat for birds.

Mowitch NRDA

The Mowitch NRDA habitat site includes 3.17 acres of estuarine intertidal/riverine tidal habitat where the mouth of Hylebos Creek becomes the Hylebos Waterway. In 1993, the Port created a 100-foot buffer with native vegetation and woody debris to give juvenile salmon a place to feed and hide.

Milwaukee Waterway

This intertidal and shallow subtidal habitat provides food and shelter for animals up and down the food chain. The sand, mud, and gravel house invertebrates such as epibenthic and benthic organisms. Clams, worms, and other burrowing animals, as well as birds, forage fish, and salmon, feed on plankton and other small organisms.

TABLE 5-4 Existing Port Habitat Sites in Study Area

Name	Size (acres)	Habitat Types and Species Use ^a
Slip 5 (Phase I)	2.50	Estuarine intertidal
Slip 5 (Phase II)	0.20	Estuarine intertidal
Mowitch NRDA	3.17	Estuarine intertidal/riverine tidal
Milwaukee Waterway	30.00	Estuarine intertidal and subtidal
Outer Hylebos	1.60	Estuarine intertidal
Fairliner	3.35	Estuarine intertidal and subtidal
q'iq'elut (deeded to City of Tacoma)	1.25	Estuarine intertidal
Clear Creek (Phase I)	9.70	Riverine lower perennial
Clear Creek (Phase II)	6.50	Riverine lower perennial
Gog-le-hi-te Habitat Improvement Action	1.13	Estuarine intertidal/riverine tidal
Slip 5 (Phase III)	7.00	Marine intertidal and subtidal
Inner Hylebos Peninsula	1.70	Estuarine intertidal
Orting Habitat Preservation Area	9.64	Riverine lower perennial
Gog-le-hi-te II	8.38	Estuarine intertidal/riverine tidal
APM Seaplane Ramp	0.29	Estuarine intertidal
Dick Gilmur Public Access	2.00	Marine intertidal
Sound Refining Cove	20.66	Estuarine intertidal
Place of Circling Waters	30.00	Estuarine intertidal/riverine tidal
EB-1B Alexander Avenue	1.70	Palustrine scrub shrub
Upper Clear Creek	40.00	Riverine lower perennial

SOURCE: Port of Tacoma 2018

a. Habitat type based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

The area at the mouth of the former Milwaukee Waterway was shaped into 30 acres of high-quality intertidal and shallow subtidal habitat. The site connects two existing sand flats and the Puyallup River delta to provide a complex of habitat types vital to juvenile and adult salmon.

Outer Hylebos

Outer Hylebos is approximately 1.6 acres of estuarine intertidal and subtidal habitat. Located along Marine View Drive, the Outer Hylebos was originally designed and built by the Puyallup Tribe of Indians on Port property through an agreement in 1995. Ownership of the site was transferred from the Port to the Puyallup Tribe of Indians as part

of that agreement. The site includes intertidal, salt marsh and riparian habitats. It provides food and shelter for juvenile salmon migrating out of Hylebos Creek, as well as Puyallup River salmon rearing in the nearshore areas of Commencement Bay.

Fairliner

A former marina has new life as a home for birds and fish. The Fairliner Habitat Area is located in a small cove next to Washington United Terminals, a container terminal on the west side of the Blair Waterway. The quiet beach and tidal mudflat provide a rich feeding environment for fish and birds. The quiet beach and tidal mudflat provide a rich feeding environment for fish and birds. Native trees and plants such as shore pine, kinnikinnick (bearberry), Oregon grape, and wild strawberry provide refuge for nesting birds.

q^wiq^wəlut (deeded to City of Tacoma)

Nestled between Washington United Terminals and U.S. Oil, this site of a former fertilizer plant now features a public overlook with views of salt marsh and mudflat habitat ideal for young salmon. q^wiq^wəlut or "Little Marsh" (formerly Rhone-Poulenc) consists of 1.25 acres of estuarine intertidal habitat. The Port deeded the site to the City of Tacoma after construction.

Clear Creek (Phases I and II)

The Port built an outlet channel, tidally-influenced freshwater mudflat refuge bay, bridge, and sluice gate at the mouth of Clear Creek. Clear Creek is the last freshwater tributary to the Puyallup River, about three miles upstream from Commencement Bay. This site provides salmon with food, shelter, and access to nearly 10 miles of streams and creeks. It is also home to birds and other wildlife. A variety of trees—big-leaf maple, dogwood, hazelnut, red alder, vine maple and western red cedar—shade and cool the water for fish and offer nesting places for hundreds of birds.

Gog-le-hi-te I

The Gog-le-hi-te wetland complex is a series of existing and planned habitat sites. Currently, three different restoration actions (Gog-le-hi-te I, Gog-le-hi-te Habitat Improvement Action, and Gog-le-hi-te II) have re-created over 13 acres of estuarine intertidal/riverine tidal habitat. The Puyallup River levee was breached in two locations to provide off-channel habitat for migrating salmon.

Inner Hylebos Peninsula

The Inner Hylebos Peninsula habitat site includes approximately 1.7 acres of estuarine intertidal habitat. The site is located on the eastern side of Hylebos Waterway. This project was completed through a partnership between the Puyallup Tribe of Indians and the Port. The site was constructed and is still owned and managed by the Puyallup Tribe of Indians. The habitat site was created by converting upland into intertidal mudflat to provide habitat for epibenthic organisms, thereby creating a food source and rearing habitat for juvenile salmon migrating out of Hylebos Creek and Puyallup River.

Orting Habitat Preservation Area

The Orting Habitat Preservation Area is located adjacent to the upper Puyallup River and provides approximately 9.6 acres of preserved riparian forest along 466 feet of river frontage. Site topography and geomorphic formations suggest the property is within the historical channel migration zone of the Puyallup River. The Port transferred the property's title to Pierce County and the deed limits the site to public use as open space, passive recreation, flood control, and habitat restoration, preservation, and management. The site cannot be used for any other purpose.

Gog-le-hi-te II

A public overlook provides views of wetland habitat along the Puyallup River. The off-channel habitat supports a healthy ecosystem for juvenile salmon, plants, and a variety of wildlife.

APM Seaplane Ramp

An old asphalt slab associated with a former seaplane ramp, located at the northern tip of the West Sitcum Terminal, was removed and replaced with new substrate within the slab footprint. This change in substrate provides more opportunity for increased productivity of epibenthic organisms, in turn providing more prey for juvenile salmonids as they migrate out from the Puyallup River. By providing more prey availability to an area highly utilized by juvenile salmon, this small but highly productive site contributes to the overall salmon rearing function of Inner Commencement Bay.

Dick Gilmur Public Access

This site's restored shoreline provides habitat for the hundreds of birds and other wildlife that live along the storm-scoured shore. Native plants help anchor soil and provide shade, food, and refuge. Long-

term plans call for restoring more of the beach and tidelands, returning critical Puget Sound habitat to the Commencement Bay shoreline along Marine View Drive.

Sound Refining Cove

The Sound Refining Cove is 20 acres on the eastern side of Hylebos Waterway and is a combination of estuarine intertidal and subtidal habitat. The property is owned by the Port; however, this habitat site was constructed and is maintained by Occidental Chemical through an agreement associated with the Superfund cleanup of Hylebos Waterway.

Place of Circling Waters

Once a gravel mine and inert waste landfill, this 30-acre consolidated habitat site at the mouth of Hylebos Creek now features valuable intertidal estuarine marsh, tidally-influenced stream channels and forested riparian open space. The site is connected to several other restored areas along the creek. It is part of a larger effort to rejuvenate salmon runs on the tidally-influenced stream.

EB-1B Alexander Avenue

The Alexander Avenue – EB-1B Wetland Restoration (EB-1B) is 1.7 acres of palustrine emergent and scrub-shrub habitat and associated buffer. The restoration includes excavating over 5,000 cubic yards of fill and replanting the area with native shrubs and non-invasive herbaceous species.

Upper Clear Creek

This sizable habitat restoration along Clear Creek, a tributary to the lower Puyallup River, includes rehabilitated floodplain wetlands, more natural meandering and braided creek channels and other habitat features, such as ponds, hummocks, alcoves, standing snags and large woody material. Invasive reed canarygrass was replaced with native grasses and more than 145,000 native plants, shrubs, and trees. The site is now home to a variety of wildlife, including salmon, trout, frogs and salamanders, herons, eagles, and several species of songbirds and waterfowl.

5.2 Potential Impacts

This section evaluates potential impacts from each alternative.

5.2.1 Thresholds of Significance

Thresholds of significance include:

- **Harm to Fish and Wildlife Species.** Impacts would be significant if construction or operational activities would result in a large-scale take (mortality, injury, or deleterious behavioral changes on more than a few individual organisms) on fish and wildlife species listed under the federal Endangered Species Act (ESA) (threatened or endangered).
- **Lower Quality or Reduced Quantity of Existing Habitat.** Impacts would be significant if the alternative proposes activity that would degrade existing habitat quality or reduce the quantity of existing habitat within the study area.
- **Less Habitat Connectivity.** Impacts would be significant if the alternative would result in a reduction of habitat connectivity for fish and wildlife species to use.
- **Reduction of Habitat Restoration or Water Quality Enhancement Activities.** Impacts would be significant if the alternative would prevent or preclude more opportunities for new habitat restoration sites or prevent efforts to enhance water quality through policies, programs, or funding.

5.2.2 Alternative 1 – No Action Alternative

The No Action Alternative serves as a baseline condition for comparison with the development alternatives. Existing conditions in the study area would continue. Alternative 1 maintains existing zoning, with the most extensive heavy industrial zoning among the four alternatives. Investments in fish and wildlife habitat and shoreline access and recreation are in response to development permits or grants. Sea level rise is addressed on a site- or project-specific basis. The Puyallup River remains part of the Core Area. This alternative will maintain the policies in the City of Tacoma’s adopted Comprehensive Plan. This includes the existing Core and buffer areas and other policies of the Container Port Element.

The area would continue to develop through individual permit applications with impacts on existing habitat analyzed within the existing regulatory framework. Each project would require evaluation to determine if there are impacts and associated mitigation.

Alternative 1 is not expected to have a significant adverse impact on plants and animals because there is no expectation that there will be proposals that would cause harm to fish and wildlife species or lower the quality of or reduce the quantity of existing habitat. It also does not propose changes to the existing habitat connectivity or reduction of habitat restoration or water quality enhancement activities. Alternative 1 does not contribute to the City meeting its tree canopy goal.

5.2.3 Alternative 2

Alternative 2 continues to support port activity but increases limits on non-industrial use in the Core Area. There is some shift from the Core area to Transition Areas to accommodate industry-supportive uses such as industrial services, repairs, and other uses. This alternative envisions smaller strategic habitat sites integrated with new development and includes a planned approach to restoration and mitigation opportunities. It also includes more shoreline and habitat restoration in the Northeast Tacoma Transition Area, as well as intermittent larger habitat sites within this area to support salmon migration.

As compared to Alternative 1, Alternative 2 envisions improved water quality, salmon habitat, and strategies to address climate change within the Puyallup River. Alternative 2 identifies discrete strategic opportunities for habitat restoration within and adjacent to the study area, within the Foss Waterway, Puyallup River, Wapato Creek, the Blair Waterway, Hylebos Creek, and Hylebos Waterway. Alternative 2, similar to the other development alternatives (Alternative 3 and Alternative 4), envisions a coordinated approach to projects and therefore to potential mitigation. More shoreline buffer enhancement could occur, and intermittent larger habitat sites may be established as part of planned development. More shoreline access occurs with Alternative 2 than in Alternative 1 within the Transition Areas, in addition to the planned restoration areas. Assuming planned development under Alternative 2 would result in more coordinated and therefore larger restoration areas, habitat quality, quantity, and connectivity could improve.

Alternative 2 would not harm fish and wildlife species and provides for proposals that could enhance their environments. This alternative also proposes enhancements to existing habitats, habitat connectivity, and opportunities for restoration and water quality enhancements. There are no significant adverse impacts on plants and animals from Alternative 2.

Completion of the SR 509 shared use path is a priority under this alternative. Sea level rise adaptation measures are considered for the study area and are focused on preserving industrial lands and protecting essential public facilities. Decarbonization efforts target the 2040 Goal. Adverse impacts to habitat quality, quantity, and connectivity could result if adaptation measures specific to retaining restored areas are not planned or implemented in the study area.

5.2.4 Alternative 3

Alternative 3 would continue to support port activity and would increase limits on non-industrial uses in the Core Area. Some areas are shifted from the Core Area to Transition Areas to accommodate job-rich economic sectors compatible with industry. Smaller strategic habitat sites are integrated with new development. Alternative 3 envisions the most improved water quality, salmon habitat, and strategies along the Puyallup River, as well as along Hylebos and Wapato creeks. It also envisions enhanced shoreline access and recreation along the NE Tacoma Transition Area, along with the most shoreline and habitat restoration and larger sites to support salmon migration. In addition, public acquisition of privately owned properties on the hillside adjacent to the MIC are also assumed under this alternative.

Alternative 3 identifies the broadest coordinated approach to mitigation and restoration within the study area. Expanded corridors are identified for both strategic habitat restoration opportunities as well. Mitigation sites would be identified in advance of permitting. Restoration or mitigation actions occur concurrent with sea level rise adaptation and analysis, and pro-active investments in restoration occur. Managed retreat is assumed under sea level rise adaptation measures. Because this alternative envisions the most area for habitat enhancement, including identifying targeted habitat corridors and sites that would likely provide a range of topographic elevations, it has the opportunity to provide the most benefit among the alternatives to habitat quality, quantity, and connectivity. Among the alternatives, Alternative 3 would provide the greatest level of resiliency with respect to sea level rise adaptation which could benefit plants and animals if it preserves habitat, and the most aggressive decarbonization strategy with a decarbonization goal of 2030. Like Alternative 2, Alternative 3 would result in mostly beneficial effects for plants and animals in the study area. Habitat restoration and mitigation sites under Alternative 3 are the most expansive among the alternatives and provide the greatest degree of resiliency to sea level rise.

Alternative 3 would not harm fish and wildlife species and provides for proposals that could enhance their environments. This alternative also proposes enhancements to existing habitats, habitat connectivity, and opportunities for restoration and water quality enhancements. There are **no significant adverse impacts** on plants and animals from Alternative 3.

5.2.5 Alternative 4

Alternative 4 prioritizes expansion of Port Container facilities, port/rail related uses, and compatible industrial uses within the Core Area. It allows for the greatest degree of flexibility in determining additional industrial uses. It retains existing uses including a mix of Port facilities, general industry, commercial uses, and transportation. It assumes widening of the Blair Waterway. The Puyallup River is also assumed to be part of the Core Area under this alternative.

Smaller habitat restoration sites, as compared to Alternatives 2 and 3, would be implemented as new development occurs. Restoration would occur in the context of Commencement Bay and the Lower Puyallup Watershed (at a broader scale than under Alternatives 2 and 3, which focus habitat restoration within a watershed context but specific to the subarea).

Alternative 4 would not harm fish and wildlife species and provides for proposals that could enhance their environments, but beneficial effects to plants and animals would be fewer than the other development alternatives. There are **no significant adverse impacts** on plants and animals from Alternative 4.

Sea level rise analysis under Alternative 4 is focused on measures to preserve industrial lands and protect essential public facilities such as Port operations, with options for sea level rise adaptation and mitigation. With respect to decarbonization goals, no specific target is assumed; rather, it is assumed that decarbonization goals and strategies will be coordinated and accelerated. Protection of habitats for plants and animals and preservation or enhancement of habitat restoration areas would benefit plants and animals.

5.3 Avoidance, Minimization, and Mitigation Measures

5.3.1 Mitigation Measures Common to All Alternatives

All alternatives are subject to the existing regulatory permitting framework to protect plants and animals. Best management practices (BMPs) and regulatory requirements at the local, state, and federal levels would protect water quality, fish and wildlife species, and habitat connectivity.

Other Potential Mitigation Measures

Policy and Regulation Updates

To continue avoidance of significant adverse impacts, best available science (BAS) should be reviewed 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.

The goals, policies, and regulations in Tacoma's Shoreline Master Program are intended to achieve no-net-loss of shoreline ecological function. The City's Shoreline Master Program Restoration Plan is a voluntary plan identifying opportunities to lift shoreline functions to have a net gain, as well as serve as a source of mitigation opportunities (City of Tacoma 2011c). The City has sought \$1 million in funding for a Commencement Bay assessment. Through that effort, the City could use the information to update the Shoreline Master Program Restoration Plan.

Habitat Restoration Approaches

Mitigation measures could be implemented to specifically address habitat restoration sites in the area that would benefit plants and animals. Such restoration activities could also support the protection of tribal treaty rights for fishing, hunting, and gathering.

Specific mitigation measures for habitat restoration vary by alternative. The development alternatives all assume that a programmatic approach to both mitigation and restoration would be developed for the study area. A programmatic approach to mitigation

would build off of the existing regulatory framework in the study area, including relevant Comprehensive Plan policies, Salmon Recovery Plans for the watershed, and relevant local codes, policies, and land development considerations.

A programmatic approach to mitigation would consider the habitats and species utilizing the study area, and target opportunities to structurally enhance specific sites and corridors for the benefit of all or portions of species life history stages. This could take the form of a master habitat restoration plan that may include following tribal treaty rights by protecting endangered species and ensuring tribal access to fisheries, soft shoreline armoring (soft armoring involves the creation or restoration of a natural shoreline system using nature-based shoreline management techniques), improving water quality standards around creeks, or revisiting buffer standards in relation to coastal flooding in the municipal code.

The Climate Vulnerability Assessment for the Tideflats Subarea (see Appendix G) provides information on impacts from potential sea level rise. The sea level rise evaluation of the area identified a medium risk to wetlands with a gradual loss of habitat. A programmatic approach to mitigation should consider sea level rise, and plan to enhance habitats at a range of topographic elevations so as to allow for habitat adaptation and resiliency to sea level rise. In contrast to the development alternatives, the No Action Alternative would incorporate mitigation on a project-by-project basis in compliance with the existing regulatory requirements. Developing a proactive habitat restoration plan could address opportunities and priorities for restoration to protect and seek gain in ecological function.

5.3.2 Alternative 1 – No Action Alternative

Alternative 1 would comply with all existing BMPs and regulatory requirements to protect plants and animals.

Alternative 1 assumes that mitigation for habitat restoration, if required, would be implemented permit by permit. Mitigation would therefore be uncoordinated and would need to be developed specific to project impacts. Applicants would be required to follow mitigation sequencing and to develop appropriate mitigation commensurate with proposed project impacts on a case-by-case basis. Site-by-site mitigation is also likely to be expensive, given the relative scarcity of lands available on which to implement mitigation, and the relatively high costs of land in the study area.

5.3.3 Alternative 2

Alternative 2 would comply with all existing BMPs and regulatory requirements to protect plants and animals.

Alternative 2 proposes a coordinated approach to mitigation and restoration site implementation as compared to Alternative 1. This approach could include identifying sites for mitigation or working with property owners to enhance or preserve existing open space to serve as possible mitigation locations. Mitigation and restoration opportunities are identified in advance of permitting. As compared to Alternative 1, more shoreline buffer enhancement occurs, and intermittent larger habitat sites are established in the study area.

5.3.4 Alternative 3

Alternative 3 would comply with all existing BMPs and regulatory requirements to protect plants and animals.

Alternative 3 envisions the most mitigation and restoration area among the alternatives by establishing a coordinated mitigation and restoration strategy and site prioritization, a greater focus on connectivity among restoration areas, mitigation in advance of permitted activity, mitigation and restoration actions coordinated with sea level rise adaptation, as well as pro-active investments in restoration. Similar to Alternative 2, the approach under Alternative 3 could include (prior to permitting) identifying sites for mitigation or working with property owners to enhance or preserve existing open space to serve as possible mitigation locations.

5.3.5 Alternative 4

Alternative 4 would comply with all existing BMPs and regulatory requirements to protect plants and animals.

Alternative 4 assumes expansion of the Blair Waterway as well as smaller habitat restoration sites (as compared to Alternatives 2 and 3) as new development occurs. Mitigation and restoration actions are still assumed to be coordinated.

With respect to sea level rise, because Alternative 3 plans for the largest amount of total area, there is an underlying assumption that restored habitat areas would have the potential to incorporate a range of elevations, and that these areas are envisioned along riparian corridors, providing a greater degree of connectivity between habitat patches than under current conditions. As such,

Alternative 3, in that it envisions the most potential restored habitat area, the most connected habitat corridors, and the highest degree of resilience to sea level rise, is the preferred alternative from a plants and animals' perspective.

5.4 Significant Unavoidable Adverse Impacts

The study area is within a highly industrialized zone, the focus of which is economic development. Ongoing impacts on plant and animal habitat will occur under all alternatives, as they all presume ongoing development within the study area.

It is the degree of development as measured against the degree of mitigation that varies among alternatives. None of the alternatives is expected to result in significant adverse impacts on plants and animals that cannot be mitigated.



CHAPTER 6 Cultural Resources

This chapter includes a description of recorded cultural resources and related policies and regulations within the boundary of the Tacoma Tideflats study area. The chapter provides the context for development in the Tideflats area and describes current conditions and discusses maritime resources, spuyalepab’s place names, and Traditional Cultural Properties (TCPs) within the study area. The chapter considers the context of tribal and agency plans and regulations that apply to lands inside and abutting the study area. This chapter does not include a parcel-level review of all historic-age buildings, structures, and objects within the study area. This chapter describes the potential impacts on cultural resources associated with each alternative and discusses how these potential impacts can be avoided, minimized, and mitigated.

6.1 Affected Environment

6.1.1 Existing Policies and Regulations

Cultural resources within the study area are protected by several federal, state, and local regulations, plans, and policies used to manage activities that have the potential to impact those resources. Federal laws, regulations, and policies are presented in **Table 6-1**, and state laws, regulations, and policies are presented in **Table 6-2**.

The study area is located within Pierce County in the City of Tacoma and the Puyallup Indian Reservation and borders the City of Fife. Pierce County and the City of Tacoma have developed plans, policies, and codified regulations to manage activities and development within their jurisdictions that may impact cultural resources. The City of Fife is located within the boundaries of the Puyallup Indian Reservation but is governed independently. The City of Fife does not have a formal

Chapter Terminology

A *cultural resource* is any district, site, building, structure, or object that has been listed in, has been determined to be eligible for listing in, or may be eligible for listing in the National Register of Historic Places (NRHP), Washington Heritage Register (WHR), Pierce County Register of Historic Places, and/or City of Tacoma Register of Historic Places. Cultural resources can be archaeological, including human remains and cemeteries, or a historic built environment resource.

Cultural resources also include Traditional Cultural Properties, which is a vernacular term used within the cultural resources management field and is defined by the National Park Service (NPS) as a property “that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that are rooted in that community’s history, and are important in maintaining the continuing cultural identity of the community” (NPS 1998).

Historic Preservation Program and is guided by federal and state laws and regulations, as well as interlocal agreements with Pierce County.

A summary of federal, state, and local plans, policies, and codified regulations is presented in **Table 6-3**.

TABLE 6-1 Federal Laws, Regulations, and Policies Related to Cultural Resources

Law/Regulation/Policy	Lead Agency	Description
National Historic Preservation Act (NHPA) (Title 54 United States Code [U.S.C.]); Section 106 of the NHPA (36 Code of Federal Regulations [CFR] Part 800)	Variable	The NHPA was approved on October 15, 1966, for the management and preservation of historical and archaeological sites. Under this act, the NRHP, National Historic Landmarks List, State Historic Preservation Offices (SHPO), and Tribal Historic Preservation Offices (THPO) were created. Washington State’s SHPO is the Department of Archaeology and Historic Preservation (DAHP), which is the state agency that administers NHPA compliance in Washington. The procedures for implementing the NHPA are detailed in the Protection of Historic Places regulations. Section 106 of the NHPA requires federal agencies to consider the effects of project undertakings, project approvals, or project funding on historic properties. This process requires consultation with the relevant THPO, Native American tribes, and Native Hawaiian organizations.
Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. 2001–13)	Variable	Enacted on November 16, 1990, NAGPRA establishes rights for lineal descendants, Native Americans and tribes, and Native Hawaiian organizations to repatriate their culturally affiliated items, including human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items and the intentional and inadvertent discovery of Native American cultural items on federal and tribal lands only.
American Antiquities Act of 1906 (16 U.S.C. 432)	Variable	First United States law to provide general protection for any kind of cultural or natural resource and the first national preservation law for the United States. Provides procedures for the designation, care, protection, management, and permitting for/of national monuments, historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated on federally owned or controlled lands.
Archaeological Resources Protection Act of 1979 (ARPA, 16 U.S.C. 470aa-470mm)	Variable	ARPA was enacted to further strengthen the permitting procedures required for conducting archaeological fieldwork on federal lands. Includes ownership acknowledgement, preservation of objects and associated records in a “suitable” institution and prohibits public disclosure.
Section 4(f) of the Department of Transportation Act (DOT Act, 49 U.S.C. 303)	U.S. Department of Transportation	Relates to procedures for historic sites, archaeological resources, tribal lands and Indian reservations, and Traditional Cultural Properties for federal highway projects.
Abandoned Shipwreck Act, of 1988 (ASA, 43 U.S.C. 2101–2106)		Relates to providing guidelines for state responsibility of the management of abandoned resources in state waters and submerged lands.

TABLE 6-2 State Laws, Regulations, and Policies Related to Cultural Resources

Law/Regulation/Policy	Lead Agency	Description
Procedures for State, Tribal, and Local Government Historic Preservation Programs (36 CFR Part 61)	DAHP and Local Governments	Federal regulation authorizing state and tribal historic preservation programs and certifies local governments to carry out the purpose of the NHPA. This is the basis for historic preservation programs and ordinances.
State Environmental Policy Act (SEPA, Revised Code of Washington [RCW] 43.21C, Washington Administrative Code [WAC] 197-11-330)	Variable (DAHP is Technical Expert for Cultural Resources)	SEPA requires government decision makers to consider the likely environmental consequences of a proposal and require mitigation measures.
Governor’s Executive Order 21-02	Variable	Enacted in 2021, Governor’s Executive Order 21-02 requires state agencies to consider the impacts of project undertakings, project approvals, or project funding on significant cultural and historic properties. This process requires consultation with DAHP, the Governor’s Office of Indian Affairs, and relevant Native American tribes.
Washington Heritage Register (Senate Bill 363; RCW 27.34.200, WAC 25-12)	DAHP	Created in the March 19, 1971, Executive Session of the State of Washington Advisory Council on Historic Preservation and maintained by DAHP. Actions affecting resources listed on this register by any subdivision of state government or recipient of state funds must comply with SEPA and Executive Order 05–05.
Washington Heritage Barn Preservation Program (RCW 27.34.400)	DAHP	Relates to the preservation of heritage barns 50 years or older.
Washington State Main Street Program (WAC 25-50)	DAHP	Relates to procedures of application for a designation of Washington main street communities.
Archaeological Sites and Resources (RCW 27.53)	DAHP	Relates to the conservation, preservation, and protection of archaeological sites and resources.
Archaeological Site Public Disclosure Exemption (RCW 42.56.300)	DAHP	Restricts the distribution of information about the location of archaeological sites to the public for the protection and preservation of those sites.
Human Remains (RCW 68.50)	DAHP	Relates to the protection, management, and processes in the care of human remains.
Indian Graves and Records (RCW 27.44)	DAHP	Relates to the protection, management, and processes in the care of Native American cemeteries, historic graves, and related records.
Abandoned and Historic Cemeteries and Historic Graves (RCW 68.60)	DAHP	Relates to the preservation and protection of abandoned and historic cemeteries and graves including human remains.
Archaeological Excavation and Removal Permit (WAC 25-48)	DAHP	Relates to the procedures of application for and review processes of archaeological excavations and removals; permits are issued by DAHP.
Archaeological activities on state-owned aquatic lands – Agreements, leases, or other conveyances (RCW 79.105.600)		Relates to the provisions to enter into agreements, leases, or other conveyances for archaeological activities on state-owned aquatic lands.

TABLE 6-3 Local Laws, Regulations, and Policies Related to Cultural Resources

Law/Regulation/Policy	Lead Agency	Description
Puyallup Tribe of Indians Comprehensive Plan	Puyallup Tribe of Indians	Comprehensive Plan that shares current baseline conditions, a vision, and policies for a zoning planning area and beyond, it includes the full Tideflats study area and beyond. The protection of cultural resources is a key focus of the plan. It helps communicate “ priorities for cultural resource protection with other governments and agencies.”
Pierce County Comprehensive Plan	Pierce County	Comprehensive Plan used to guide the identification, protection, and enhancement of historic properties and cultural landscapes throughout unincorporated Pierce County.
Pierce County Structures of Historical and Architectural Significance (Pierce County Charter [PCC] Chapter 2.88)	Pierce County	Relates to the Landmarks and Historic Preservation Commission and the designation, preservation, protection, and enhancement of historic and archaeological resources.
Pierce County Archaeological, Cultural, and Historic Resources (PCC 18S.30.020)	Pierce County	Relates to development within shorelines for the protection of archaeological, cultural, and historic resources.
Pierce County Current Use Assessment Open Space Land and Public Benefit Rating System (PCC 2.114.060)	Pierce County	Relates to the public benefit rating system; to those properties that qualify under the open space land classification in the current use assessment program, covering archaeological sites and historic landmark sites.
Tacoma Tideflats Subarea Plan Planned Action Ordinance	City of Tacoma	Planned Action Ordinance for the Tacoma Tideflats Subarea Plan is proposed for review and approval by City Council subsequent to the end of the SEPA EIS process and development of the Subarea Plan.
City of Tacoma Historic Preservation Plan (Amended Ordinance No. 27996)	City of Tacoma	Adopted in 2011, this Preservation Plan defines the City of Tacoma’s preservation goals, policies, and actions for preservation and neighborhood conservation.
City of Tacoma Shoreline Master Program (Tacoma Municipal Code [TMC] Title 19, Ordinance No. 28612)	City of Tacoma	Archaeological, historic, and cultural element, relates to the management, protection, preservation, and/or restoration of buildings, sites, and areas having archaeological, historic, or cultural value or significance within the shoreline.
Landmarks Preservation Commission (TMC Chapter 1.42)	City of Tacoma	Adopted in 2005, relates to the Landmarks and Historic Preservation Commission and their duties to the designation, preservation, protection, and enhancement of historic and archaeological resources.
Preventing Neglect of Historic Properties (TMC Chapter 8.35)	City of Tacoma	Relates to encouraging the maintenance, protection, use, and enhancement of iconic and historic cultural assets and assisting the property owner as needed.
Historic Preservation Land Use Decisions (TMC Chapter 13.05.040)	City of Tacoma	Related to supporting the goals of and providing regulatory procedures for historic preservation decision-making bodies.
Tacoma Landmarks and Historic Special Review Districts Code (TMC Chapter 13.07, Ordinance 27429 § 3)	City of Tacoma	Relates to the designation, preservation, protection, and enhancement of historic resources including designated City landmarks and historic resources that are eligible for state, local, or national listing.

Law/Regulation/Policy	Lead Agency	Description
Archaeological, Cultural, and Historic Resources (TMC Chapter 13.12.570)	City of Tacoma	Part of the Environmental Code relates to the process, content, and format of an EIS, and to set forth the procedures for two specific kinds of non-project EIS reviews. This code addresses archaeological, cultural, and historic resources for projects located within the Downtown Tacoma Regional Growth Center and within the Tacoma Mall Neighborhood Regional Growth Center in areas where a Subarea Plan and a companion area-wide, non-project EIS have been completed.
Arts Commission (Fife Municipal Code [FMC] Chapter 4.16)	City of Fife	Related to the stewardship of public art, arts education, and cultural development; includes guidance for the commission, for Fife’s cultural and tribal heritage.
Naming Public Parks and Recreation Facilities – Selection of Name – Criteria (FMC 12.32.010)	City of Fife	Guidance for naming public parks and recreation facilities and their relationship with a historical figure, place, event, or other instance of historical or cultural significance.
SEPA Guidelines (FMC 17.04)	City of Fife	Provides supplementary authorization to WAC 197-11-660 for the City to improve and coordinate plans, functions, programs, and resources to preserve historic, cultural, and natural aspects of national heritage.
Fish and Wildlife Habitat Conservation Areas (FMC 17.15)	City of Fife	Definitions of Habitats of Local Importance including areas established by the Puyallup Tribal government as habitat areas of Tribal importance for economic, social, cultural, and ceremonial reasons.
Low Impact Development Permitting – Site Assessment (FMC 21.10.010, Ordinance 1685 § 1[Exh. A], 2009)	City of Fife	Related to site design process for low impact development. Requires a soils report prepared by a geotechnical professional engineer detailing any known historic, archaeological, and cultural features located on or adjacent to the site if present.
Resolution 1471	City of Fife	Authorizes interlocal agreement with Pierce County ratifying countywide planning policies (Special).
Resolution 1647	City of Fife	Authorizes City Manager to execute interlocal agreement with Puyallup Tribe, government services (Special).

The Puyallup Tribe of Indians has recently published a Comprehensive Land Use Plan that overlaps with the study area and establishes regional and local goals for the protection and preservation of cultural resources. The Tribe’s right to fish, harvest shellfish, hunt, and gather at usual and accustomed areas is central to the cultural identity of the Tribe. Along with associated policies, Goal 3.0, is that “Local and regional governments plan within the cultural resource protection framework established by the Tribe.”

There are no interlocal plans or policies between the Puyallup Tribe of Indians and Pierce County, City of Fife, or City of Tacoma for managing cultural resources beyond the existing federal, state, and local laws and regulations.

6.1.2 Current Conditions

The Tacoma Tideflats area holds a rich history of land use that began long before non-Native American settlement. This area has been a valuable resource for subsistence, travel, trade, and economic opportunity to Native American communities living along the shores of Puget Sound and the Puyallup-White River watershed. It has also played a dynamic role in the development of the City of Tacoma and history of ocean cargo operations in the Pacific Northwest.

Archaeological Context

The Tacoma Tideflats area is situated at the modern delta front of the Puyallup River as it emerges into Commencement Bay. Commencement Bay is “*an infilled marine embayment of the Puget Sound characterized by a complex history of glacial scouring, sediment infilling, deltaic progradation, compaction, tectonic subsidence, and eustatic sea level rise*” (Rinck 2014). This dynamic history has important implications for the formation and preservation of archaeological sites in the past.

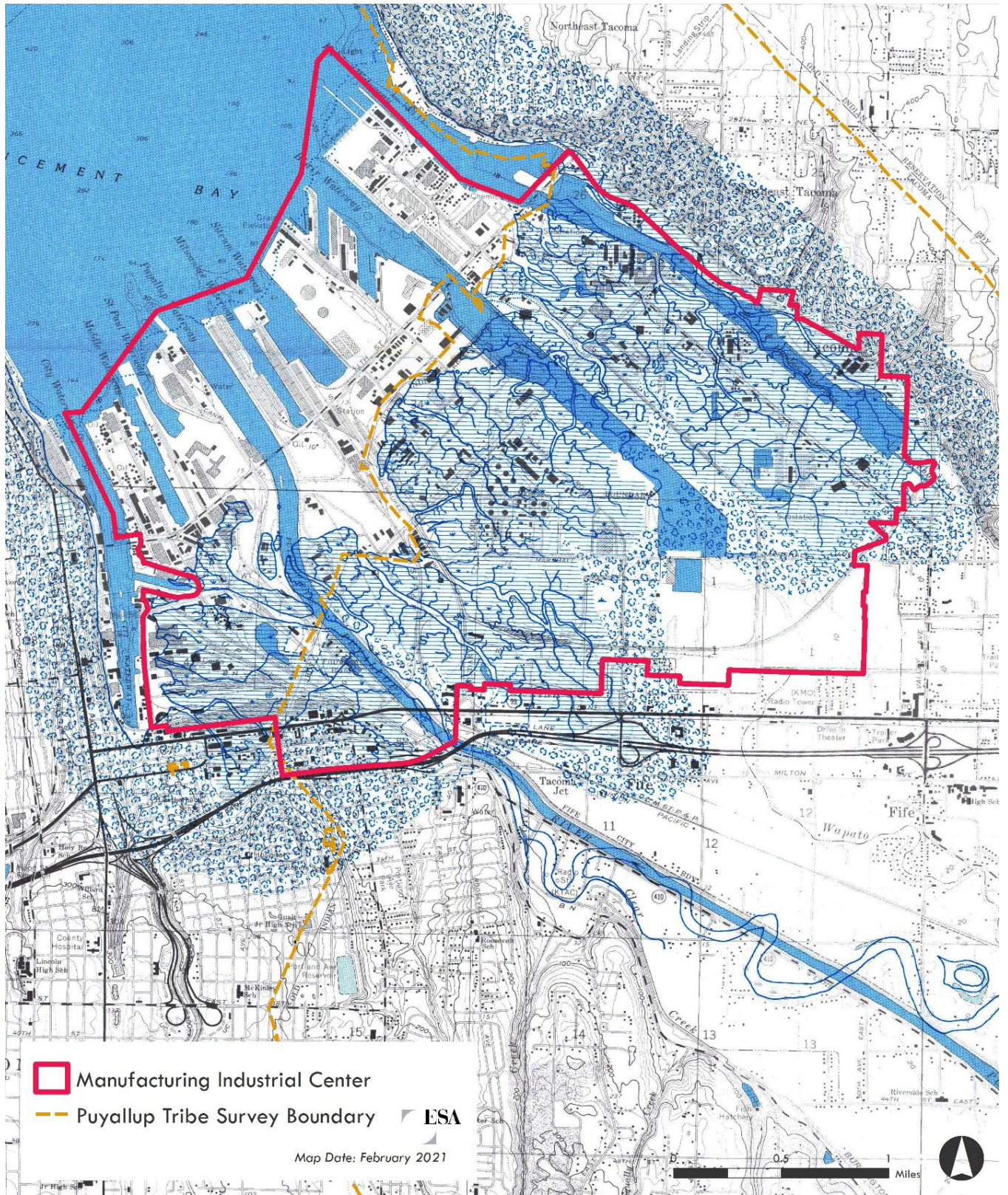
During the Vashon stade (approximately 17,400 to 16,400 years ago) of the Fraser glaciation, the Puget lobe of the Cordilleran ice sheet advanced southward out of Canada, overran the Puget Lowland, and advanced as far south as present-day Tenino, Washington, before rapidly retreating. At the late glacial maximum, Tacoma was covered by approximately 0.5 mile of ice. Because global sea level was substantially lower during the last glacial maximum, glacial retreat exposed dry land. Global sea level rose quickly until about 7,000 years ago. Approximately 6,000 years ago, the mouth of the Puyallup River was situated near Sumner, Washington, some 13 miles southeast of Tacoma.

The Puyallup River embayment between Sumner and Tacoma began to fill about 5,700 years ago following a sector collapse on the flank of Mount Rainier. The collapse spawned the Osceola Mudflow, a lahar that flowed into the Puyallup River and White/Green River drainages (Dragovich et al. 1994; Zehfuss et al. 2003). The introduction of massive amounts of lahar runout sediment caused the Puyallup River delta front to prograde (advance toward Puget Sound) at the rate of approximately 6 meters per year, reaching Commencement Bay around 4,200 years ago (Pringle and Palmer 1992; Dragovich et al. 1994; Pringle and Scott 2001). Subsequently, smaller debris avalanches also caused lahars to flow in the Puyallup River, triggering further deltaic advance (Curl et al. 1988).

Historically, the Puyallup River followed a meandering course as it approached Commencement Bay and then divided into a series of distributary channels (**Exhibit 6-1**). As it followed this course, the river's environment shifted from floodplain to freshwater wetland and bog to saltwater wetland, and finally to tideflat. The current position of the Puyallup River delta became more stable and supratidal (typically above high tide) around 4,200 years ago (Pringle and Scott 2001; Rinck 2014).

Evidence of the location of the Puyallup River delta front is seen in geological mapping of the study area. Toward the south and east, the Tideflats area is underlain by Holocene epoch river deposits (alluvium). The Holocene epoch dates approximately from 11,500 years ago to the present day (**Exhibit 6-2**). Toward the north and west, the Tideflats area is underlain by artificial fill. This fill was placed over the tideflats, creating new lands that were used for industrial purposes. The study area also contains small areas that are underlain by Pleistocene-age glacial deposits, such as the area of glacial drift north of the Hylebos Waterway.

The different geologies have different implications for the potential formation and preservation of archaeological sites. Areas underlain by Pleistocene glacial deposits have been relatively stable since the beginning of the Holocene. These areas have generally not been subject to substantial natural deposition during this time. Thus, while such areas might have been used by people, the traces of their activities were not likely to have been buried in a manner conducive to their preservation. Portions of the Tideflats area underlain by alluvium had effectively stabilized by around 4,200 years ago. Whether these areas consisted of wetland (which is unlikely to have been favored for sustained human occupation) or drier floodplain, this setting would have experienced natural deposition capable of preserving archaeological sites, whether they were used for occupation or resource extraction (hunting, gathering, and fishing). Depending on the relative depths of site burial and ground disturbances caused by historic and recent development, this area has the potential to still contain Holocene archaeological sites. Portions of the Tideflats area that were built on filled lands are over the historic tideflats or mudflats. These areas were naturally intertidal and, therefore, not favored for occupation. However, tideflats are critical zones for shellfishing and fishing, and would have been an important area for Native subsistence activities. Such zones may contain remains of material culture and technology involved in these pursuits such as fishing net weights and hooks, as well as organic items that are less frequently preserved in the archaeological record, such as basketry and wooden fish weirs.



SOURCES: Bortleson et al. 1980; U.S. Surveyor General 1873

EXHIBIT 6-1 Historic Shoreline Changes



SOURCES: Prepared by ESA and BERK 2024; Puyallup Tribe Survey Boundary from U.S. Surveyor General 1873

EXHIBIT 6-2 Geological Map

The Washington State Department of Archaeology and Historic Preservation's (DAHP) Statewide Predictive Model classifies the study area as Very High risk for precontact-era archaeological sites (DAHP 2010). The Statewide Predictive Model does not account for historic and recent landform changes that may impact the archaeological sensitivity of the study area. The recently developed Cultural Resources Probability Map produced by the Puyallup Tribe of Indians also classifies the study area as having a high probability of containing cultural resources (Puyallup Tribe of Indians 2023). This chapter examined recorded archaeological sites located within the study area and within 200 feet of the MIC. It is usually not possible to fully delineate or determine the true boundaries of archaeological sites, particularly in urban and industrial settings; this is because sites often extend beyond project and even parcel boundaries where there is no right to access. Therefore, an arbitrary 200-foot buffer around the MIC has been used in this discussion; it does not imply that sites falling within the 200-foot buffer actually extend into the study area.

Sensitive information on archaeological and tribal resources is exempt from public disclosure requirements (see Table 6-1) and is described here only in general terms.

Cultural Context

The study area is located within the ancestral lands of the spuyaləpabš who are also known today as the Puyallup Tribe of Indians. This section presents a broad overview of spuyaləpabš history and cultural practices. It is primarily based on information provided by the Puyallup Tribe of Indians and is supplemented with published 20th and 21st century ethnographic studies and histories (Douglas 2016; Lane 1975; Puyallup Tribe of Indians 2020a, 2020b; Puyallup Tribe of Indians GIS Department 2017; Wright 2002). General studies were also reviewed regarding named places (Hilbert et al. 2001; Palmer & Palmer 1996; Smith 1940) and cultural practices (Suttles and Lane 1990; Spier 1936; Taylor 1974). Other sources consulted include historical maps and local histories. Less emphasis has been placed on these sources as they often omit or misrepresent Native lifeways.

The spuyaləpabš have lived in and utilized what is now the study area 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 named places known to be within or near the study area; these include locations of important events, village sites, and geographical features (**Table 6-4**). Some of these locations were

imprecisely recorded by ethnographers and may be outside of the study area, and other unpublished locations may be present. Permanent spuyaləpabs̓ villages were located along Commencement Bay, on rivers or smaller streams, either at the mouths or confluences, and also along the Puget Sound shoreline (Hilbert et al. 2001; Palmer and Palmer 1996; Smith 1940).

TABLE 6-4 Recorded Ethnographic Place Names

spuyaləpabs̓ Name	English Translation / Name	Source
puyaləp stuləkʷ; spuyaləp stuləkʷ	Puyallup River	Puyallup Tribe of Indians GIS Department 2017
x̓wəlč	Puget Sound/saltwater	Puyallup Tribe of Indians GIS Department 2017
puyaləp	Curved on the bottom of the water; Winding river	Hilbert et al. 2001:247, 250, no. 4; Palmer & Palmer 1996, 13, no. 1; Smith 1940, 9, no. 1
dəx̓wadačəb	Place of the tide; Place of where the tide has gone out/[mouth of stream]	Hilbert et al. 2001, 247, 250, no. 5; Palmer & Palmer 1996, 13, no. 2; Smith 1940, 9, no. 2
čadz	Hide [creek]	Hilbert et al. 2001, 247, 250, no. 6
qəl̓x̓əbid	Coming from the salmon eggs/[creek]	Hilbert et al. 2001, 247, 251, no. 8
bəs̓x̓uq̓id	A place that has swans/Swan Creek	Hilbert et al. 2001, 247, 251, no. 9
x̓ilix̓ali	Where there was a battle	Hilbert et al. 2001, 247, 251, no. 10
səx̓wux̓ix̓ilix̓	By means of battle	Hilbert et al. 2001, 248, 252, no. 13
ʔasx̓wəp	Seals all over the ground	Hilbert et al. 2001, 248, 252, no. 14
qal̓qaləqʷ; stuləg̓ʷali; spiqʷulc	Circles; Place of river; Potato/Wapato Creek	Hilbert et al. 2001, 248, 252, no. 15
x̓ax̓ł	Brushy/Hylebos Creek	Hilbert et al. 2001, 248, 252, no. 16
qal̓qaləqʷ	Circles/Flats between Hylebos Creek and Wapato Creek	Hilbert et al. 2001, 248, 252, no. 19; Palmer & Palmer 1996, 14, no. 5; Smith 1940, 10, no. 4

The spuyaləpabš are connected in many ways to neighboring Native groups through marriage, shared language, cultural practices, and oral traditions. The traditional language of the spuyaləpabš is the southern dialect of Lushootseed.

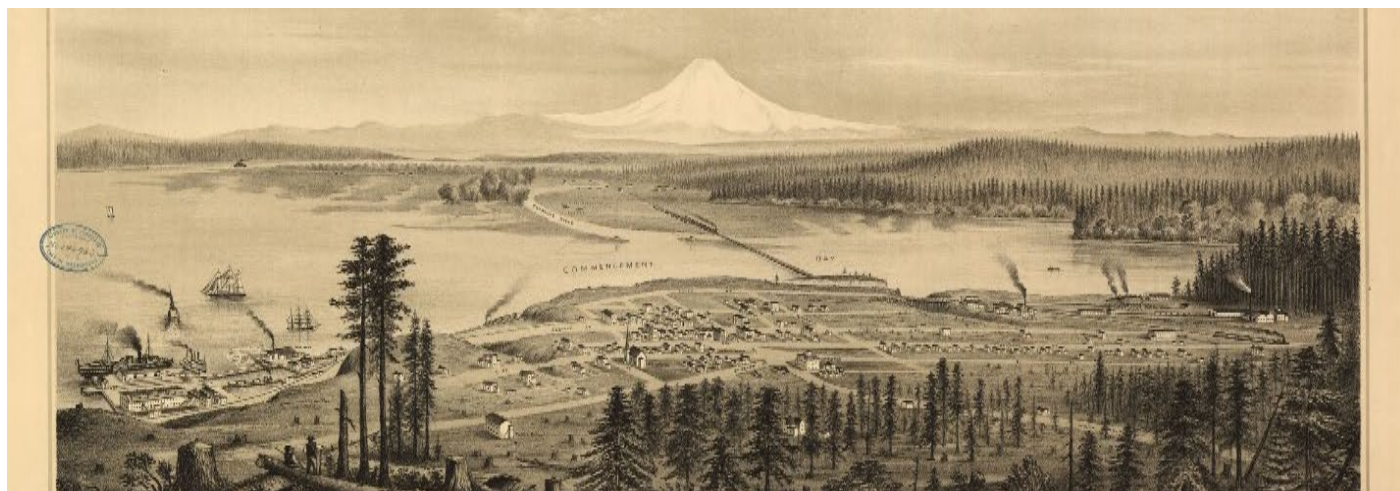
The traditional spuyaləpabš diet is based on fishing, shellfish harvesting, hunting, and gathering of roots, bulbs, and berries. Traditionally, salmon was not only a dietary staple but also an important trade commodity and source for making other byproduct commodities. Along with Commencement Bay, the Puyallup River and its tributaries are important fishing areas. Traditional fishing techniques for saltwater environments include trolling, long-lining, raking, spearing, harpooning, and seining. Techniques for riverine settings include lift nets associated with weirs, gaffing, falls traps, river seines, and spearing. Berries, roots, and other plants provide additional key components of the traditional diet along with shellfish and select terrestrial and marine animals. A wide variety of plants serve many purposes in traditional practices.

In the 19th century, the U.S. Government entered into a series of treaties with Native people throughout the Puget Sound region. The spuyaləpabš are signatories to the 1854 Treaty of Medicine Creek. Under this treaty, the U.S. Government established three reservations: the Puyallup, Nisqually, and Squaxin Island Reservations. The reservations were too small and poorly situated to provide proper access to resources. In 1855–1856, the spuyaləpabš participated in the Treaty Wars, which were a series of regional wars that spanned Puget Sound and east across the Cascade mountains. One outcome of the wars was the renegotiation of the Medicine Creek Treaty in 1856. This led to the expansion of the Puyallup Indian Reservation.

In 1886, the U.S. Government divided the Puyallup Indian Reservation into 178 allotments that were assigned to spuyaləpabš heads of households who were appointed non-Native guardians. This land division was intended to discourage the traditional village structure. It was a precursor to the Dawes Act of 1887, also known as the General Allotment Act, which used the same allotment methods to divide reservation lands across the nation. Under this arrangement, the spuyaləpabš lost ownership of a significant amount of the land within the Puyallup Indian Reservation. Some of these lands were regained under the Puyallup Land Claims Settlement of 1990.

Development in the Tacoma Tideflats Area

Non-Native settlement in Commencement Bay began in the mid-1800s. Drawn to the area by abundant logging resources and a deep harbor, Nicholas Delin opened the first sawmill and barrel factory on the bay in 1852. Two years later, the Northern Pacific Railway Company chose Tacoma as its western terminus of the company's transcontinental line, and subsequently constructed a wharf and warehouses in the Tideflats area (Magden et al. 1982). Development of the Tideflats area continued through the 1880s (**Exhibit 6-3**).



View of New Tacoma and Mount Rainier, Puget Sound, Washington Territory, 1878

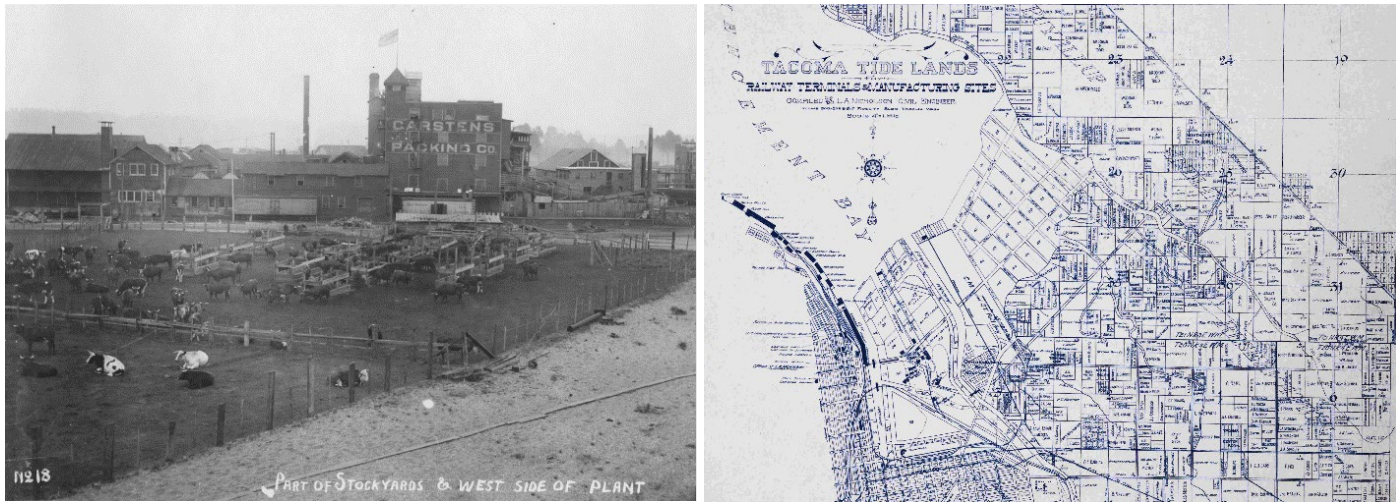
SOURCE: Library of Congress 1878

EXHIBIT 6-3 1878 Birds-eye View of Commencement Bay

Dredging along the current Thea Foss Waterway started at the turn of the 20th century and has continued within the Tideflats area to aid in flood control, improve useable land, and develop shipping channels (Magden et al. 1982; Bundy 2018). By the 1900s, electric street cars, additional railway holdings and lines, manufacturing sites, log ponds, tracts of expanded tideflats land, and the beginnings of one of the largest meat packing companies on the west coast reflected the bustling harbor (**Exhibit 6-4**). At that time, ship building was booming and four waterways—City (current Thea Foss), Middle, Puyallup, and Hylebos Creek—had been built along the Tideflats waterway (Thompson 1914; USGS 1900; White 1907).

World War I brought another economic boom to the region with increased demand for ships. By 1917–1918, foreign and domestic trade had reached a new high, and 38 municipal streetcars were needed to carry workers across the Tideflats area (Magden et al.

1982; Ott and Malloy 1993). In 1918, Pierce County citizens established the Port of Tacoma through a ballot measure (Port of Tacoma 2018a).



Left image: Carsten's Packing Company ca. 1909, view to the east. Right Image: Nicholson's Atlas of Tacoma and Vicinity, Tacoma tide flats for railway terminals and manufacturing sites, 1910

SOURCES: Tacoma Public Library 2020; Nicholson 1910

EXHIBIT 6-4 Tidelands Activities in the 1900s

By 1921, the Port's Pier 1 was dredged and developed (Magden et al. 1982; Port of Tacoma 2018b). In 1922, plans to extend Pier 1 and build Pier 2 were in motion (Magden et al. 1982). The first dredging contract was also the basis for the Port of Tacoma's policy for dredging companies to use excess dirt as fill for low-lying sites (Magden et al. 1982). These policies have since been updated to apply the best management practice for dredging material on a case-by-case basis. Depending on the sediment quality, placement of these materials can include but is not limited to raising the grade of an already-filled site, improve habitat areas, or placed in Commencement Bay open water disposal site (Warfield, personal communication, 2020). The Great Depression slowed business on the harbor, but development continued. A new publicly owned grain elevator and Port cold storage facility saved the region's agricultural goods from spoiling (Gallaci 2001). Under the New Deal, Pier 2 was extended by the Public Works Administration and a new Port-owned Industrial District formed by 1940 (Magden et al. 1982). During World War II, activities in the Tidelands area were reprioritized to support the war effort.

During the mid-20th century, industrial growth expanded in the Tidelands area. Growth, increased dredging, and landfill activities along with new industrial construction led to the establishment of seven

waterways: City (Thea Foss), Middle, St. Paul, Puyallup, Sitcum, Blair, and Hylebos. Businesses operating in the Tideflats area at that time included lumber, steel manufacturing, petroleum, shipbuilding, aluminum smelting, and engineering (Gleason 1949; Port of Tacoma 2018b; Van Pelt 2008). The U.S. Army Corps of Engineers (Corps) completed levee construction and straightening of the lower 3 miles of the Puyallup River in the 1950s (Gallaci 2001). The Tacoma Belt Line (now known as Tacoma Rail) ended its use of electrically powered cars and completed a much-needed switchyard at the end of the Sitcum Waterway to service the expanding manufacturing and industrial area (Ott and Malloy 1993). Modernization at the Port necessitated the widening and lengthening of the Hylebos and Blair Waterways in the 1960s and included new pier construction, warehouses, and specialized cargo facilities (Magden et al. 1982). These developments cemented the Tideflats area as one of the largest ports in North America.

The infrastructure and character of the Tacoma Tideflats area have changed to meet the different needs of the region after-non-Native settlement, and these changes can be visualized for future generations through the preservation of historic buildings, structures, and utility and infrastructure alignments. In addition, a connection to the past use of the Tacoma Tideflats area can be maintained through acknowledging, respecting, and protecting the cultural resources associated with the Puyallup Tribe of Indians.

Existing Resources

The following is a summary of previously recorded cultural resources within the study area. The identification and preservation of archaeological sites, spuyaləpabš place names, and historic built environment resources is an important key to understanding the cultural context of the area. Burial places associated with the spuyaləpabš were identified within the study area. No TCPs were identified in the study area.

Datasets reviewed for existing resources include the following:

- Puyallup Tribe of Indians publications.
- 20th and 21st century ethnographic studies.
- Washington Information System for Architectural and Archaeological Records Database (WISAARD) system maintained by DAHP.
- Pierce County Register of Historic Places.
- Tacoma Register of Historic Places.
- Tacoma Historic Properties Inventory Database.

Archaeological Nomenclature

An archaeological site is the location of objects that comprises the physical evidence of an Indigenous and subsequent culture, including material remains of past human life, including monuments, symbols, tools, facilities, and technological byproducts.

Precontact-era archaeological sites pre-date the 1790s, examples include:

- Lithic Material: Lithic scatter/quarry/misc. tool/debitage
- Camp: Short-term occupation site
- Village: Describes larger sites or cluster of dwellings
- Culturally Modified Tree (CMT): Carvings

Postcontact-era archaeological sites post-date the 1790s, examples include:

- Historic Debris Scatter/ Concentration: Refuse scatter, can scatter, refuse deposits, land fill, debris pit
- Homestead (in ruin): Collection of houses, barns, sheds, outhouses
- Railroad Properties: Alignment/grade where tracks have been removed, campsites, berms, trestles (in ruin), material dumps, and associated structural ruins

***spuyaləpabs̓* Place Names**

There are a minimum of 13 recorded places names within or near the study area, based on information willing to be shared by Native informants and as recorded by non-Native Ethnographers (Table 6-5). These include locations of important events, village sites, and geographical features (Table 6-4). Some of these locations were imprecisely recorded by ethnographers and may be outside of the study area. Other unpublished locations may be present.

TABLE 6-5 Recorded Ethnographic Place Names

<i>spuyaləpabs̓</i> Name	English Translation/Name	Source
puyaləp stulək ^w ; spuyaləp stulək ^w	Puyallup River	Puyallup Tribe of Indians GIS Department 2017
x̣ ^w əlč	Puget Sound/saltwater	Puyallup Tribe of Indians GIS Department 2017
puyaləp	Curved on the bottom of the water; Winding river	Hilbert et al. 2001:247, 250, no. 4; Palmer & Palmer 1996:13, no. 1; Smith 1940:9, no. 1
dəx ^w adačəb	Place of the tide; Place of where the tide has gone out/[mouth of stream]	Hilbert et al. 2001:247, 250, no. 5; Palmer & Palmer 1996:13, no. 2; Smith 1940:9, no. 2
čad ^z	Hide [creek]	Hilbert et al. 2001:247, 250, no. 6
qəl ^x abid	Coming from the salmon eggs/[creek]	Hilbert et al. 2001:247, 251, no. 8
bəsx ^w uqid	A place that has swans/Swan Creek	Hilbert et al. 2001:247, 251, no. 9
x̣ilix̣ali	Where there was a battle	Hilbert et al. 2001:247, 251, no. 10
səx ^w ux̣ilix̣	By means of battle	Hilbert et al. 2001:248, 252, no. 13
ʔasx ^w ap	Seals all over the ground	Hilbert et al. 2001:248, 252, no. 14
qal ^ʔ qaləq ^w ; stuləg ^w ali; spiq ^w ulc	Circles; Place of river; Potato/Wapato Creek	Hilbert et al. 2001:248, 252, no. 15
x̣ax̣ḷ	Brushy/Hylebos Creek	Hilbert et al. 2001:248, 252, no. 16
qal ^ʔ qaləq ^w	Circles/Flats between Hylebos Creek and Wapato Creek	Hilbert et al. 2001:248, 252, no. 19; Palmer & Palmer 1996:14, no. 5; Smith 1940:10, no. 4

Archaeological Resources

There are four recorded archaeological sites within the MIC and seven located just outside (**Table 6-6**). Two sites located within the MIC contain historic-era components related to the early to mid-20th century, one is precontact-era fish weir, and the final one is a precontact-era shell midden deposit. The sites located just beyond the MIC were reviewed to provide a better understanding of the types of resources that have been recorded on land that was not necessarily altered by historic dredging and fill activities and would be related to land and shoreline use within Commencement Bay. These seven sites include a precontact-era village, campsite, midden, and lithic isolate, and a historic-era debris scatter and piling, a road, and an isolate.

TABLE 6-6 Recorded Archaeological Sites

Area	Site No. and Time Period		Approximate Age	NRHP Status
	Precontact-Era	Historic-Era		
In study area		45-PI-706	Late 19th–mid 20th century	Not Evaluated
In study area		45-PI-1463	Prior to AD 1896–1951	Determined Not Eligible
In study area	45-PI-1557		Indeterminate	Not Evaluated
In study area	45-PI-47		Indeterminate	Not Evaluated
Outside study area	45-PI-974		Indeterminate	Not Evaluated
Outside study area	45-PI-1188		<500 years	Isolate/Not Eligible
Outside study area	45-PI-1203		<500 years	Not Evaluated
Outside study area		45-PI-975	AD 1886–1959	Not Evaluated
Outside study area		45-PI-1458	Late 19th century	Not Evaluated
Outside study area		45-PI-1290	AD 1935–1968	Determined Not Eligible
Outside study area	45-PI-930		AD 680–1040	Not Evaluated

SOURCE: DAHP 2023

NOTE: Not Evaluated = the resource has not yet been evaluated by DAHP for listing in the NRHP

Historic-Age Built Environment Resources

The study contains 190 historic-age built environment resources that have been recorded with DAHP on historic property inventory forms. Of those, 42 have been determined Not Eligible and 12 have been determined Eligible for listing in the NRHP (four of those determined Eligible are no longer present but still mapped as an existing resource; **Table 6-7**). Current DAHP guidelines are to use one historic property inventory form per inventoried resource; in some cases, however, more than one form per resource may exist due to legacy data included in the database. These resources include levees, bridges, industrial buildings, and structures. Some of these resources may have been incorrectly mapped, are no longer present, or were recorded on historic property inventory forms over 10 years ago. DAHP considers inventory forms completed over 10 years ago to be out of date.

TABLE 6-7 Historic Register–Listed and Determined Eligible Resources

Map ID No.	Resource	Built Date	Site No.	Determined Eligible for NRHP	Listed on NRHP	Listed on WHR	Listed on Pierce County Register	Listed on City of Tacoma Register	DAHP Property ID
1	11 th Street Bridge/Murray Morgan Bridge/City Waterway Bridge	1911	45-PI-654	x	x	x		x	54223
2	Fire Station No. 18 (Fireboat Station)*	1929	45-PI-653	x	x	x		x	31062
3	Lincoln Avenue Bridge	1929		x					90499
4	Puyallup River Bridge	1927		x					31786
5	Milwaukee Railroad – Puyallup River Bridge	1910		x					31231
6	Concrete Technology Corporation Plant	1951, 1956		x					91536
7	Fire Station No. 15	1905	45-PI-650		x	x		x	31605
8	Educators Manufacturing Company Building	1956/1957/1962		x					709853
9	Tacoma Substation (BPA)	1942		x					705968
NA	Puyallup Waterway Crossing**	1909	45-PI-260	x	x	x			700295
NA	Unnamed Building**	1925		x					158399
NA	Fire Station No. 12**	1948		x					705766
NA	M.V. Kalakala Ferry**	1935	45-PI-742	x	x	x			700376

SOURCES: DAHP 2023; Tacoma Register of Historic Places 2019

NOTES:

* Resource is adjacent to the study area.

** Resource is mapped within the study area by DAHP but is no longer present.

Historic Resources Nomenclature

Historic-Age Built Environment

Resource is a building, site, structure, object, or district that has reached a particular age threshold to be considered eligible for listing in a historic register (including, but not limited to, the National Register of Historic Places) at the time the project begins. The term does not convey significance; only that the resource has reached a particular age.

A **historic property** is a historic resource that is listed in or has been determined eligible for listing in the National Register of Historic Places.

Archaeological or Historic Districts

are a geographically definable area, urban or rural, that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history.

The City of Tacoma conducted a series of cultural resources surveys between 1978 and 2004 to identify resources within the City of Tacoma that were potentially historically significant at the time of survey; this information is available in the City's Historic Property Inventory Database (City of Tacoma 2023a). This database contains 48 property records mapped within the study area; these resources relate to industrial and commercial buildings.

Register-Evaluated Historic-Age Built Environment Resources

There are 12 built environment resources that are historic register-listed or have been determined Eligible for listing in the NRHP in the study area. These include bridges, a substation, buildings associated with fire stations, and commercial/industrial development; they were built between 1909 and 1962. These resources are summarized in Table 6-7 and shown in **Exhibit 6-5**. Four of these resources no longer exist within the study area and are therefore not shown in Exhibit 6-5. There are no historic districts within the study area.

Maritime Resources

WISAARD contains six recorded resources associated with maritime activities. These include four submerged resources listed as "unknown wreckage," the Port of Tacoma (built 1918), and Todd SeaTac Shipyard (built 1919).

Maritime Washington National Heritage Area

The shores of Commencement Bay are part of the Puget Sound-wide, congressionally approved Maritime Washington National Heritage Area, which is coordinated by the Washington Trust for Historic Preservation. A National Heritage Area designation does not impose regulatory controls. In preparation for this designation, DAHP commissioned a Maritime Resources Survey for Washington's Saltwater Shores (Artifacts Consulting 2011). This survey identified the areas and properties within the study area that could contribute to interpreting this National Heritage Area.



SOURCES: Prepared by ESA 2024; Puyallup Tribe Survey Boundary from U.S. Surveyor General 1873

EXHIBIT 6-5 Historic Register-Listed or Determined Eligible Properties within the Study Area

6.2 Potential Impacts

All of the EIS development alternatives could change the policies that manage and protect cultural resources within study area. A specific policy change typically does not have an impact on known and unknown cultural resources because the regulatory framework that guides the cultural resource management review process is implemented on a project-by-project or permit-by-permit basis, and any of the outcomes from the change in the policy typically still go through the existing review process.

None of the EIS alternatives would directly impact cultural resources. The impact analysis in this section focuses on the potential indirect impacts of proposed policy changes and the potential cumulative impacts of these policy changes on cultural resources.

6.2.1 Methodology

Potential impacts were identified through comparison of existing cultural resources and the proposed 13 characteristics of each alternative such as Employment Growth, Land Area in Transition Category, and Fish and Wildlife Habitat Restoration (Chapter 2). Alternative characteristics that could involve ground disturbance, a change in land use, new construction, or restoration work have the potential to encounter previously recorded or unrecorded archaeological sites, as well as historic resources. If an archaeological site is encountered during construction, then it is at a greater risk of being damaged or destroyed. A characteristic that changes the land use of an area has the potential to impact cultural resources through the change in setting of the area. These changes could include demolition, redevelopment, changes to the viewshed, restoration, and increased public access that can expose cultural resources to looting or vandalism.

6.2.2 Significance Criteria/Thresholds of Significance

Cultural resources are non-renewable resources, and any impact has the potential to be a significant impact. For this analysis, actions that could result in potential significant impacts on cultural resources are those that could meet the definition of an adverse effect as established for the NRHP (36 CFR 800.5). Using this threshold, an impact becomes significant when it alters, directly or indirectly, any characteristics of a cultural resource that qualify the resource for

inclusion in the NRHP or WHR in a manner that would diminish the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association (National Park Service 1997). Significant impacts are reasonably foreseeable outcomes from the proposed policy change and may result from the cumulative effect of the adopted policy.

6.2.3 Impacts Common to All Alternatives

Potential impacts on cultural resources could occur due to the increased development and continued use that is expected to happen under any of the alternatives. The study area is an active industrial area owned by a variety of private and public entities that will continue to operate and adapt their operations based on future conditions. As this occurs, cultural resources could be impacted either by the demolition of the buildings or structures within the study area, the ground disturbance associated with these activities and ongoing operations and maintenance of existing facilities, or the change in character of the study area. This type of change has the potential to impact potential historic districts as a change could involve the demolition of contributing buildings or structures to a potential historic district or if development occurs that is inconsistent with the potential historic district. Even if these projects undergo a cultural resource review on a project-by-project or permit-by-permit basis, cultural resources in the study area, in particular potential future historic districts, could be impacted due to the limited consideration of each project or permit of the cumulative impacts on surrounding cultural resources. Currently, there are no designated historic districts specifically within the study area according to the Tacoma Historic Preservation Plan (City of Tacoma 2011).

6.2.4 Alternative 1 No Action Alternative

The No Action Alternative serves as a baseline condition for comparison with the other alternatives and describes impacts if the Tacoma Tideflats Subarea Plan does not proceed. Existing site conditions would continue, and future growth would occur under the policies and regulations currently in place.

Impacts on cultural resources under the No Action Alternative would be addressed on a project-by-project or permit-by-permit basis. A Planned Action is not proposed with Alternative 1. As discussed in the previous section, when impacts on individual cultural resources are assessed at the single project or permit level, it creates a circumstance

in which a potential archaeological or historic district, could be slightly degraded by each project or permit, thus reducing the integrity of setting and feeling typically needed for identifying historic districts. The impact related to each project or permit could be slight enough that the project or permit still moves forward but the cumulative impact on the cultural landscape still occurs.

6.2.5 Alternative 2

Under Alternative 2, actions would be taken to address the 13 characteristics of the alternative.

Many of the 13 characteristics that make up Alternative 2 would have no potential impact on cultural resources. Characteristics that involve transitioning some area from heavy industrial to light industrial, increasing density, and addressing sea-level rise through adaptation measure would not change the character of the study area, and any impacts that could occur would be addressed on a project-by-project or permit-by-permit basis. As a result of the Planned Action, not all projects will necessitate a full SEPA project review; however, all projects seeking approval under the Planned Action will submit a SEPA checklist and mitigation measures would be required. The City can ensure that cultural review procedures are included in the Planned Action Ordinance to fulfill the City's Historic Preservation Plan, an element of the Comprehensive Plan, as well as the Tideflats Subarea Plan that is proposed with all action alternatives, including Alternative 2. Existing City code could provide a cultural resources review through its permit regulatory process, and the Planned Action Ordinance would assume all City codes are enforced.

Three characteristics describe policies that could indirectly impact cultural resources: Land Area in Industrial Zoning Classification, Fish and Wildlife Habitat Restoration, and Shoreline Access and Restoration.

Land Area in Industrial Zoning Classification

The policies established under this characteristic determine how much of the total Tideflats land area is zoned PMI, M-2, M-1, or S-10. Under Alternative 2, some industrial-zoned lands would shift to conservation classification consistent with existing restoration sites, or as new restoration occurs.

A transition from industrial zoned lands to conservation would change the use and character of the area. This type of change has the potential

to impact potential historic districts as a change could involve the demolition of contributing buildings or structures to a historic district or if development occurs that is inconsistent with the potential historic district.

The policy to establish new restoration within the study area also could indirectly impact unrecorded cultural resources. The restoration work could occur near existing archaeological resources, and the associated ground disturbance could inadvertently discover and damage or destroy an archaeological resource. Additional impacts from policies that promote restoration could include vandalism or looting of archaeological or other types of cultural resources due to the increased public access that could occur as part of the restoration work. Potential impacts from increased public access are more likely to occur in association with restoration work that is undertaken above the historic shoreline as precontact-era archaeological resources are more likely to be present above the historic shoreline.

Fish and Wildlife Habitat Restoration

The policies under this characteristic determine the amount of land area restored for fish and wildlife habitat as a result of either mitigation or other restoration efforts. Under Alternative 2, restoration efforts would be coordinated, and mitigation locations are identified in advance of permitting, more shoreline buffer enhancement occurs, and intermittent larger habitat sites established.

As discussed under the Land Area in Industrial Zoning Classification characteristic, the policy restoration work has the potential to impact known and unknown archaeological resources because of the associated ground disturbance and potential increased public access. These impacts are also limited by the location of the historic shoreline, making the restoration work and shoreline buffer enhancements that occur in the Foss Peninsula Transition Area and Core Area unlikely to impact precontact-era archaeological resources.

Shoreline Access and Restoration

This characteristic determines the ability of the general public to see, touch, and enjoy the waters of the state. Under Alternative 2, policies would be implemented to create greater coordination among the public and private sectors, expand access in conjunction with Transition Areas and restoration efforts, and make it a priority to complete the SR 509 Shared Use Path.

The potential impacts on cultural resources that could occur based on these policies are an outcome of increased public access to known and

unknown cultural resources. 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. These impacts are unlikely to occur where public access is expanded below the historic shoreline because no known cultural resources exist there, and unknown cultural resources are unlikely to occur.

6.2.6 Alternative 3

Under Alternative 3, different policies would be implemented to address the 13 characteristics of the alternative.

Six characteristics describe policies that could indirectly impact cultural resources: Industrial Use Concentration, Land Area in Industrial Zoning Classification, Housing, Fish and Wildlife Habitat Restoration, Shoreline Access and Recreation, and Sea Level Rise Adaptation Measures.

Industrial Use Concentration

This characteristic determines the percentage of uses within the Tideflats that are considered industrial versus non-industrial. Under Alternative 3, the policies would allow an increase in the amount of non-industrial uses within the Transition Areas.

The potential impacts on cultural resources could occur when the character of the area changes. Each of these projects could impact cultural resources by slightly changing the setting of the area. The setting of historic resources is often an essential part of the resource's integrity and contributes to its eligibility for listing in the NRHP and WHR. Changes to the current setting that occur in a piecemeal fashion have the potential to impact current historic districts and could degrade the integrity of an area to a point that a currently unrecorded historic district could not be recognized or determined eligible for listing in the NRHP. This impact is common to all alternatives.

Land Area in Industrial Zoning Classification

This characteristic is considered under Alternative 2 but under Alternative 3, more industrial land supply would be converted for restoration, sea level rise adaptation and the Portland Avenue Transition Area would become more traditional Transit Oriented Development (TOD) with industrial use allowance.

The potential impacts on cultural resources from the characteristic under Alternative 3 are similar to those under Alternative 2 but at a larger scale. Alternative 3 emphasizes proactive accommodation and managed retreat. This could result in impacts on cultural resources, both known and unknown, due to “managed” sea level rise. Under Alternative 3, restoration work could occur above the historic shoreline and near recorded precontact-era archaeological sites, and in areas with a high probability of containing unrecorded precontact-era archaeological sites. Previously recorded historic-era cultural resources, including the bridges over the Puyallup River, are also located near the areas where restoration work could occur. Restoration work could impact these NRHP-eligible bridges by changing their setting. In addition, the transition to TOD in the Portland Avenue Transition Area could involve ground disturbance, which has the potential to damage or destroy unrecorded archaeological resources. The increased risk of this occurring in the Portland Avenue Transition Area is due to the presence of recorded archaeological resources in the vicinity and its location above the historic shoreline.

The policies established by this characteristic would also change the character of the areas from heavy industrial to restoration areas or TOD areas. As previously stated, changing the character of an area has the potential to impact unrecorded historic districts.

Housing

This characteristic establishes the degree to which the alternative allows housing. Under Alternative 3, housing is encouraged close to transit and in proximity to downtown Tacoma; housing types would be limited to workforce housing and live-work.

These policies could change the character of the industrial area to a more residential area. As previously established, changing the character of an area has the potential to impact unrecorded historic districts.

Fish and Wildlife Habitat Restoration

This characteristic is considered under Alternative 2, but under Alternative 3 the policies implemented would dedicate an increased amount of land toward accomplishing the goals established by the characteristic. Under Alternative 3, restoration efforts would be coordinated, and mitigation sites would be identified in advance of permitting. Proactive investments in restoration would occur with a focus

on sea level rise adaptation. Alternative 3 proposes the most improved water quality and salmon habitats in the Puyallup River.

The potential indirect impacts on cultural resources under these policies are similar to the impacts discussed for the *Land Area in Industrial Zoning Classification* under Alternative 3. The policy focus on creating more restoration along the Puyallup River could create the potential to damage or destroy archaeological resources due to the amount of ground disturbance that could occur in areas with recorded precontact-era archaeological resources. The restoration could also change the setting of the NRHP-eligible bridges over the Puyallup River.

Shoreline Access and Recreation

This characteristic is considered under Alternative 2, but under Alternative 3 the policies implemented would create the most proactive investment in increasing the ability of the general public to see, touch, and enjoy the waters of the state through a complete system buildout.

The potential indirect impacts on cultural resources would be similar to the impacts discussed for this characteristic under Alternative 2. However, the impact could likely be greater under Alternative 3 because the complete system buildout of the existing shoreline could overlap more with the historic shoreline of Commencement Bay. The area near the historic shoreline has greater potential to contain precontact-era archaeological resources and is near spuyaləpabś place names. This is particularly the case for the shoreline restoration that could occur in the NE Tacoma Transition Area.

Sea Level Rise Adaptation Measures

This characteristic explores different approaches to respond to the same sea level rise scenario of all development alternatives. Under Alternative 3, the policies would emphasize proactive accommodation and managed retreat.

Potential indirect impacts on cultural resources under this characteristic could occur from a policy of managed retreat from sea level rise. All types of cultural resources, both recorded and unrecorded, within the study area could be damaged or destroyed due to sea level rise. The depositional context, integrity of artifacts and features, and access to precontact-era archaeological resources could be impacted by increased flooding and erosion. Historic resources could be damaged or destroyed by flooding events.

6.2.7 Alternative 4

Under Alternative 4, different policies would be implemented to address the 13 characteristics of the alternative.

Two characteristics describe policies that could indirectly impact cultural resources: Housing, and Shoreline Access and Recreation.

Housing

This characteristic is considered under Alternative 3, and similarly under Alternative 4 the policy would be to encourage additional housing near high-capacity transit. This would lead to similar impacts as discussed under this characteristic for Alternative 3.

Shoreline Access and Recreation

This characteristic is considered under Alternatives 2 and 3, and the policies proposed under Alternative 4 are similar. Under Alternative 4, there would be greater coordination and enhancement of shoreline access and passive recreation. The impacts on cultural resources would be similar to those discussed for this characteristic under Alternative 2.

6.3 Avoidance, Minimization, and Mitigation Measures

6.3.1 Project Review

There are no known direct impacts on cultural resources under any of the alternatives. The policies under each alternative would avoid and minimize indirect impacts on cultural resources through cultural resources management review on a project-by-project or permit-by-permit basis. As a result of the Planned Action, not all projects will necessitate a SEPA determination. However, existing City code will continue to provide protection, and the Planned Action Ordinance itself can provide supplementary cultural resources review through its permit regulatory process.

For archaeological resources, a thorough review under the existing regulatory framework would likely avoid, minimize, or mitigate impacts on these resources within the study area. The City of Tacoma could ensure that cultural resources review is thorough 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.
- Reviewing 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 a regional growth center (TMC 13.12.570.A), and Title 19 Shoreline Master Program should be reviewed. Without the adoption of this mitigation measure, the impacts discussed would amount to **significant unavoidable impacts** on cultural resources.

For historic resources, in particular historic districts, impacts that could occur under the alternatives could be avoided or mitigated through continued historic property inventory surveys, eligibility assessments, and completion of inventory forms. This type of work would assist in identifying the resources that could contribute to a potential historic district, allowing an opportunity to identify historic districts before a change in character or setting occurs that could diminish the ability to meet NRHP criteria.

6.3.2 Other Potential Mitigation Measures

While the current regulatory framework offers review authority and will continue to do so, the City can incorporate additional policies in the Subarea Plan or review procedures in the Planned Action Ordinance to bolster cultural resources protection. Another potential mitigation measure would be to develop a Cultural Resources Comprehensive Management Plan. Other potential mitigation measures are described in more detail below.

Planned Action Ordinance Decision Tree

The City could 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:

- Amend the TMC to require an inadvertent discovery plan on all related permits (compliance with RCW 27.53, 27.44).
- Develop a “decision tree” for cultural resources 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 6-6**). Less review could be required on sites already previously surveyed in the last 10 years, or at locations that have no potential to contain cultural resources (i.e., modern construction materials), or where no ground disturbance is proposed. If cultural resources are present or potentially present and ground disturbance is proposed, then a risk assessment and consultation with DAHP and the Tribe would be applied. Conditions for monitoring could be developed. Permits could be conditioned with a mitigation strategy. If archaeological sites are present, the project will need to comply with state law protecting archaeological sites.

The Puyallup Tribe of Indians Cultural Resources Probability Map model could be used in conjunction with the DAHP predictive model as the DAHP predictive model has a published report associated with it (DAHP 2009).

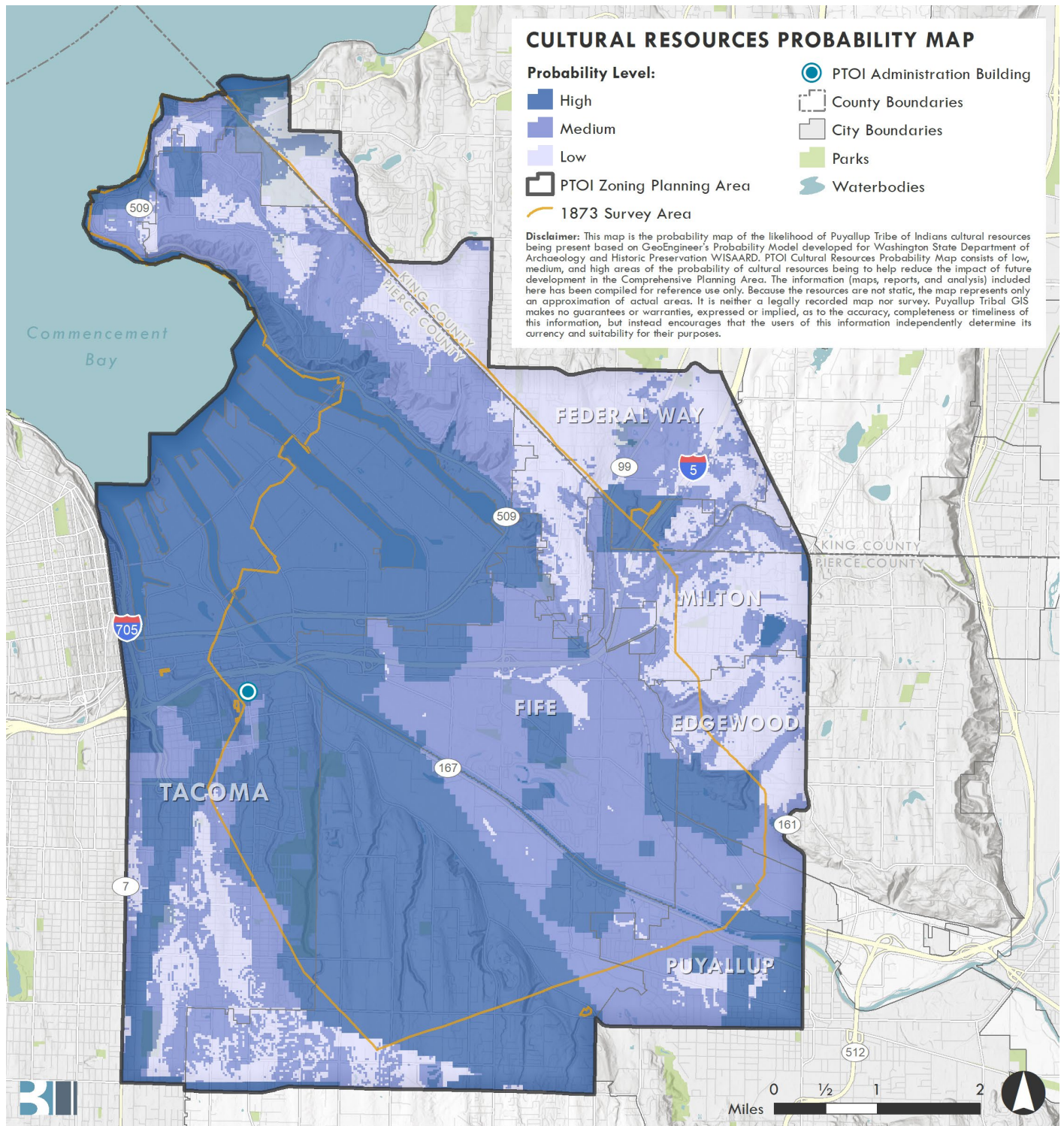
Tideflats Subarea Cultural Resources Comprehensive Management Plan

The Tideflats Subarea could benefit from a comprehensive approach, like a Cultural Resource Management Plan. A comprehensive management plan would be able to incorporate the geology, extensive history, and important to the Tribe.

Support Climate Resilience

Example strategies to protect cultural resources at risk due to exposure to sea level rise include those identified in the Washington Department of Commerce’s Climate Planning Guidance (Commerce 2023), including its menu of measures:

- Protect, enhance, and restore ecosystems to meet tribal treaty rights and conserve culturally important consumptive and nonconsumptive resources such as 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.



SOURCES: Puyallup Tribe of Indians 2023; BERK 2021

EXHIBIT 6-6 Puyallup Tribe of Indians Cultural Resources Probability Map

Cultural and Natural Resources Recognition

The Subarea Plan could include policies that 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 with the Puyallup Tribe of Indians as part of the Shoreline Master Program.
- Develop native landscape standards for public gathering, rights-of-way, and other green spaces.

6.4 Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts on cultural resources under any of the EIS alternatives because the existing federal and state cultural resource regulatory framework continues to provide review on a project-by-project or permit-by-permit basis. If the SEPA review process is maintained for cultural resources (i.e., extending TMC 13.12.570 to the Tacoma Tideflats Subarea), then significant adverse impacts could be avoided through that process. As a result of the Planned Action, a project will not necessitate a SEPA determination, but the City code could be revised to establish a cultural resources review, and supplementary review can be included in the Planned Action Ordinance to implement the Subarea Plan policies and findings of the EIS, making it possible to avoid significant adverse impacts.

CHAPTER 7 Air Quality and Greenhouse Gas Emissions

The affected environment, potential impacts, and mitigation measures for air quality and greenhouse gases (GHG) related to the Tacoma Tidelands Subarea Plan are addressed in this chapter. The potential impacts are identified for the No Action Alternative and development alternatives. A threshold of significance is described, and the alternatives are analyzed to determine potential impacts on air quality and GHG emissions. A section on mitigation measures follows that describes ways to address air quality or GHG impacts.

7.1 Affected Environment

The affected environment section describes the existing environment that may be affected by the Proposed Action. The elements of the air quality and GHG environment used to describe the affected environment include the regulations and regulatory history of the study region, plan documents that influence the Tidelands area, the status of air monitoring, and the status of the region for attaining regulatory standards (i.e., attainment designation).

7.1.1 Regulatory Setting for Air Quality

This section focuses on air quality conditions in the study area in the context of city, county, and regional air quality information and regulations. Air quality in the Tidelands study area is regulated and enforced by federal, tribal, state, and local agencies: U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), the Puyallup Tribe of Indians, and the Puget Sound Clean Air Agency (PSCAA). Each has its own role in regulating air quality within the region.

The City of Tacoma, Puyallup Tribe of Indians, and Port of Tacoma support goals and programs to reduce air emissions within the subarea.

The City of Tacoma has policies within its Comprehensive Plan regarding air pollutants (City of Tacoma 2019a). The Puyallup Tribe of Indians exercises its own air quality program on its lands. The Port of Tacoma, Port of Seattle, Northwest Seaport Alliance (the marine cargo operating partnership of the Port of Seattle and the Port of Tacoma), and the Port of Vancouver, British Columbia have published an existing Northwest Ports Clean Air Strategy (NWPCAS), a voluntary program that supports the alignment of emissions strategies among different Pacific Northwest regional ports of the Salish Sea and are in the process of preparing an updated version (Northwest Seaport Port Alliance 2013).

U.S. Environmental Protection Agency

The 1970 Clean Air Act (last amended in 1990) requires that state and regional planning and air pollution control agencies prepare a regional air quality plan that keeps air pollution concentrations below the ambient standards. These ambient air quality standards (National Ambient Air Quality standards or NAAQS) are intended to protect the public health and welfare, and they specify the concentration of pollutants to which the public can be exposed with minimal adverse health effects. They are designed to protect those segments of the public most susceptible to cardiovascular problems, including asthmatics, the very young, the elderly, and people weak from other illness or disease, as well as people engaged in strenuous work or exercise.

As required by the 1970 Clean Air Act, the EPA initially established health-based ambient air quality standards for six criteria air pollutants. EPA calls these *criteria air pollutants* because they are regulated through specific public health- and welfare-based ambient concentration criteria. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead are the six criteria air pollutants. Since then, subsets of PM have been identified for which permissible ambient levels have been established. These include particulate matter that is less than or equal to 10 microns in aerodynamic diameter (PM₁₀) and particulate matter that is less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}).

Washington State Department of Ecology

Ecology maintains an Air Quality Program with a goal of safeguarding public health and the environment by preventing and reducing air pollution. Washington's main sources of air pollution are motor vehicles, outdoor burning, and wood smoke associated with home heating during fall and winter (Washington State Department of Health 2020). Summertime wildfire smoke also contributes to unhealthy

air. Ecology strives to improve air quality throughout the state by overseeing the development of and conformity with the State Implementation Plan (SIP) (EPA 2023), which is the state’s plan for meeting and maintaining the NAAQS.

Puget Sound Clean Air Agency

The Puget Sound Clean Air Agency (PSCAA) is a special-purpose regional government agency chartered by state law in the 1967 Washington Clean Air Act. It has local authority for setting regulations and permitting of stationary air pollutant sources and construction emissions. PSCAA also maintains and operates a network of ambient air quality monitoring stations throughout its jurisdiction (PSCAA 2024a). There are currently three monitoring station within the City of Tacoma, including one in the Tacoma Tideflats that monitors PM_{2.5}. The other Tacoma stations are located on South L Street (PM_{2.5}) and South 36th Street (PM_{2.5} and NO₂). Refer to **Exhibit 7-1**.

Puyallup Tribe of Indians

The Puyallup Tribe of Indians also has authority for setting air quality regulations for emission sources within its purview and ambient air concentration on its lands. The ambient air quality concentration standards are focused on SO₂. The tribe is also responsible for enforcing the federal standards. The other tribe-specific air quality standards are directed toward curtailing emissions at the source.

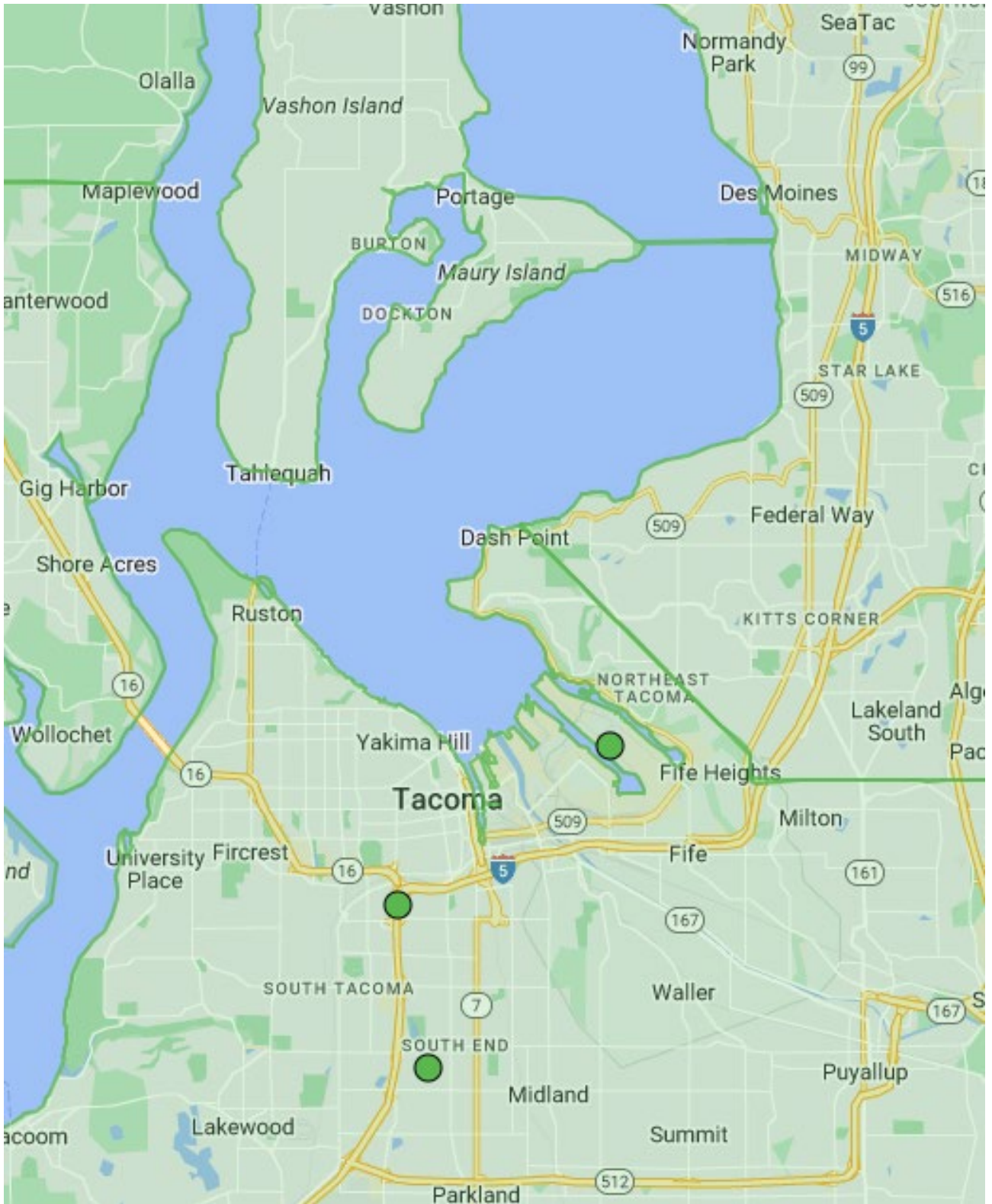
Air Quality Pollutants of Concern

Air quality is affected by pollutants that are generated by both natural and manmade sources. The largest manmade contributors to air pollution are vehicles and power-generating equipment that typically burn fossil fuels. The main criteria pollutants of interest for land use development are CO, PM, ozone, and ozone precursors (volatile organic compounds [VOCs] and oxides of nitrogen [NO_x]). Both federal and state standards regulate these pollutants, along with two other criteria pollutants, SO₂ and lead. However, the Puget Sound region is in attainment and not a maintenance area for ozone, NO₂, lead, or SO₂.

The major sources of lead emissions nationwide have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions, and lead concentrations are not currently monitored in most monitoring sites in the PSCAA jurisdiction (including the Tideflats area).

Air Quality Status

A region’s air quality compliance with the NAAQS is classified by using air monitoring data. The classifications describe whether the air monitor is attaining the standards for specific pollutants (classified as in “**attainment**”). If the region is out of compliance with the NAAQS, the area is said to be in “**nonattainment**.” Upon improving air quality such that the NAAQS design values are being achieved, a region operates under a maintenance plan and can be considered a “**maintenance area**.”



SOURCE: PSCAA 2024a

EXHIBIT 7-1 Map of Current Tacoma Area Air Quality Monitoring Stations Run by PSCAA

Therefore, lead is not further considered in this analysis of criteria air pollutants. On-road vehicles and industry, including petroleum refining, are the largest sources of NO₂. NO₂ is also a component of NO_x, which is a precursor to ozone formation. The nearest NO₂ monitoring station to the study area operated by PSCAA is located in south Tacoma (S 36th Street), and available data indicate that monitored values have been approximately at 40% of the federal standard (PSCAA 2020).

SO₂ is produced by the combustion of sulfur-containing fuels, such as oil, coal, and diesel. Historically, Washington has had levels of SO₂ well below the NAAQS. Because the levels have been low, most monitoring has stopped. SO₂ emissions have dropped over the past 20 years because of major reductions in sulfur emissions from shipping (North American Emission Control Areas implemented fully in 2011), control measures were added for some industrial sources, some larger SO₂ sources shut down, and the sulfur content of gasoline and diesel fuel was cut by nearly 90% (Ecology 2011). The nearest SO₂ monitoring station to the study area operated by PSCAA is located in the Beacon Hill area of Seattle (more than 20 miles to the north), and available data indicate that monitored values have been approximately at 20% of the federal standard (PSCAA 2020).

The largest contributors of pollution related to land development activity are construction equipment, motor vehicles, and off-road construction equipment. The main pollutants emitted from these sources are CO, PM, ozone precursors (VOCs and NO_x), GHGs, and toxic air pollutants (TAPs). Motor vehicles and diesel-powered construction equipment also emit pollutants that contribute to the formation of ground-level ozone. These pollutants are described in more detail below.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas usually formed as the result of the incomplete combustion of hydrocarbon fuels. The largest sources of CO are motor vehicle engines, industrial activity, and wood stoves. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system functions; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. The federal CO standards have not been exceeded in the Puget Sound area for the past 20 years (PSCAA 2014), but the Puget Sound region continues to be in maintenance for CO.

Particulate Matter

Particulate matter (PM) is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. PM that is regulated by the Clean Air Act (and thus have an NAAQS) are subsets of the total PM, and are classified into two groups based on size: particles with an aerodynamic diameter of 2.5 micrometers or smaller ($PM_{2.5}$; fine particles) and particles with an aerodynamic diameter of 10 micrometers or smaller (PM_{10}). Fine particles are emitted directly from a variety of sources, including wood burning (both outside and indoor wood stoves and fireplaces), vehicles, and industry. They also form when gases from some of these same sources react in the atmosphere.

Exposure to particle pollution is linked to a variety of significant health problems, such as increased hospital admissions and emergency department visits for cardiovascular and respiratory problems, including asthma attacks, stroke, fatal and non-fatal heart attacks, and premature death. People most at risk from $PM_{2.5}$ and PM_{10} pollution exposure include those with heart or lung disease (including asthma), older adults, and children. Pregnant women, newborns, and people with certain health conditions, such as obesity or diabetes, also may be more susceptible to PM-related effects.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions that require sunlight, warmer temperatures, and VOCs (also sometimes referred to as reactive organic gases, or ROG) and NO_x ($NO_x = NO + NO_2$). The main sources of VOCs include natural biogenic (plants and trees) emissions, vehicles and industrial processes, and evaporation or drying of coatings, solvents, and paints. The main sources of NO_x are vehicles and industrial processes. Due to the temperature dependence of the emissions and photochemical reactions, the highest ozone concentrations occur in the late afternoon of the warmest summer days, and are found downwind of (and so outside of) the major urban corridors. The relationship between VOC and NO_x emissions (also known as precursors) and ozone concentrations is complicated and nonlinear. This means, for example, that in many situations, reducing NO_x can increase ozone, or reducing VOCs can have no effect on peak ozone concentrations.

Elevated concentrations of ground-level ozone can cause reduced lung function and respiratory irritation and can aggravate asthma. Ozone

has also been linked to immune system impairment. People with respiratory conditions should limit outdoor exertion if ozone levels are elevated. Even healthy individuals may experience respiratory symptoms on a high-ozone day. Ground-level ozone can also damage plants, trees, and agricultural crops. The Puget Sound region is designated as an attainment area for the federal ozone standard.

Ecology currently monitors ozone from May through September because this is the period of concern for elevated ozone levels in the Pacific Northwest. The highest concentrations consistently are found to the south and east of the Seattle-Tacoma corridor in the foothills on the west side of the Cascades. Monitors in North Bend, Issaquah, and Enumclaw typically measure ozone approaching or exceeding the NAAQS a few times each summer. Ozone closer to and in the urban corridor has remained well below the NAAQS. Ozone in the Tideflats area is low and does not approach the NAAQS; no violations of the NAAQS for ozone have occurred at the Tacoma Tideflats monitoring station since monitoring commenced there in 1987.

Toxic Air Pollutants

Other pollutants known to cause cancer or other serious health effects are called toxic air pollutants (air toxics or TAPs). The Clean Air Act identifies 188 air toxics; the EPA later identified 21 of these air toxics as mobile source air toxics (MSATs) and then extracted a subset of seven priority MSATs: benzene, formaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, naphthalene, polycyclic organic matter, and 1,3-butadiene. Exposure to these pollutants for long durations and at sufficient concentrations increases the chances of cancer, damage to the immune system, neurological problems, and reproductive, developmental, respiratory, and other serious health problems.

Diesel particulate matter poses the greatest potential cancer risk (about 80% of the total risk from air toxics) in the Puget Sound area (PSCAA 2023a). This pollution comes from diesel-fueled trucks, cars, buses, construction equipment, rail, marine, and port activities. Particulate matter from wood smoke (a result of burning in wood stoves and fireplaces or outdoor fires) presents the second-highest potential cancer health risk. Wood smoke and auto exhaust also contain formaldehyde, chromium, benzene, 1,3-butadiene, and acrolein. Chromium is also emitted in industrial plating processes. The EPA prioritizes the reductions of these air toxics.

Ecology began monitoring air toxics at the Tacoma Tideflats in 1987. In 2010, PSCAA, in conjunction with the University of Washington, conducted the Tacoma and Seattle Area Air Toxics Evaluation (PSCAA and the University of Washington 2010). The results of this study demonstrate that in addition to having PM_{2.5} concentrations in excess of the standards at the time,¹ residential areas of south Tacoma (at the South L Street monitoring station) have elevated air toxics concentrations and have the highest cancer risk attributed to monitored air toxics if you exclude diesel and wood smoke particulate estimates. With diesel and woodsmoke particulate included, the Tacoma cancer risk is still elevated, but not as high as other regions studied (i.e., Beacon Hill and Duwamish). It is noteworthy that south Tacoma areas have observed higher levels of risk from air toxics compared to other areas, including the industrial centers like the Tacoma Tideflats area.

7.1.2 Regulatory Setting for Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs because, like a greenhouse, they slow the escape of heat radiated from the earth. The accumulation of GHGs is the dominant force in current global climate change. Generally, climate change can be described as the changing of long-term (> 20 years) temperature and weather patterns due to natural fluctuations and anthropogenic activities (i.e., activities relating to, or resulting from the influence of, human beings).

Increases in GHG concentrations in the earth's atmosphere (primarily CO₂) are the primary cause of current climate change. GHGs trap heat by impeding emission of surface infrared radiation into space. This trapping of heat is called a "greenhouse effect." Some GHG emissions occur naturally and are necessary for keeping the earth's surface habitable and for maintaining the ecosystem. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have significantly increased the trapping of heat, which has very likely already caused an average increase in global temperatures of 1.0 degrees Celsius (°C), shifted weather and precipitation patterns, and increased the likelihood and severity of extreme weather events (NASA 2024; United Nations 2024).

Changes to global climate have resulted in the development of a variety of regulations, planning documents, and stakeholder goal

¹ While PM_{2.5} is not classified as a TAP, it may, and often does, include some amount of diesel particulate matter, which is a TAP. Since 2011, neither the L Street monitoring station nor the Tideflats monitoring station have recorded a violation of the federal 24-hour PM_{2.5} standards through 2019, after adjusting for wildfires (PSCAA 2020).

setting focused on reducing GHG emissions. Those regulations pertinent to the Tacoma Tideflats area are described briefly here.

U.S. Environmental Protection Agency

The EPA is taking steps to regulate GHG emissions in a variety of ways. Regulations have been put forward for the transportation, oil and gas, power plants, and high global warming chemical sectors. The transportation regulations establish GHG emissions standards for the 2023–2026 model year vehicles, with a new rulemaking for model years 2027 and beyond expected soon. In early 2023, the EPA adopted the first of three rules governing GHGs from heavy-duty trucks (the so-called Clean Trucks Plan). The first rule is primarily focused on smog and particulate emissions for model years 2027 and beyond, but additional rulemakings will address climate-related emissions.

High global warming potential chemicals include methane and hydrofluorocarbons (HFCs) that are often replacements for ozone-depleting chemicals used in air conditioners, refrigeration, fire suppression, solvents, and others. These compounds are much more potent than CO₂ and, in some cases, many thousands of times more potent. The EPA issued a final rule in 2021 to phase down HFCs by 85% over the next 15 years, and a new proposed rule has been issued to control HFC production and consumption allowances, capped at 40% of the historic baseline.

Washington State Department of Ecology

In December 2010, Ecology adopted Chapter 173-441 WAC – Reporting of Emissions of Greenhouse Gases. This rule institutes mandatory GHG reporting for facilities that emit at least 10,000 metric tons of GHGs per year in Washington; or suppliers of liquid motor vehicle fuel, special fuel, or aircraft fuel that supply products equivalent to at least 10,000 metric tons of CO₂ per year in Washington. This rule was updated in 2022 to include additional entities for reporting and to align the regulation with the Climate Commitment Act.

Washington passed the Climate Commitment Act in 2021 that will help achieve a 95% reduction from 1990 GHG emissions levels by 2050, assist overburdened communities, and begin a cap-and-invest program for carbon in the state. The regulation requires that entities producing over 25,000 metric tons of GHGs per year limit and reduce their emissions over time. Additionally, a Clean Fuel Standard has been implemented to reduce Washington’s largest GHG contributor—

transportation-related GHG emissions. This fuel regulation primarily impacts those who produce or supply fuels in Washington and limits the carbon intensity of the fuels within the state. The clean fuels regulation has the goal of reducing carbon intensity within the state's fuels by 20% below 2017 levels by 2034. Both the Climate Commitment Act and the Clean Fuel Standard went into effect as of January 1, 2023.

The state also passed a zero-emissions vehicle mandate that will require increasing percentages of zero-emissions vehicles within the state fleet starting in 2026, including stipulations on on-highway heavy-duty engine, truck, and trailer sales. Additionally, the state has passed a Clean Energy Transformation Act (CETA) that will require electricity in Washington to be carbon free by 2045.

Puget Sound Clean Air Agency

In 2022, the PSCAA conducted community outreach and engagement to understand the interests of the community as it pertains to air quality and GHGs. The results of that engagement helped to inform their Strategic Plan that was published in 2023. PSCAA has established a goal of reducing GHG emissions by 50% from 1990 levels by 2030, along with the state's targets of a 70% reduction by 2040, and a 95% reduction by 2050. The agency seeks to achieve the goal by accelerating zero-emissions transportation options and infrastructure, identifying funding for electrification of heavy-duty diesel equipment, supporting implementation of the state's climate and transportation policies, and tracking progress toward climate goals.

GHGs of Concern

The principal GHGs of concern are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs) (EPA 2020). Electric utilities, including Tacoma Power, use SF₆ in electric distribution equipment. Each of the principal GHGs has an atmospheric lifetime of greater than 1 year (and up to several thousand years). In addition, the potential heat-trapping ability of each of these gases varies greatly. CH₄ is 25 times as potent as CO₂ over a 100-year average (and about 80 times as potent as CO₂ on a 20-year basis), while SF₆ is 22,800 times more potent than CO₂. Conventionally, GHGs are reported as CO₂ equivalents (CO₂e), which converts their quantities to an equivalent amount of CO₂ so that all emissions can be reported as a single quantity.

The primary human-made processes that release GHGs include the combustion of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release CH₄, such as livestock production and crop residue decomposition; and industrial processes that release smaller amounts of high global warming potential gases such as SF₆, PFCs, and HFCs. Deforestation and land cover conversion also contribute to global warming by reducing the earth's capacity to remove CO₂ from the air and altering the earth's albedo (surface reflectance), thus allowing more solar radiation to be absorbed.

7.1.3 Planning Context

PSCAA Strategic Plan

The PSCAA published its Strategic Plan in early 2023 (PSCAA 2023b). The Strategic Plan defines the agency's overarching goals, specific objectives, and their associated target actions. The objectives include:

- Meet or surpass the health-based NAAQS.
- Measure, analyze, and communicate air quality risk.
- Reduce inequities in air pollution and effectively engage on air quality topics.
- Reduce GHG emissions to reduce the region's contribution to climate change.
- Prevent, reduce, and control emissions and exposure from stationary sources and their regulated activities.
- Reduce harmful woodsmoke emissions and exposure.
- Reduce harmful diesel pollution emissions and exposure.

These objectives provide guidance on how the Subarea Plan can assess its alternatives to understand if, from an air quality perspective, they align with the air quality goals of the broader region.

One Tacoma Environment Goals and Climate Action Plan

Looking more locally, the One Tacoma Comprehensive Plan provides additional goals that can serve as guidelines for the Subarea Plan. The One Tacoma environmental goals pertinent to air quality and GHG emissions include:

- **EN-1:** Ensure that Tacoma's built and natural environments function in complementary ways and are resilient to climate change and natural hazards.
- **EN-2:** Protect people, property, and the environment in areas of natural hazards.

- **EN-3:** Ensure that all Tacomans have access to clean air and water, can experience nature in their daily lives, and benefit from development that is designed to lessen the impacts of natural hazards and environmental contamination and degradation, now and in the future.
- **EN-4:** Achieve the greatest possible gain in environmental health city-wide over the next 25 years through proactive planning, investment, and stewardship.
- **EN-5:** Plan at a watershed scale to restore and protect natural resources that contribute to watershed health.

These City-specific goals align well with those of PSCAA and underscore the interest in providing Tacomans with clean air and climate now and in the future.

Tacoma's Climate Action Plan provides a variety of goals/indicators that will collectively contribute toward emissions reductions, but their focus is on broad topics and does not contain many indicators that are specific to industries that exist in the Manufacturing/Industrial Center (MIC).

The overall 2030 Climate Action Plan targets include the goal of reaching net-zero by 2050, with interim goals of reducing GHG emissions from 1.71 million metric tons of CO₂e in 2020 to 1.14 million metric tons of CO₂e in 2030 (City of Tacoma 2021). The Climate Action Plan provides a list of High Impact actions that should be considered for any new developments within the MIC.

Port of Tacoma Air Quality and Climate Goals

In July 2023, the Port of Tacoma Commission established that the port would phase out GHGs by 2040. This target date represents meeting that decarbonization goal a decade sooner than their prior goal. The emissions associated with such a decarbonization goal only include those emissions directly from port-controlled operations and those from energy use (Scope 1 and Scope 2), but the target does not address Scope 3 emissions. The Scope 3 emissions include those indirectly related to the port's operations (e.g., ocean-going vessel emissions, cargo handling equipment, tugs). However, the Scope 3 emissions are also expected to decline due to efforts at the global, national, and state levels to decarbonize the shipping industry.

In addition to the climate goals, the Port of Tacoma has adopted the Northwest Ports Clean Air Strategy (NWPCAS). As part of this plan, the key goal is to phase out emissions from seaport-related activities by 2050, including air quality emissions such as diesel particulate

matter (DPM), along with GHGs. The plan requires that a wide variety of activities and metrics be tracked and reported. The NWPCAS has been in place for many years and has demonstrated that the emissions reduction targets can be achieved.

7.1.4 Sensitive Receptors

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 the following: the elderly and the young; population subgroups with higher rates of respiratory disease, such as asthma and chronic obstructive pulmonary disease; and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. Sensitive receptors include children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities. 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 are few sensitive receptors within the Tideflats study area. There are a few isolated residential uses within the subarea, including a detention center. The closest sensitive receptors outside of the MIC include residential uses northeast of Marine View Drive, west of I-705, south of I-5, and potentially live-aboard vessels in the marinas.

7.2 Current Conditions

7.2.1 Atmospheric Environment

Pierce County is in the Puget Sound lowland. Buffered by the Olympic and Cascade mountain ranges and Puget Sound, the Puget Sound lowland has a relatively mild, marine climate with cool summers and mild, wet, and cloudy winters.

The prevailing wind direction in the summer is from the north or northwest. The average wind speed is less than 10 miles per hour (Weather Spark 2023). Persistent high-pressure cells often dominate summer weather and create stagnant air conditions. This weather

pattern sometimes contributes to the formation of *photochemical smog*² and can contribute to a mixing of odors from the region's industrial and natural processes. During the wet winter season, the prevailing wind direction is from the south or southwest.

Most of the year, wind is sufficient to disperse air pollutants released into the atmosphere. In Pierce County, the worst, non-wildfire produced quality is due to residential wood burning and usually occurs in the late fall and winter, under conditions of clear skies, light wind, and a sharp temperature inversion. Temperature inversions occur when cold air is trapped under warm air, thereby preventing vertical mixing in the atmosphere. These can last several days. If poor dispersion persists and PM concentrations are forecast to exceed the NAAQS for more than 24 hours, the PSCAA can declare an "air pollution episode" and issue a residential wood burning restriction in one of two stages.

7.2.2 Air Quality

The Clean Air Act established National Ambient Air Quality Standards (NAAQS), with primary and secondary standards, to protect the public health and welfare from air pollution.³ Areas of the United States that do not meet the NAAQS for any pollutant are designated by the EPA as *nonattainment areas*. Areas that were once designated nonattainment but are now achieving the NAAQS are termed *maintenance areas*. Areas with air pollution levels that meet the NAAQS or are cleaner are termed *attainment areas*. In nonattainment areas, states must develop plans to reduce emissions and bring the area back into attainment of the NAAQS.

An area remains a nonattainment area for that pollutant until it is redesignated by the EPA. A state can only apply for redesignation once: (1) its design value (the specific pollution metric) is less than the NAAQS, (2) it has an actionable implementation plan (a SIP), (3) it has an approved 10-year maintenance plan (the first of two), and (4) several other statutory requirements are met. Once it has been redesignated, it will be a "maintenance area" until completing the second 10-year maintenance plan.

Table 7-1 identifies the primary NAAQS for the seven criteria pollutants. Ecology, PSCAA, and the Puyallup Tribe of Indians have

² Photochemical smog is a mixture of pollutants that are formed when nitrogen oxides and VOCs react to sunlight, creating a brown haze above cities. It tends to occur more often in summer, because that is when we have the most sunlight. In general, smog is not an issue in the Tideflats Subarea.

³ The primary standards are designed to protect the health of "sensitive" populations such as asthmatics, children, and the elderly. The secondary standards are concerned with protecting the environment.

authority to adopt more stringent standards, although many of the state and local standards are equivalent to the federal mandate.

TABLE 7-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Federal Standard	State of Washington Standard	Puyallup Tribe Standard	Form of the Standard
Ozone (O ₃)	1-hour			0.12 ppm	(2)
	8-hour	0.070 ppm	0.070 ppm		(1)
Carbon monoxide (CO)	1-hour	35 ppm	35 ppm	35 ppm	(2)
	8-hour	9 ppm	9 ppm	9 ppm	(2)
Nitrogen dioxide (NO ₂)	1-hour	0.100 ppm	0.100 ppm		(3)
	Annual	0.053 ppm	0.053 ppm	0.053 ppm	(4)
Sulfur dioxide (SO ₂)	5-minute			1.0 ppm	(11)
	1-hour	0.075 ppm ⁽⁵⁾	0.075 ppm ⁽⁵⁾	0.075 ppm ⁽⁵⁾ 0.4 ppm ⁽¹⁰⁾ 0.25 ppm ⁽¹²⁾	See Standard
	3-hour	0.5 ppm	0.5 ppm	0.5 ppm	(2)
	24-hour		0.14 ppm ⁽²⁾	0.10 ppm ⁽¹⁰⁾	(2)
	30-day			0.04 ppm	(10)
	Annual		0.02 ppm ⁽⁶⁾	0.02 ppm ⁽¹⁰⁾	See Standard
Particulate matter (PM ₁₀)	24-hour	150 µg/m ³	150 µg/m ³	150 µg/m ³	(7)
	Annual			50 µg/m ³	(7)
Fine particulate matter (PM _{2.5})	24-hour	35 µg/m ³	35 µg/m ³		(8)
	Annual	12 µg/m ³	12 µg/m ³		(9)
Lead	Rolling 3-month average	0.15 µg/m ³	0.15 µg/m ³	1.5 µg/m ³	(10)

SOURCE: 40 CFR part 50, Washington Administrative Code (WAC) 173-476-900, Puyallup Tribal Codes 10.12.520–10.12.580

NOTES: ppm = parts per million; µg/m³ = micrograms per cubic meter.

1. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
2. Not to be exceeded more than once per year.
3. 98th percentile of 1-hour daily maximum concentrations averaged over 3 years.
4. Annual mean.
5. 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
6. Not to be exceeded in a calendar year.
7. Not to be exceeded more than once per year, averaged over 3 years.
8. 98th percentile, averaged over 3 years.
9. Annual mean, averaged over 3 years.
10. Not to be exceeded.
11. Once in any 8 consecutive hours.
12. Twice in any 7 consecutive days.

In the Puget Sound airshed, the primary criteria air pollutants that have historically been of concern are CO, ozone, PM₁₀, and PM_{2.5}. Although urban portions of the Puget Sound region have historically violated the CO standard, CO levels have decreased significantly, primarily due to emissions controls on car engines. EPA designated the Puget Sound region as a CO attainment area in 1996 (PSCAA 2020) and its maintenance period expired in October of 2016 (EPA 1996a).

With respect to the County's status relative to monitored concentration trends of ozone, Pierce County currently meets the federal 8-hour standard for ozone. Like CO, the region was redesignated as attaining the ozone NAAQS in 1996 and the corresponding maintenance period expired in 2016 (EPA 1996b).

The Tideflats area was designated as nonattainment for PM₁₀ at the time the 1990 Clean Air Act Amendments were enacted (EPA 2001). In 1999, the region had demonstrated attainment with the PM₁₀ NAAQS, and the EPA approved the maintenance plan in 2001. The maintenance plan ended its 20-year period in May 2021.

The Tacoma-Pierce County area was designated as nonattainment for the 24-hour PM_{2.5} NAAQS in 2009 (EPA 2015). As part of this designation, the area was required to adopt attainment planning requirements. However, 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 focus on reducing residential wood smoke. The region's maintenance plans identified wood smoke as a primary driver to the elevated concentrations of PM_{2.5} and, historically, PM₁₀ (PSCAA and Ecology 2013; Ecology 2014). 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 with a maintenance plan. The area currently operates under its first 1-year maintenance plan (Ecology 2014) that will expire in March 2025. Ecology and PSCAA will develop a second 10-year maintenance plan accordingly.

In addition to the federal standard, in 1999, the PSCAA Board of Directors adopted a more stringent health goal for 24-hour PM_{2.5} of 25 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), based on recommendations from the PSCAA Particulate Matter Health Committee. Monitors in Pierce, King, Kitsap, and Snohomish counties exceeded the local health goal of 25 $\mu\text{g}/\text{m}^3$ in most winters, and recently during the summer due to wildfire smoke. For example, during winter months in 2019, 22 days

exceeded this target (PSCAA 2020), and in the summers of 2020 and 2022, more than 10 days exceeded the target.

7.2.3 Greenhouse Gases

Like global mean temperatures, U.S. temperatures also warmed during the 20th century and have continued to warm into the 21st century. According to data compiled by the National Oceanic and Atmospheric Administration (NOAA), average annual temperatures for the contiguous United States (or lower 48 states) are now approximately 2.04 degrees Fahrenheit (°F) warmer than at the start of the 20th century, with an increased rate of warming over the past 30 years (EPA 2021). The rate of warming for the entire period of record in the United States (1901–2021) is 0.204°F per decade, while the rate of warming increased to 0.6°F per decade for the period 1979–2021. The last ten 5-year periods were the warmest 5-year periods (i.e., pentads) in the period of record (since 1901), which demonstrates the anomalous warmth of the last 50 years (EPA 2021).

Ecology estimated that in 2018, Washington produced about 100 million metric tons (MMT) (about 106 million U.S. tons) of CO₂e (Ecology 2021). Ecology found that transportation is the largest source, at 45% of the state's GHG emissions, followed by residential, commercial, and industrial energy use at 23%, and electricity consumption (both in-state and out-of-state) at 16%.⁴ The sources of the remaining 15% of emissions are agriculture, waste management, and industrial processes.⁵

7.2.4 Air Toxics

In 2023, PSCAA published updated data on air toxics trends in the Tideflats region. Air toxics within the region are produced from a variety of sources including industry, vehicles, residential wood combustion, and wildfires. The report details the trends of VOCs and aldehydes, wood smoke, diesel PM, and overall air toxics cancer risks. The report also indicates that the primary driver of cancer risk for the Tideflats area is emissions of diesel exhaust, followed by hexavalent chromium and wood smoke. Of note, the diesel exhaust and wood smoke cancer risks were developed based on modeled estimates of

⁴ Transportation sources include on-road vehicles, marine vessels, jet fuel and aviation gasoline, rail operations, and natural gas for transportation. Washington GHG emissions from the transportation sector have been fairly constant for several years, with on-road gasoline continuing to contribute over 50% of transportation sector emissions. Marine vessel emissions include emissions from recreational, commercial, and ocean-going vessels, but exclude marine bunker fuels consumed in international waters.

⁵ The industrial sector includes fugitive GHG emissions that are released during the production, processing, transmission, and distribution of fossil fuels. These emissions are typically fugitive methane due to leakage and venting from natural gas pipelines, and petroleum systems.

concentrations from these source types. Diesel exhaust and wood smoke cannot be directly measured because they are a subset of particulate concentrations. The model was conducted using EPA's Positive Matrix Factorization, which may have considerable uncertainty.

The trend of VOCs and aldehydes cancer risk in the Tideflats area decreased from a risk of 34 in a million in 2010 to 19 in a million in 2021. Similarly, cancer risk due to wood smoke was shown to decrease consistently from the periods of 2006–2011, 2015–2017, and 2018–2022 (major wildfire events not included). Diesel particulate matter has also decreased, which is significant given that diesel PM has been modeled as the largest cancer risk contributor. The annual black carbon concentrations (a surrogate for diesel PM) were roughly $2 \mu\text{g}/\text{m}^3$ during the 2003–2005 period in Pierce County, and the most recent measurements were close to $0.8 \mu\text{g}/\text{m}^3$. These reductions have been realized at a time when the population has also increased considerably (approximately 30%) and vehicle miles traveled have also increased (up by roughly 14%).

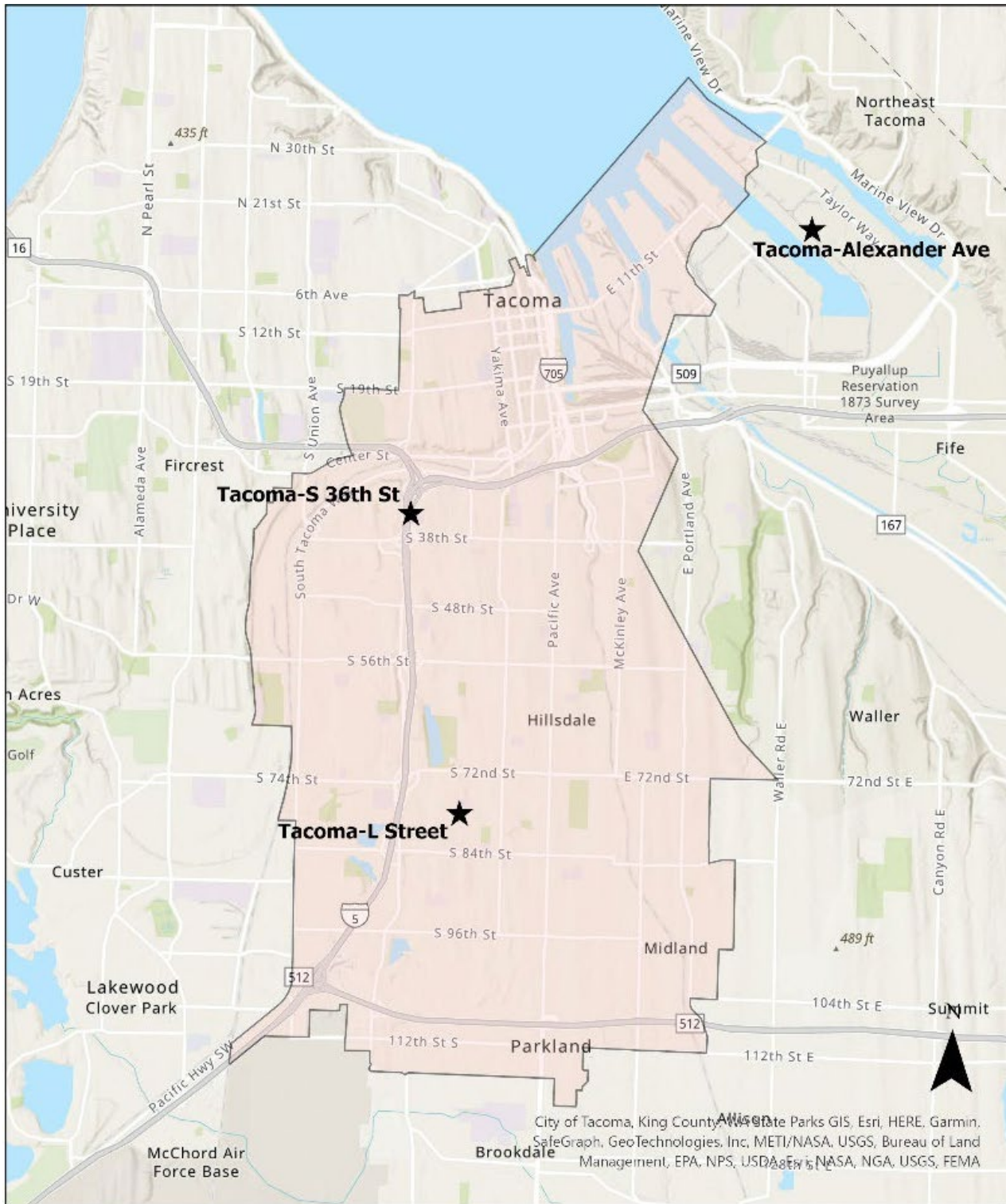
7.2.5 Air Quality Study for Washington Overburdened Communities

In December 2023, the Washington Department of Ecology published a study of air quality in 16 locations in the state including South and East Tacoma (Ecology 2023a, 2023b). See **Exhibit 7-2**. Main pollutants of concern in the study were short-term $\text{PM}_{2.5}$ and cumulative criteria air pollution, addressing levels of $\text{PM}_{2.5}$, O_3 , and NO_2 . Sources of pollutants described in the study include:

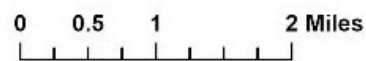
- $\text{PM}_{2.5}$: Dust from construction, commercial cooking, industrial facilities, and residential wood burning.
- NO_2 : On-road mobile sources.
- O_3 : Vehicles and industry.

Excluding wildfire smoke, $\text{PM}_{2.5}$ concentrations were lower than the national air quality standards but sometimes higher than Ecology's healthy air goal.

The report noted the South and East Tacoma community may be at higher risk of health impacts from air pollution, including people of color, low-income, and linguistically isolated populations. The study noted that the community in South and East Tacoma experiences relatively high rates of asthma, death from cardiovascular disease, and lower life expectancy compared to the statewide average.



- Overburdened and Highly Impacted by Air Pollution
- Current Washington Network Air Monitoring Site



SOURCE: Ecology 2023a

EXHIBIT 7-2 South and East Tacoma Community Boundaries and Air Monitoring Sites

7.2.6 Greenhouse Gas Footprint of Washington Overburdened Communities

Greenhouse gas emissions were reported in Ecology’s 2023 study based on six facilities in or nearby South and East Tacoma. The facilities listed in **Table 7-2** emitted a total of 1,345,630 metric tons of CO₂e in 2020 and 1,285,290 metric tons of CO₂e in 2021. However, as of 2023, WestRock CP LLC in Tacoma closed; this facility accounted for 84% of GHG emissions from stationary sources in 2021. In addition, the study estimated 598,636 metric tons of CO₂e from mobile sources, about 4.5 metric tons of CO₂e per capita.

TABLE 7-2 Facilities and Greenhouse Gas Emissions (MT CO₂e) in or near South and East Tacoma

Facility Name and City	Facility Sector	Inside Community Boundary?	CCA Covered Entity?	Major Source of CAPs?	2020 Emissions [biogenic] (MT CO ₂ e)	2021 Emissions [biogenic] (MT CO ₂ e)
City of Tacoma Solid Waste Facility – Tacoma	Waste	Nearby	Exempt	No	11,002 [0]	6,247 [0]
Darling Ingredients Inc. – Tacoma	Food Production	Nearby	No	No	9,953 [0]	10,230 [0]
Georgia Pacific Gypsum LLC – Tacoma	Manufacturing	Nearby	Yes	Yes	38,732 [0]	39,502 [0]
Greif, Tacoma Mill – Tacoma	Pulp and Paper	Yes	No	No	13,941 [0]	14,196 [0]
U.S. Oil & Refining Co. – Tacoma	Petroleum Systems	Nearby	Yes	Yes	163,311 [0]	134,326 [0]
WestRock CP, LLC – Tacoma	Pulp and Paper Kraft Mill	Yes	Yes	Yes	1,108,691 [965,097]	1,080,789 [928,981]

NOTES: CAPs = criteria air pollutants, CCA = Climate Commitment Act, MT CO₂e = metric tons of carbon dioxide equivalent

7.3 Potential Impacts

This section analyzes the air quality impacts that could occur from the adoption of one of the EIS alternatives. The section describes the methods used to determine impacts and defines the thresholds used to determine whether such impacts would or would not be significant and unavoidable.

7.3.1 Thresholds of Significance

The Tacoma Tideflats Subarea Plan has identified key themes to adhere to, which includes maintaining a cleaner place to live, work, and play and to support community health. The significance criteria were developed in support of these themes. The EIS alternatives would

have a significant adverse impact on air quality and GHGs if they would:

1. Conflict with the PSCAA 2030 Strategic Plan’s primary goals (including demonstrating compliance with the NAAQS).
2. Not demonstrate reasonable efforts to meet the PSCAA Strategic Plan’s objectives or obstruct implementation of the Strategic Plan’s actions.
3. Conflict with the One Tacoma and Climate Action Plan environment goals.
4. Propose non-industrial land-uses within close proximity to existing heavy industrial zones.

While the transition away from heavy industrial zoning may have a lower emissions footprint per acre of land, any movement toward non-industrial uses would also increase potential exposures of individuals in the area to heavy industrial emissions. Stepping from heavy industrial to light industrial promotes a potential decrease in emissions per acre, while limiting opportunities for increases in human exposure to heavy industrial air emissions—consistent with the goals of PSCAA and the One Tacoma Comprehensive Plan. From an environmental justice perspective, alternatives with equal or increased heavy industrial uses or considerable increases in vehicular traffic are expected to have harmful impacts on adjacent vulnerable communities.

7.3.2 Alternative 1 – No Action Alternative

Alternative 1 is expected to maintain the current trajectory of heavy industrial activity in the subarea. This trajectory is expected to add 2,000 jobs to the region, the least of all the alternatives and indicating a possibly limiting overall heavy industrial activity. However, the current zoning allows for some housing in the light industrial zones (M1 zones). Such housing would present a potential for exposure to heavy industrial emissions. The Washington Environmental Health Disparities Map indicates that the subarea ranks at the highest risk level for overall disparity—indicating that adding housing to the region under the status quo would result in additional exposure-driven impacts (Washington State Department of Health 2023).

Greenhouse gases would be expected to continue existing patterns, influenced primarily by recent regulations that will move toward reductions. However, this alternative has the least ambitious

decarbonization goal, with a target year of 2050 for achieving decarbonization.

Alternative 1 is expected to result in a **significant unavoidable adverse impact** for air quality/GHG emissions due to non-industrial uses proximate to heavy industrial activities and due to conflict with the PSCAA Strategic Plan target to improve air quality in overburdened communities.

7.3.3 Alternative 2

Alternative 2 deviates from the No Action Alternative through increased jobs, greater restrictions on non-industrial uses in the region, modification of transitional areas to light industrial, adoption of conservation zoning, and no housing growth within the MIC. From the standpoint of air quality exposures, the progression from heavy industrial to light industrial while limiting non-industrial uses helps reduce the subarea's emissions footprint and community exposure. Emissions of air quality criteria pollutants and air toxics would be expected to decline with the transition from heavy industrial uses to light industrial uses and would be well aligned with the PSCAA's Strategic Plan and the One Tacoma goals. GHG emissions could increase, decrease, or remain unchanged depending on the specifics of the processes and activities that change.

An analysis of total annual air toxics emitted per acre by zoning classification was used to provide a quantitative verification that emissions reductions from heavy industrial zones to light industrial zones are expected. Zoning data developed for the Puget Sound Mapping Project (Washington Department of Commerce 2018) were used with Washington air toxics data collected from the EPA AirToxScreen website (EPA 2019). The air toxics data were totaled across the different zoning subcategories and demonstrated that Heavy Industrial zoning was tied to air toxic releases of 135.5 pounds per acre in 2019, and Light Industrial zoning was associated with releases of 117.5 pounds of toxics per acre in 2019.

The transition of certain industrial regions to a conservation classification would promote opportunities for carbon sequestration and may reduce some GHG emissions that would otherwise occur. This alternative would also establish a decarbonization goal that is a decade ahead of the No Action Alternative, with a target of decarbonization by 2040.

In contrast to the No Action Alternative, Alternative 2 is **not expected to result in a significant unavoidable adverse impact** for air quality. The impact due to GHG emissions would depend on the specific industrial users and processes.

7.3.4 Alternative 3

In contrast to Alternative 2, Alternative 3 would increase land for conservation, has an increased allowance for non-industrial uses, Transition Areas become a combination of light industrial and transit-oriented development (near Portland Avenue), and the decarbonization goal is advanced an additional decade to 2030. The growth of conservation areas and the 2030 decarbonization goal both move in a direction consistent with the goals of PSCAA and One Tacoma. However, increasing the non-industrial uses proximate to heavy industrial zones has the potential to cause impacts. This is particularly true of housing that is proposed in such a high disparity region.

Alternative 3 is expected to result in a **significant unavoidable adverse impact** for air quality/GHGs due to non-industrial uses proximate to heavy industrial activities and due to conflict with the PSCAA Strategic Plan target to improve overburdened communities' air quality.

7.3.5 Alternative 4

Alternative 4 presents options that are similar to those found in Alternative 3, but with less specificity (e.g., the decarbonization goal is to “coordinate and accelerate decarbonization implementation strategies and goals”). For air quality, it is assumed that the impacts of Alternative 4 match those of Alternative 3. Alternative 4 is expected to result in a **significant unavoidable adverse impact** for air quality/GHGs due to non-industrial uses proximate to heavy industrial activities and due to conflict with the PSCAA Strategic Plan target to improve overburdened communities' air quality.

7.4 Avoidance, Minimization, and Mitigation Measures

7.4.1 Mitigation Measures Common to All Alternatives

As a plan-level document, the EIS alternatives do not propose any specific physical modifications that would result in direct quantifiable air quality impacts. However, regardless of alternative, specific-projects would undergo their own environmental reviews that include the quantitative specificity to assess the air quality and GHG impacts. A variety of mitigations may be beneficial, including the use of vegetation/tree buffer zones to limit traffic exposures or more stringent filtration requirements than required by law (e.g., Minimum Efficiency Rating Value of 13) to ensure any new residential structures have well filtered air.

For all the alternatives, any steps toward alignment with the Strategic Plan goals of PSCAA or the One Tacoma plan's environmental goals would be related to reduced air quality impacts. In particular, improving the ambient air concentrations beyond existing conditions for those living, working, and recreating in the subarea – an environmental justice concern – would be greatly beneficial. Measures such as requiring health risk analyses for new projects (including housing units) or requirements to use mechanical ventilation systems in any proposed housing would allow for added confidence in the alternatives.

Proposed projects within the subarea should be required to provide a completed Tacoma Climate Action Plan Consistency Checklist. The checklist would identify the GHG-focused High Impact actions items and describe the ways in which the project does or does not align with each item (e.g., see City of Oakland [2021]). If the project is unable to show that it is aligned with the Climate Action Plan via the consistency document, then a GHG reduction plan should be developed to demonstrate alignment with Washington's Climate Commitment Act goals and PSCAA's GHG goals. Such a reduction plan should be developed with the context of construction, initial operations, and horizon operations. This GHG checklist could be integrated into the Planned Action Ordinance.

7.4.2 Other Potential Mitigation Measures

The Comprehensive Plan or Subarea Plan could incorporate policies or strategies addressing air quality concerns for communities abutting or affected by industrial activities. The Planned Action Ordinance could include some strategies as part of a planned action checklist for consistency.

- Community Information and Action:
 - Implement community-based air quality monitoring (CBAQM). Lower-cost air quality sensors could be installed and help identify micro-climates and exposures. It could inform equitable policies, investments, or actions. The City of Tacoma is pilot testing sensors at 10 schools to supplement other air pollution data collected for state-based rules. Two of the 10 schools are near the study area, to the west and south (Georgetown Climate Center 2023; City of Tacoma 2024a).
 - 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. Examples include the Duwamish Valley Action Plan (City of Seattle 2018) and West Oakland Community Action Plan (BAAQMD and West Oakland Environmental Indicator Project 2019).
- Green and Clean Industries: Incentivize industries focused on clean technologies/processes. Consider strategies in Tacoma’s Green Economic Development Strategy (R.M. Donahue Consulting 2023).
- Require new projects that are 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.
- Provide incentives for electrification of combustion activities, use of transportation routes away from residential regions, and installation of electric vehicle (EV) infrastructure.
- Provide environmental complaint contact information along the fence line (e.g., QR codes to connect to the PSCAA complaint site [PSCAA 2024b] or City of Tacoma complaint site [City of Tacoma 2024b]).
- Zero-Emissions Technology: Support zero-emissions technology innovation in the marine, trucking, and rail sector (City of Tacoma 2021).
- Fund clean trucks: Offer more incentives to replace diesel trucks with cleaner engines or zero-emissions engines.

- Reduce road dust: Increase street sweeping along roads and highways to decrease exposure to road dust.
- 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).
- Urban greening to filter pollution: Develop equitable funding strategies to advance Tacoma's Urban Forest Management Plan in overburdened communities (City of Tacoma 2019b).

7.5 Significant Unavoidable Adverse Impacts

The study area is within a highly industrialized zone, the focus of which is economic development. **Impacts on air quality would likely occur under Alternatives 3 and 4**, as they presume increased residential development within the industrial zoned areas that will result in potentially increased residential exposures. It is the degree of development, as measured against the No Action Alternative, and mitigation that varies among the development alternatives. Overall, the impacts of Alternative 2 are expected to provide the least impact on human air quality exposures from both criteria air pollutants and air toxics. The contributions from GHGs are expected to be lowest from Alternative 3 due to the decarbonization goal of 2030 and the potential for carbon sequestration resulting from the development on conservation areas.



CHAPTER 8 Transportation

This chapter presents a multimodal transportation evaluation of the potential impacts of implementing the range of land use alternatives under consideration. This chapter summarizes the existing transportation conditions within the study area and future transportation conditions under four alternatives: the No Action Alternative (Alternative 1), which represents a continuation of the City’s adopted land use plan in the study area, and three development alternatives (Alternatives 2 through 4) reflecting varying increases in the amount of growth forecasted to occur by 2044 resulting from the proposed land use changes. Significant transportation impacts and potential mitigation strategies are identified for the development alternatives based on the policies and recommendations established in local plans and stated thresholds of significance.

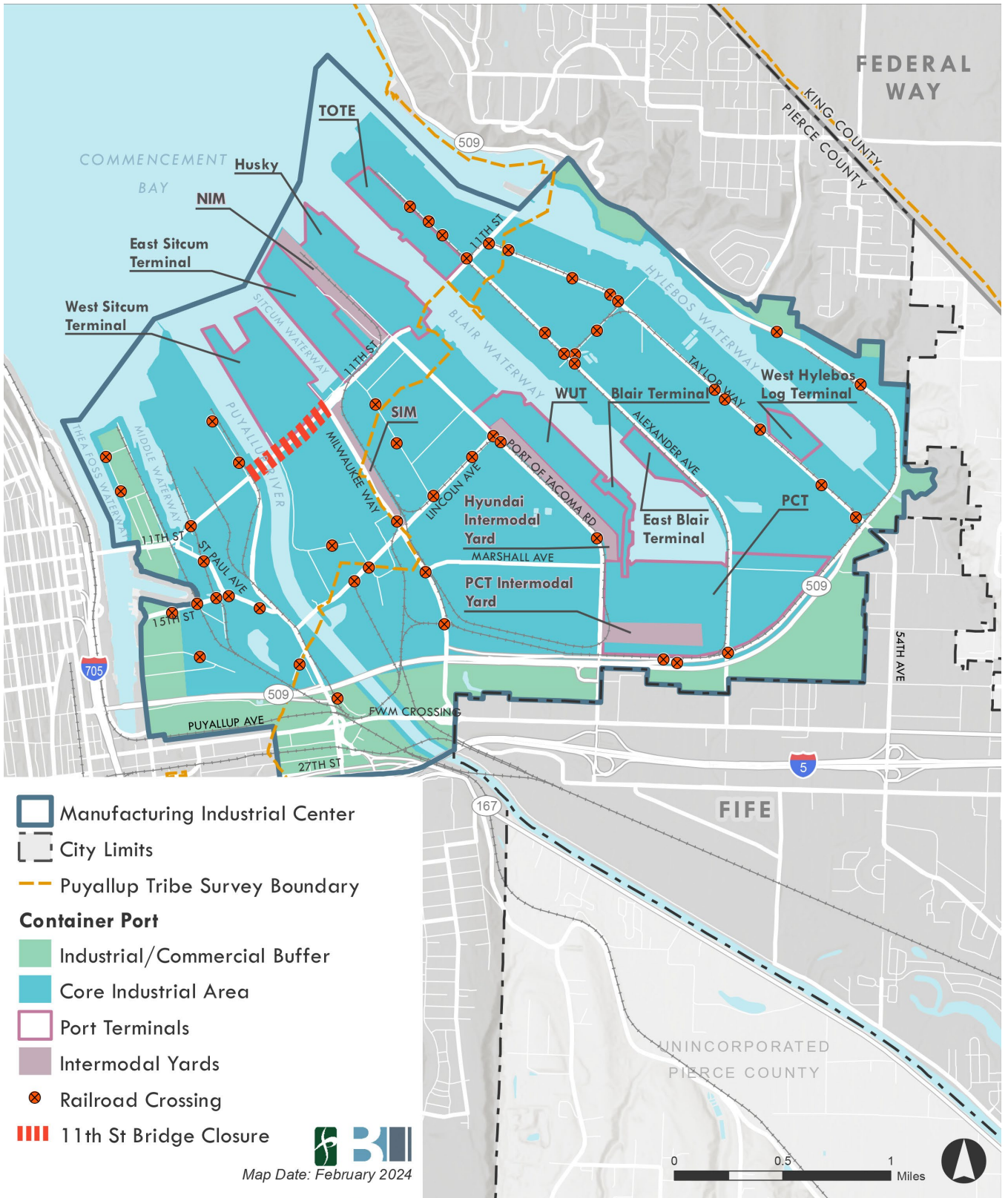
EIS Analysis Years

This EIS considers two distinct time periods for analysis: **2019** as the baseline of existing conditions and **2044** as a horizon year at which the outcomes of the alternatives are compared.

8.1 Affected Environment

This section describes the existing transportation conditions within the study area for all modes as well as the methodologies used to quantitatively evaluate the current performance of the transportation network. This includes the evaluations of autos, freight, transit, people walking and biking, parking, and safety.

The roadway network within the study area is bound by Interstate 705 (I-705) and Dock Street on the west, Interstate 5 (I-5) on the south, State Route (SR) 509 and 54th Avenue East on the east, and Marine View Drive and E 11th Street on the north, as shown in **Exhibit 8-1**. SR 509 runs through the study area, connecting I-705 in downtown Tacoma to northeast Tacoma, also serving as a bypass to SR 99 and I-5. Bridges are an important part of the transportation network,



SOURCE: Fehr & Peers and BERK 2024

EXHIBIT 8-1 Study Area

providing connectivity between peninsulas, as well as to downtown Tacoma and nearby highways across the Puyallup River.

Roadways within the study area primarily serve Port of Tacoma and other freight, manufacturing, and industrial facilities. In addition to their important freight and goods movement role, Pacific Highway E (SR 99), Portland Avenue E, Port of Tacoma Road, SR 509/Marine View Drive, and Puyallup Avenue are key corridors that serve transit, general purpose traffic, and emergency access. Many of the roadways in the study area were developed to primarily serve auto and freight purposes and are consequently challenging for bicycle and pedestrian travel.

Transit facilities within the study area include the Tacoma Dome Station, a regional transportation facility where multiple routes and services converge, including Tacoma Link (T-Line) streetcar, Sounder commuter rail, and local and regional bus service. The Tacoma Dome Station parking garage draws users making connections to transit and is also utilized during events at the Tacoma Dome. Sound Transit's Tacoma Dome Link Extension (TDLE) project is planned to extend the existing light rail system between Federal Way and the Tacoma Dome with three new stations in the Tideflats study area, at 54th Avenue E in Fife, and Portland Avenue E and the Tacoma Dome in Tacoma.

Freight movement is a primary purpose of the transportation system in the study area as the Tideflats area is home to all of the Port of Tacoma's maritime terminals and related freight activity.

The Port owns and maintains facilities related to maritime commerce, including facilities for containerized cargo, automobiles, dry bulk goods such as grain, logs, breakbulk cargo, heavy-lift cargo, and project cargo (a logistical term used to denote transportation and management of uncommonly heavy, oversized or otherwise difficult-to-move items). Port properties also include warehouse/industrial sites, a grain terminal, and two major areas for industrial development. The Northwest Seaport Alliance (NWSA) is a marine cargo operating partnership of the Port of Seattle and Port of Tacoma. Under a port development authority, the NWSA manages the container, breakbulk, auto, and some bulk terminals in Seattle and Tacoma. In addition to the Port's properties, other privately owned facilities include warehouses, distribution centers, and pipelines.

The Tideflats area includes three federal navigation channels including the Blair Waterway, the Hylebos Waterway, and the City Waterway (Thea Foss). These waterways are maintained by the U.S. Army Corps of Engineers. Other waterways in the Tideflats, including the Sitcum

Waterway and the Milwaukee Waterway, also support maritime commerce.

The Tideflats area has a robust rail network connecting port terminals and major industries to the national rail network served by the BNSF Railway and Union Pacific (UP) Railroad. East of the Puyallup River, railcar switching and terminal services are provided by Tacoma Rail, which is part of Tacoma Public Utilities. The Port has three on-dock intermodal rail yards and one near-dock intermodal rail yard where containers are transferred between rail and ship.

The marine and rail terminals in the Tideflats area as well as the many industrial businesses also generate high volumes of truck traffic. The primary access routes include arterials that connect to I-5, SR 509, and SR 167.

8.1.1 Current Conditions

Roadway Network

The Tideflats Subarea is a predominantly vehicle-oriented environment, with a large share of truck freight traveling between the study area and regional roadways as well as along arterials that connect to industrial areas in Fife and beyond.

Exhibit 8-2 shows the functional classification of major roadways in and around the study area. Major roadways in the study area that connect to I-5 and SR 167 include Portland Avenue E, Port of Tacoma Road, and Taylor Way/54th Avenue E, with Milwaukee Avenue and Alexander Avenue E also serving as north–south corridors. While Alexander Avenue E is a public roadway to the south of SR 509, access north of SR 509 is restricted to private use, specifically providing access to the Evergreen and Pierce County Terminals within the Port of Tacoma. Major east–west corridors connecting the study area to I-5, I-705, and downtown Tacoma include SR 509 and Pacific Highway E, which continues east of 54th Avenue E as SR 99. SR 509 also provides a connection between the three study area peninsulas (the Thea Foss Peninsula), General Central Peninsula, and the Blair-Hylebos Peninsula), and Lincoln Avenue connects the two western peninsulas. Key roadways allowing for internal movement of traffic within the Thea Foss Peninsula include Portland Avenue E, E 11th Street and East D Street/E 15th Street; key roadways within the General Central Peninsula (GCP) include Port of Tacoma Road, Milwaukee Way, E 11th Street, and Lincoln Avenue; and key roadways within the



SOURCE: City of Tacoma, City of Fife, Department of Defense 2020; data compiled by Fehr & Peers and BERK 2024

EXHIBIT 8-2 Functional Classification of Roadways for the Study Area

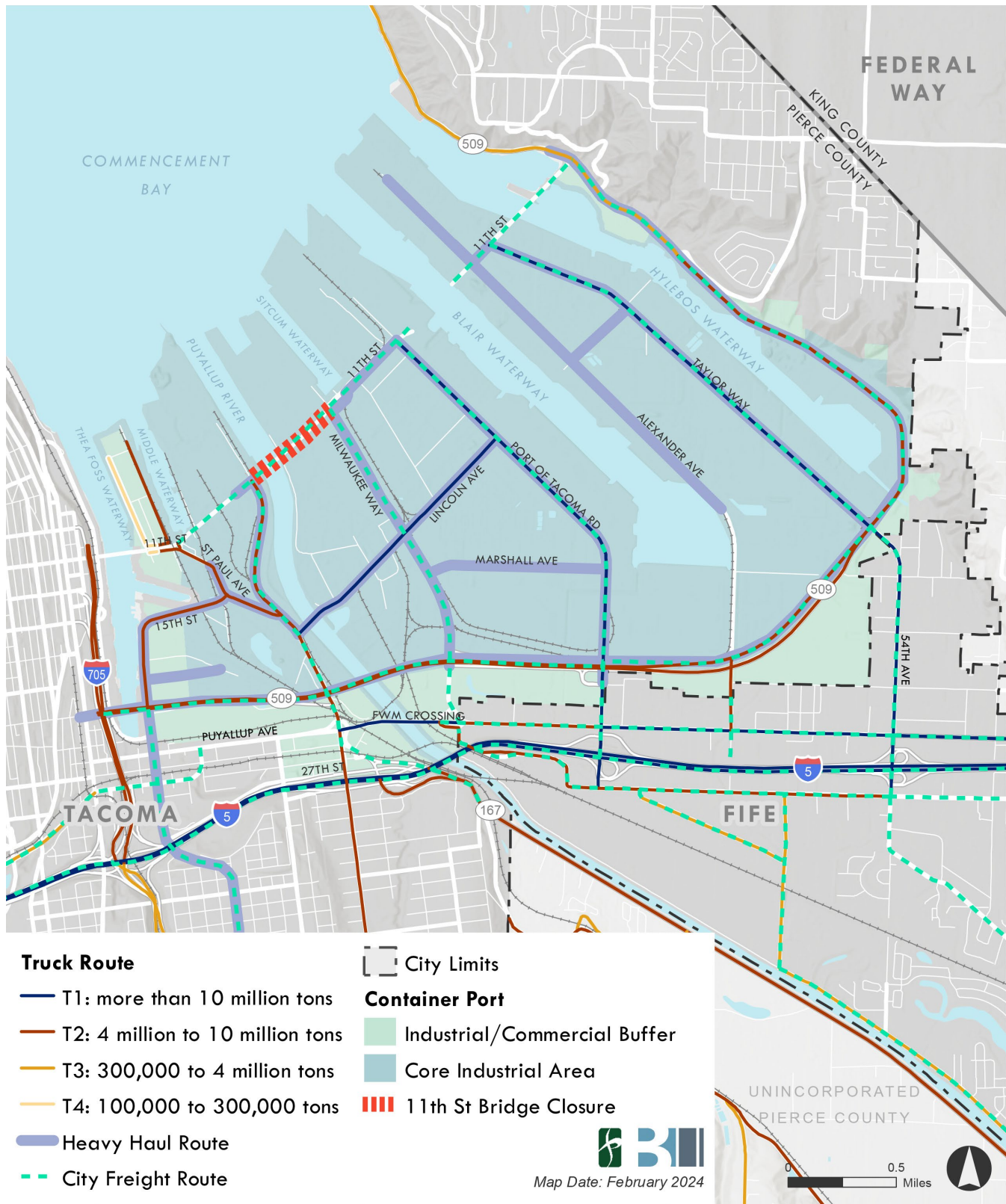
Blair-Hylebos Peninsula include Taylor Way, East 11th Street, and Alexander Avenue E north of the Pierce County Terminal as access is not provided to the south from this point. The exhibit also shows the location of the Department of Defense's (DOD) Power Projection Platform (PPP) routes, which are a subset of the Strategic Highway Network (STRAHNET). The PPP routes are public roadways that are most critical to support the movement of DOD equipment from large military installations, in this case Joint Base Lewis-McChord (JBLM), such that military equipment can be deployed to Strategic Seaports during a national emergency.

Exhibit 8-3 shows the freight corridors within the study area. This includes designations by the cities of Tacoma and Fife as well as the Washington State Department of Transportation's (WSDOT) Freight and Goods Classification System (FGTS; WSDOT 2020b). The FGTS system classifies the state's freight corridors by the amount of annual freight tonnage carried. Lincoln Avenue, Port of Tacoma Road, Taylor Way/54th Avenue E, Pacific Highway E, and I-5 carry more than 10 million tons per year and are therefore classified as T-1 corridors. SR 509, I-705, Portland Avenue E, St. Paul Avenue, East D Street, and River Road E/SR 167 (among others) carry between 4 and 10 million tons per year and are therefore classified as T-2 corridors. Together, these two classifications are considered Strategic Freight Corridors by the Freight Mobility Strategic Investment Board (FMSIB), an important designation that determines FMSIB grant eligibility due to their status as *"transportation corridors of great economic importance within an integrated freight system."*

The City of Tacoma has also designated Heavy Haul Industrial Corridors. These routes are designated for vehicles moving between Transload Facilities and Marine Terminals with freight sealed in an ocean-going container.

Traffic Operations

To evaluate existing traffic operations within and along the regional network serving the Tideflats Subarea, the EIS team relied on current observations of the study area and reviewed previously completed plans and studies. Those studies included the *Tideflats Area Transportation Study* (Port of Tacoma 2011), *Land Use & Transportation Plan* (Port of Tacoma 2014b), and *Tacoma Transportation Master Plan* (City of Tacoma 2015), among other plans and traffic impact analyses. Both the City of Tacoma and City of Fife apply a level of service (LOS) standard of LOS D to intersections within the study area.



SOURCES: City of Tacoma and WSDOT 2020; data compiled by Fehr & Peers and BERK 2024

EXHIBIT 8-3 Freight Corridors within the Study Area

The Tideflats roadway system accommodates a substantial amount of truck traffic. It is generated by a variety of uses, including Port of Tacoma terminals, large warehouses and distribution centers within and around the subarea, and industrial businesses. Based on an origin-destination study completed by the NWSA, Port trucks accounted for between 11 and 28% of the daily vehicle traffic on key roadways within and connecting to the Tideflats Subarea, with the majority of traffic being passenger vehicle or non-Port trucks. On regional roadways connecting to the Tideflats area, the number of Port trucks typically drops to less than 2% of daily traffic, with the exceptions of Pacific Highway E and 70th Avenue E where Port trucks make up roughly 14% of daily traffic.

There is also a temporal aspect to the truck traffic generated by Port of Tacoma terminals. Approximately 12–14% of daily truck trips accessing Port of Tacoma terminals occur during the AM peak hour (8–9 AM), while only 1–4% access the terminals during the PM peak hour (4–5 PM). Most truck trips accessing the terminals are spread throughout the day, reducing their overall effect on the surrounding roadway network during the most congested periods of the day.

The roadways connecting the Tideflats Subarea to I-5—54th Avenue E, Port of Tacoma Road, and Portland Avenue E—experience congestion and queuing leading up to the I-5 interchanges due in large part to the high regional auto and truck volumes and close spacing of intersections. These delay and queuing issues extend north of I-5 along these roadways into the study area. The topography of the area, including multiple peninsulas and the Puyallup River, also contributes to congestion by funneling traffic to a few key corridors. Congestion is especially prevalent on Pacific Highway E between Portland Avenue E and Milwaukee Way, as well as on SR 509 on the eastbound and westbound approaches to Port of Tacoma Road. SR 509 also experiences high delay at the intersection with Alexander Avenue E.

Because there are few over-water connections to the subarea, traffic generated by the Tideflats area has a limited number of access points to the regional network, which limits mobility and resiliency within the subarea. Based on the NWSA's origin-destination study of trucks accessing Port terminals, roughly one-quarter travel via I-5 to the south, one-quarter travel via the 70th Avenue E/Valley Avenue corridor to the southeast, and one-quarter are bound for nearby industrial areas within the study area such as the Thea Foss Peninsula and vicinity of SR 509 and I-5. The remaining trucks are distributed among routes

including Pacific Highway E, I-5 to the north, Portland Avenue E, Pioneer Way, River Road, and SR 167.

In addition to delay along regional roadways accessing the Port of Tacoma, there is traffic congestion within the subarea itself. Congestion within the port area is most pronounced during the AM peak period. This includes, but is not limited to, trucks arriving early to queue up before accessing the terminals, large warehouses, and distribution centers within and around the subarea. These issues are summarized by peninsula, as follows:

- **Thea Foss Peninsula:** The Murray Morgan Bridge connecting downtown Tacoma and the peninsula experiences some delay during the PM peak hour. Additionally, eastbound E 15th Street/E D Street experiences delay extending from approximately SR 509 to St Paul Avenue during the PM peak hour, and the intersection of Lincoln Avenue and Portland Avenue E can be congested during both peak periods.
- **GCP:** Northbound Port of Tacoma Road between Marshall Avenue and E 11th Street can experience high delays during some periods of the day due to terminal accesses along this segment of roadway. For this reason, the Port of Tacoma recently opened “Lot F,” an off-street truck queuing area bounded by Port of Tacoma Road, Maxwell Way, Thorne Road, and E 19th Street, which is designed to serve trucks waiting to enter the Husky Terminal and Washington United Terminals (WUT) and thereby minimize queues on northbound Port of Tacoma Road. This strategy helps to reduce effects on public roadways and creates efficiencies for port operators; however, this requires sufficient space outside the main terminal area and not encumbering the public roadway/right-of-way. Lincoln Avenue experiences congestion between Portland Avenue E and Marc Avenue/Lincoln Avenue Loop, with high signal delay at the intersections at either end during the AM peak hour for the study area. This condition follows a typical commuting pattern with eastbound congestion in the morning as employees are traveling to worksites on the Middle Peninsula and westbound congestion in the afternoon.
- **Blair-Hylebos Peninsula:** Taylor Way experiences congestion between SR 509 and Lincoln Avenue.¹ North of Lincoln Avenue, there can be northbound queuing in the morning at the access to MacMillan-Piper Inc. directly across from the Foss Landing Marina.

In addition to major roadways within the study area, it is important to consider delay on the I-5 and I-705 freeways. While these freeways are critical for local Tideflats access, they serve users throughout the

¹ It should be noted that this is based on conditions prior to the recent reconstruction of Taylor Way at and around SR 509.

Puget Sound area and beyond and are therefore predominantly affected by regional traffic and travel patterns. Frequent bottlenecks on southbound I-5 between I-705 and SR 16 cause congestion along I-5 as well as queues stretching to Portland Avenue E and the ramps to I-705. Another challenging stretch of southbound I-5 occurs between 54th Avenue E and Port of Tacoma Road where high volumes converge from both the on-ramp and the mainline. I-705 generally operates efficiently, with the exception of moderate congestion near the 9th Street and 21st Street ramps during the AM peak hour, as well as the southbound direction between 15th Street and 21st Street in the PM peak hour. Incidents that disrupt traffic flow on these freeways, as well as along SR 509, can limit or completely sever access to the GCP for hours at a time. The Port of Tacoma and the City of Tacoma collaborated on an Intelligent Transportation System (ITS) Strategic Plan that identifies potential improvements to the signals and corridors in the Tideflats Subarea. These improvements could potentially address some of the existing delay and queuing issues presented above. Many of these potential improvements have not yet been implemented and therefore could be revisited as strategies for the Tideflats Subarea Plan to improve traffic operations and safety.

Freight

Port of Tacoma and NWSA Facilities

The Port of Tacoma owns approximately 2,650 acres in the Tideflats Subarea. The marine facilities described below are owned by the Port of Tacoma but managed by the NWSA. Major port facilities in Tacoma include:

- Six deepwater terminals for containerized cargo. **Table 8-1** summarizes transportation characteristics of the Port's container terminals.
- Four deepwater terminals for bulk and breakbulk cargo:
 - Terminal 7 is used for breakbulk and project cargo and as a secondary location for auto discharge. It includes on-dock rail ramps.
 - East Blair One (EB1) Terminal also includes on-dock rail ramps and is used for breakbulk and project cargo.
 - Blair Terminal is used as the main auto offloading location, and it has near-dock rail ramps.
 - West Hylebos Terminal was utilized as a bulk log facility with off-dock rail ramps. It is currently vacant but the Port anticipates redeveloping the site in the near future.

TABLE 8-1 Transportation Characteristics of Container Terminals

Terminal	Acreage	Berths (#)	Cranes (#)	Truck Gate	Rail
West Sitcum (WST)	108	2	8	8 inbound lanes 6 outbound lanes 6 scales	Near-dock access to the South Intermodal Yard.
Husky Terminal (Terminals 3 & 4)	118	2	8	7 inbound lanes 6 inbound scales 4 outbound lanes 1 outbound scale	On-dock access to the North Intermodal Yard.
East Sitcum (EST)	36	1	4	5 inbound lanes 2 outbound lanes 2 scales	On-dock access to the North Intermodal Yard.
Pierce County Terminal (PCT)	189	2	7	10 inbound lanes 6 outbound lanes 6 scales	On-dock access to the Pierce County Intermodal Yard.
Totem Ocean Trailer Express (TOTE)	48	2	Roll on/Roll off operation uses 3 ramps	5 inbound lanes 4 outbound lanes 4 scales	No rail connection.
Washington United Terminals (WUT)	142	2	6	9 inbound lanes with oversized scales; 4 outbound lanes 2 reversible lanes	On-dock access to Ocean Network Express.

SOURCES: NWSA 2020; City of Tacoma 2014a

- **Rail facilities:** The Port is served by a rail system that connects most of its major facilities within the Tideflats area. South of the Port, the local rail system connects to the BNSF and UP railroads, which provide transcontinental rail service. Switching and terminal services are provided by Tacoma Rail, which is a division of Tacoma Public Utilities. Three on-dock intermodal rail yards and one near-dock intermodal rail yard are located in the Port of Tacoma on the lands in the GCP:
 - North Intermodal (NIM) Yard – Provides on-dock access to the Husky Terminal and East Sitcum, with capacity of 76 double-stack cars. Containers can be moved between the terminals and the intermodal yard without leaving Port property or traveling on public right-of-way.
 - Tacoma South Intermodal (SIM) Yard – This 25-acre rail facility is located north of Lincoln Avenue on the General Central Peninsula. It is operated by the Union Pacific Railroad in partnership with the NWSA.

- Hyundai Intermodal Yard – Provides on-dock access to the WUT, with capacity of 52 double-stack cars. The yard is operated by WUT and serves Ocean Network Express (ONE).
- Pierce County Intermodal Yard – Provides on-dock access to the Pierce County Terminal (PCT), with storage capacity of 72 double-stack cars on 12 ramp tracks. The yard is operated by Ports America and serves Evergreen Marine and Italia Marittima.
- In addition to those listed, the Marshall Avenue Auto Facility and the Taylor Way Auto Facility serve both rail and truck carriers. The Marshall Avenue Auto Facility is located at the south end of the GCP. This facility is operated by Auto Warehousing Company (AWC) and serves Port BMW, Kia, Mazda, Mitsubishi, Isuzu, Fuso Trucks, and GM. The Taylor Way Auto Facility is located on the Blair-Hylebos Peninsula close to the EB1 Terminal. The facility is operated by Wallenius Wilhelmsen Solutions.

Terminal Throughput

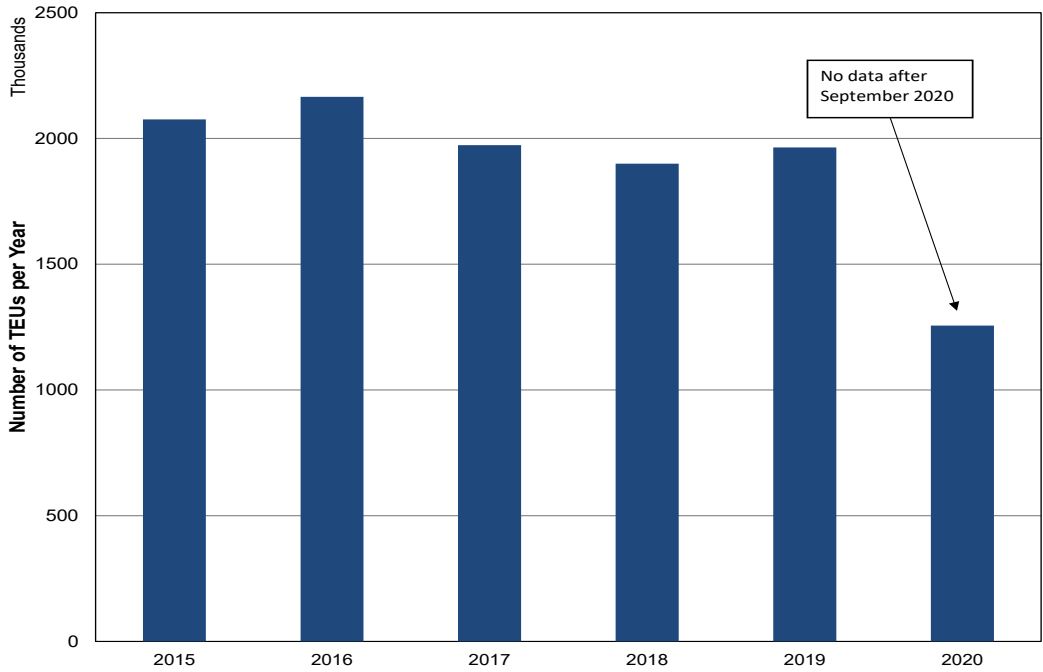
The NWSA tracks terminal and intermodal rail yard throughput.² Data for the 5.75-year-period between January 2015 and September 2020 were compiled to determine historical trends in throughput and intermodal use.³ The NWSA tracks the number of lifts, which reflects a whole container being discharged or set to a ship, as well as the volume of throughput in twenty-foot equivalent units, or TEUs. A standard 40-foot container is equivalent to two TEUs. In recent years, shipments through the Port of Tacoma have averaged 1.80 TEUs per container (Heffron 2018).

Exhibit 8-4 shows the Port of Tacoma’s overall container throughput in TEUs by year. The Port container volumes peaked in 2016 at 2.17 million TEUs per year. In 2019, the throughput was about 1.96 million TEUs per year, very close to the average throughput over the 5.75-year period.

Exhibit 8-5 shows the Port of Tacoma’s overall container throughput in TEUs by month. The figure shows seasonal variations in port throughput throughout the year, with volume peaking typically in September. The average throughput over the 5.75-year period was approximately 164,000 TEUs per month.

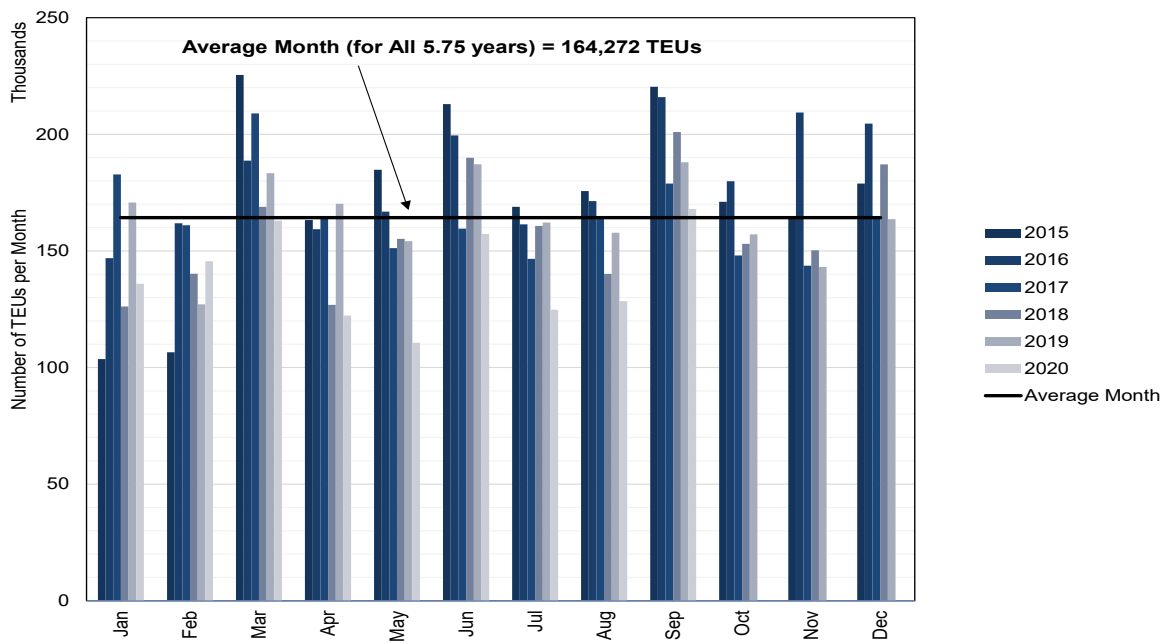
² Volume of container cargo that passes through a terminal.

³ A transfer of cargo from one mode to another. In the shipping business, an “intermodal container” generally refers to one that will be transported from or to a ship by rail. The NIM and SIM yards in Tacoma Tideflats allow the direct transfer of containers between rail and ship using yard equipment or short dray movements by truck.



SOURCE: NWSA 2020; data compiled by Heffron Transportation Inc.

EXHIBIT 8-4 Container Terminal Throughput, 2016–September 2020



SOURCE: NWSA 2020; data compiled by Heffron Transportation Inc.

EXHIBIT 8-5 Seasonal Variations in Port's Throughput, 2016–2020

Intermodal Throughput

As described above, there are four intermodal yards at the Port of Tacoma. There are two near-dock intermodal yards—the NIM and SIM—that are shared by several terminals, and the ONE and PCT Yards that are on-dock yards within those terminals. The percentage of the Port's throughput that is transported to and from the Port by rail (intermodal) has decreased in recent years. In the past decade, intermodal freight has accounted for 50% to 65% of the Port's throughput, with international cargo having higher intermodal rates than domestic cargo. With the decline in international cargo in recent years, intermodal use has decreased to a current rate of about 43% of the Port's throughput. For the purpose of evaluating existing conditions, it was assumed that intermodal use would rebound to 60% of all throughput.

The number of trains generated by the NIM and the SIM was estimated for the peak direction of travel (eastbound). Train estimates for 2017, when intermodal throughput was highest, were used. These were based on detailed estimates provided for the NIM as part of the *Port of Tacoma GCP Uplands Modernization Program Transportation Technical Report* (Heffron 2018). That analysis determined that about 2% of the annual lifts occurred in the average week, and of those about two-thirds (63%) were for eastbound trains. The peak week activity reflected an increase of about 150% above average week conditions. The number of trains would vary depending on the railroad and route. Trains destined over Stevens Pass are typically limited to 7,200 feet, which can accommodate about 530 TEUs; trains through the Columbia Gorge can be up to 9,500 feet, which can accommodate about 720 TEUs.

Based on these metrics, it is estimated that the NIM now generates six to eight trains per week on an average week, and nine to 12 trains per week during the peak week. The SIM is estimated to generate three to four trains on an average week and four to six trains on the peak week. Weekly lift and train estimates are also summarized in **Table 8-2**.

TABLE 8-2 Weekly Trains to NIM and SIM, Existing, 2017

Condition/Period	Lifts per Week			Peak Direction Trains per Week ^a
	Eastbound	Westbound	Total	
NIM^b				
Average Week	2,420	1,410	3,830	6 to 8
Peak Week	3,490	2,310	5,800	9 to 12
SIM				
Average Week	1,100	630	1,730	3 to 4
Peak Week	1,650	950	2,600	4 to 6

a. Range estimated assuming full unit train with 530 TEUs/Train for a 7,200-foot train and 720 TEUs per train for a 9,500-foot unit train. Train lengths assume no engines. Each intermodal lift is assumed to average 1.8 TEUs.
 b. Port of Tacoma, Based on NIM Lifts for 2017. Reported in the *Port of Tacoma GCP Uplands Modernization Program Transportation Technical Report* (Heffron 2018).

Terminal Truck Trips

The number of truck trips generated by the Port terminals was derived using factors developed from prior studies. The following assumptions were used to estimate truck trips:

- **Average day** assumes there are 260 working days per year, which includes some weekends or holidays.
- **Design day** volumes are 40% higher than average day conditions and reflect the 85th-percentile condition for throughput at a terminal’s gates.
- Trucks are generated for non-intermodal containers, which represent 40% of the terminal throughput.
- Average container size is 1.8 TEUs.
- Truck trips per non-intermodal lift = 1.87. This accounts for truck gate moves that involved a dual transaction (trucks that drop off one container and pick up a second during the same trip through the terminal). The trip rate also accounts for moves through the gate that may not involve a lift to or from the ship, which can occur for empty container repositioning, container repair, or additional inspection.
- AM peak hour trips represent 12% of daily trips, and PM peak hour trips represent 3% of daily trips of the surrounding roadway network.

Assuming an average annual throughput of about two million TEUs and 60% intermodal, it is estimated that the collective Port terminals generate about 3,200 truck trips (1,600 enter and 1,600 exit) on an

average day, with about 4,480 truck trips (2,240 enter and 2,240 exit) on the design day. These design day trips exactly match the 85th-percentile truck trips for the first 9 months of 2020 that the Port now collects using radio-frequency identification (RFID) tags.

Railroad Classes

In the United States, railroads are designated as Class I, Class II, or Class III based on revenue benchmarks established by the Surface Transportation Board. Class I railroads have an average revenue greater than \$943 million per year based on thresholds adjusted for inflation in 2021.

Rail

Two Class I railroads serve the study area: the BNSF Railway and the UP Railroad. However, east of the Puyallup River, local switching is performed by Tacoma Rail, a division of Tacoma Public Utilities. Tacoma Rail's service area extends from the Port of Tacoma to South Tacoma and the Lakewood Industrial Park. The Tideland division of Tacoma Rail serves all four intermodal yards at the Port of Tacoma:

- North Intermodal Yard (NIM)
- Tacoma South Intermodal Yard (SIM)
- Pierce County Terminal (PCT)
- Washington United Terminal (WUT)

In addition, the BNSF's Tacoma Yard is located north of Puyallup Avenue on the Thea Foss Peninsula. Rail is also the primary transportation mode to the US Oil facility on the General Central Peninsula.

Rail service is also provided to the Port's breakbulk facilities and about 40 industrial clients, handling commodities such as automobiles, food, forest and building products, metals, minerals, and petroleum products.

Although all of the major rail line connections are grade-separated from major highways (such as SR 99, SR 509, and I-5), there are many at-grade crossings where the railroad tracks cross local arterials or access roads. At-grade rail crossings are shown on **Exhibit 8-6**. These have been separated into "Major Crossings," which for the purpose of this study are defined as high-volume crossings of an arterial or major port access route, and "Minor Crossings" that may serve individual business sidings or cross local street.

Transit

The study area is served by both Pierce Transit and Sound Transit, providing a mix of bus, light rail, and Sounder commuter rail service (see **Exhibit 8-7**). Transit routes are primarily located in the southwest and west parts of the study area including Tacoma Dome Station, and the Pacific Avenue and Commerce Street corridors in downtown.

Table 8-3 lists the transit routes in the study area.



SOURCE: Fehr & Peers, Heffron Transportation, and BERK 2024

EXHIBIT 8-6 Rail Crossings within the Tideflats Subarea



SOURCES: Pierce Transit and Sound Transit 2020; data compiled by Fehr & Peers and BERK 2024

EXHIBIT 8-7 Existing Transit Network, 2020

TABLE 8-3 Transit Service in the Study Area

Agency	Route Number	Destination	Peak Frequency
Pierce Transit	1	6 th Ave – Pacific Ave	30 minutes
	2	S 19 th St – Bridgeport	30 minutes
	3	Lakewood – Tacoma	30 minutes
	11	Point Defiance	60 minutes
	13	N 30 th St	60 minutes
	16	North End	30 minutes
	28	S 12 th St	30 minutes
	41	S 56 th – Salishan	30 minutes
	42	McKinley Ave	30 minutes
	45	Yakima	30 minutes
	48	Sheridan – M St	30 minutes
	57	Union – S 19 th St – Hilltop	30 minutes
	63	NE Tacoma Express	2 daily trips
	400	Puyallup – Downtown Tacoma	30 minutes
	500	Federal Way	60 minutes
	501	Milton – Federal Way	60 minutes
Sound Transit	590	Tacoma – Seattle	20 minutes
	594	Lakewood – Seattle	30 minutes
	T-Line	Tacoma Dome Station – St Joseph	12 minutes
	Sounder	Seattle – Lakewood	20 minutes

SOURCES: Pierce Transit 2023; Sound Transit 2023

The Tacoma Dome Station is a transit hub where Sound Transit Express, Pierce Transit, T-Line, and Sounder services converge, allowing users opportunities to transfer between services and make local or regional connections. Many of these same services are present on Pacific Avenue and Commerce Street, although not all share the same stops.

Making a connection between the Port of Tacoma area and transit can be challenging because the study area’s industrial core is not directly served by transit. To access the Port of Tacoma area from the Tacoma Dome Station, transit users can take either D Street or Portland Avenue, and would need to walk 0.4–1.2 miles from the station before reaching the most southerly uses within the port area. From downtown

Tacoma, transit users can access the Tideflats area via the E 11th Street/Murray Morgan Bridge, about a 0.5-mile walk from Pacific Avenue to the E 11th Street & St. Paul Avenue intersection. From these key access points, users need to walk, bike, carpool, or use rideshare to travel within the Tideflats area.

Planning is currently underway for the Sound Transit TDLE project, which will provide a light rail connection between the Tacoma Dome Station and Federal Way. Two new stations in the Tideflats Subarea are proposed: at E Portland Avenue (Tacoma Station) and at 54th Avenue E (Fife Station).

Active Transportation

The City of Tacoma is focused on providing mobility for all who travel, including active transportation users (people who walk, bicycle, or roll). To evaluate how the alternatives would change travel for those users, the existing bicycle and pedestrian networks were evaluated.

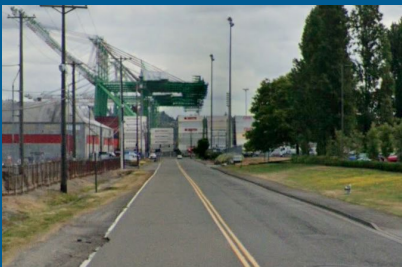
Pedestrian Network

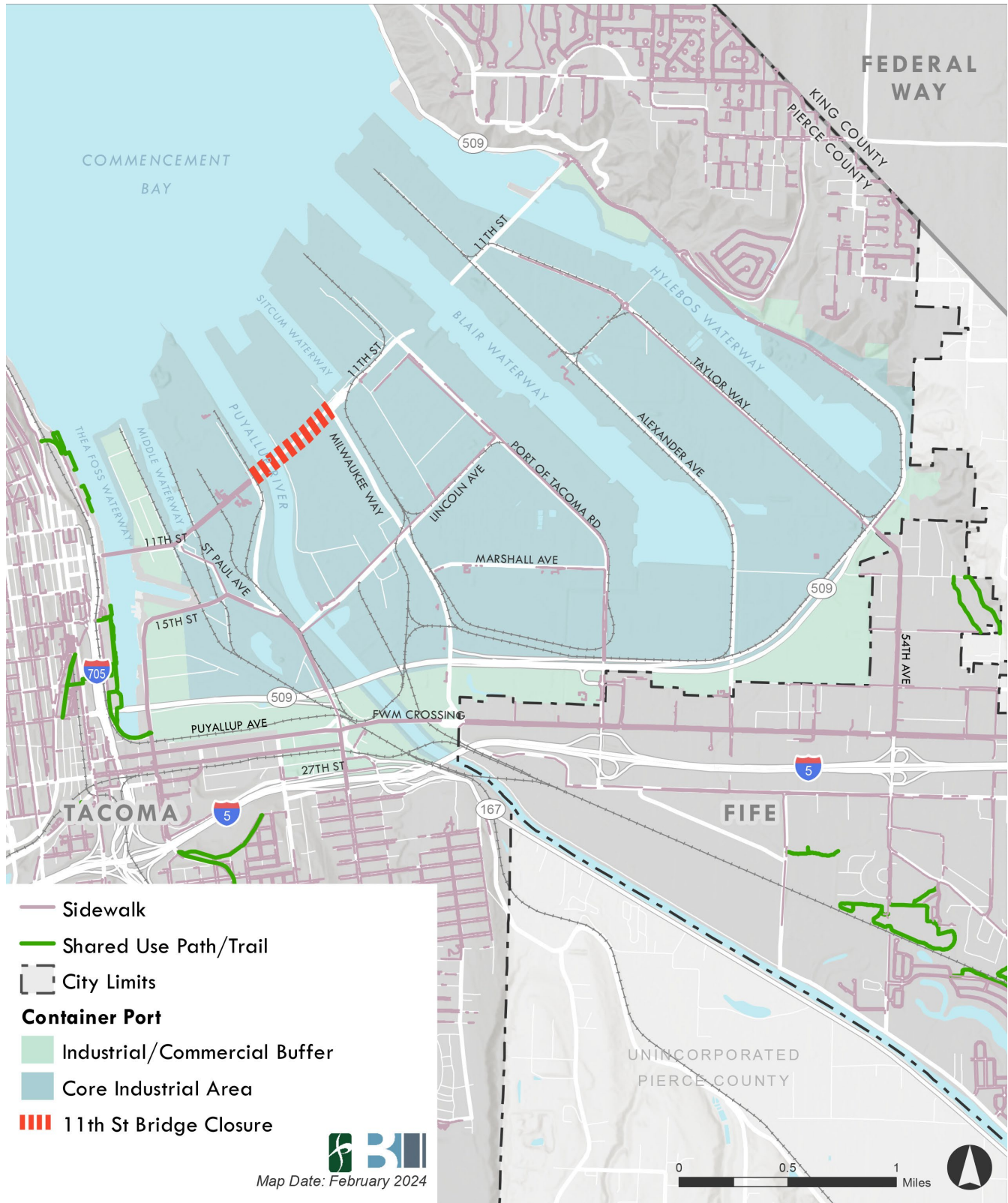
Major roadways within the study area generally have sidewalks on at least one side of the street outside of the Core Area. However, some of the sidewalks do not meet the City's 5-foot absolute minimum width standard and/or the 7-foot arterial sidewalk width standard, lack Americans with Disabilities Act (ADA) compliant ramps, and/or do not provide for continuous travel. Within the Core Area, sidewalks are generally not present except for on portions of selected major roadways, and some of those that do exist need improvement to meet the City's standards for the given roadway classification. This creates a challenging environment for pedestrians given the amount and type of vehicle traffic on these roadways.

Marked and legal unmarked crossings are primarily located on Puyallup Avenue, in downtown Tacoma, and in Fife at major signalized intersections. Marked pedestrian crossings can be scarce on certain corridors, as found between Portland Avenue E and East E Street on Puyallup Avenue where crossings are 0.8 mile apart. This can be challenging for users accessing bus stops, neighborhood connections, and other destinations located on Puyallup Avenue, such as the Greyhound Bus Stop. Marked crossings are generally not present within the Core Area, resulting in some pedestrians choosing to travel out of their way to cross at a marked crosswalk or instead choosing to cross at illegal locations where drivers may not expect pedestrians to be present. The existing pedestrian network is shown in **Exhibit 8-8**.

Existing Pedestrian Network

Many roadways have missing sidewalks, forcing people who choose to walk to use the narrow shoulders, as shown in the image below on Marshall Avenue.





SOURCE: City of Tacoma and City of Fife; data compiled by Fehr & Peers and BERK 2024

EXHIBIT 8-8 Pedestrian Network within and near the Study Area

In addition to the limited crossing opportunities within the subarea, there are only limited ways for pedestrians to access the subarea from the surrounding areas. SR 509, I-5, and the Puyallup River are major mobility barriers for pedestrians, with very few crossings that provide adequate access. These include sidewalks crossing the Puyallup River on the 11th Street, Lincoln Avenue, and Fishing Wars Memorial bridges that provide access to Tacoma, in addition to only one sidewalk (along Wapato Way) providing access over I-5 between Fife and the subarea.

The public can access shoreline at points along Thea Foss Waterway including at Waterway Park and at the City of Tacoma Fire Department facility. The City of Tacoma Shoreline Public Access Plan (2010) describes other possible opportunities to provide public access to waterways in the area while meeting the goals outlined in the Shoreline Master Plan (2019).

Bicycle Network

The study area contains a mixture of bicycle facilities including striped lanes and multiuse trails, as shown in **Exhibit 8-9**. Bicycle lanes are generally only located on corridors connecting to the study area such as E 11th Street, East D Street/McKinley Avenue, while a multiuse trail providing recreational opportunities is located adjacent to the waterways in downtown. The City of Fife provides east-west bicycle connectivity via a striped bike lane on 12th Street E from 46th Avenue E to 2,000 feet east at the UPS facility entrance. Most major roadways do not have shoulders, requiring bicyclists to mix with other vehicles in the available travel lane(s), as allowed by state law.

Roadways within the Core Area are generally wide with shoulders, which is beneficial to freight mobility but can result in higher vehicle speeds for passenger cars and makes intersections larger and more challenging to navigate for bicyclists. The wide roadway surface, in addition to lower traffic volumes found in the area, can allow space for bicyclists. However, the lack of street lighting, roadway debris, and on-street parking on many internal roadways can lead to hazards and challenges between truck drivers and bicyclists. Additionally, bicyclists may not be comfortable using travel lanes with freight vehicles. Rail crossings also present challenges for bicyclists as in-street tracks can be difficult to navigate.



SOURCE: City of Tacoma 2020; data compiled by Fehr & Peers and BERK 2024

EXHIBIT 8-9 Bicycle Network within and near the Study Area

Parking

Public parking for general purpose vehicles is generally provided at surface parking lots as well as on-street. Additional facilities are located outside the Industrial/Commercial buffer in the Tacoma Dome area as well as in downtown Tacoma and in Fife, and vendors generally charge an hourly or daily fee for use. Parking at the Tacoma Dome Station Park and Ride garage is currently free for the public to use and does not require the purchase of a transit ticket to park. This location experiences high demand in the morning when people arrive to transfer to Sounder service, as well as during events at the Tacoma Dome.

On-street parking is primarily regulated by the City of Tacoma, which requires an hourly fee for parking during the day. Payment is collected via meter or using digital fare media. There are a number of off-street, informal parking areas around the Tacoma Dome Station and near the SR 509 corridor that are generally not regularly enforced by parking attendants. On-street parking is not typically provided in the City of Fife. Within the core area, some businesses provide surface lot parking for employees and/or customers. Where dedicated parking is not provided, employees park on-street or on the shoulder of roadways. Freight vehicles also use these on-street facilities for parking.

Commercial vehicle parking is prohibited along streets in many zoning districts in Tacoma and Fife. Per Tacoma Municipal Code Section 11.05.200, it is unlawful to park any commercial vehicle over 10,000 pounds Gross Vehicle Weight on any public right-of-way in a Residential District or Mixed-Use Center District for over 1 hour unless engaged in legitimate loading/unloading activities. Fife Municipal Code Section 10.24.065 restricts parking and storage of vehicles on city streets. On-street commercial vehicle parking is allowed in the Tideflats industrial area; however, many of the streets have inadequate shoulders or parking lanes to accommodate parking. Trucks have been observed to park along sections of Milwaukee Way, Thorne Road, the Lincoln Avenue Loop, Alexander Avenue E, and some of the local industrial streets.

Private truck stops and rest areas provide long-haul truck drivers with safe places to take their mandatory rest breaks. WSDOT's 2016 Truck Parking Study identified state-wide truck parking issues and unmet parking demand along Washington's top three corridors (I-5, I-405, and I-90). This study also acknowledges that parking issues are most prevalent in urban areas. Closest to the study area, WSDOT's truck parking study identified three private truck stops and one WSDOT-

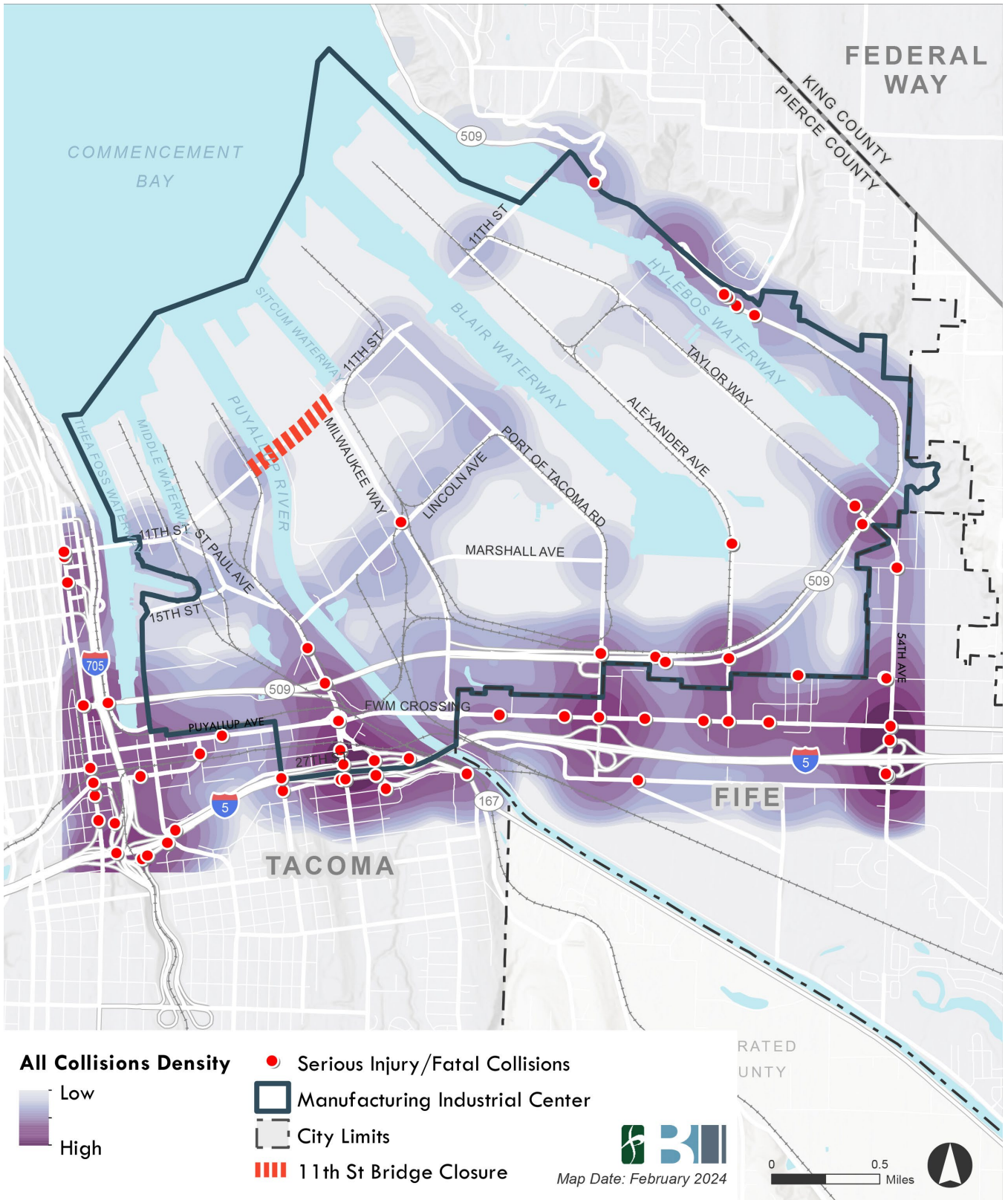
operated safety rest area along the I-5 corridor between Federal Way and Lakewood. One of those private truck stops is located on Port of Tacoma Road north of Pacific Highway E.

While some larger firms provide off-street parking lots for their truck drivers, many drivers own their own trucks and contract with brokers for larger accounts. Because many of those drivers are unable to drive their truck home, they park in the Tideflats area overnight and commute in using their personal vehicle. This results in high demand for overnight truck parking. While supply is generally adequate to accommodate the current demand, it is critical to maintain the existing supply and perhaps explore options to support truck parking through a more centralized approach. This could address issues that arise when overnight parking conflicts with adjacent businesses or complaints regarding trucks parking for long periods of time. Shorter term truck queuing and staging is also an important issue in the Tideflats area, as discussed in the *Traffic Operations* section.

Safety

To determine potential areas of safety concern within the study area, 5 years of collision data (2015–2019) were obtained from WSDOT. **Exhibit 8-10** shows a heat map of total collisions within the study area, with fatal or serious injury collisions superimposed. As is typical, collisions tend to be highest where roadways intersect and on arterial streets with higher speeds, and higher volume facilities tend to have higher numbers of collisions. Major collision hotspots stretch along Portland Avenue E, Port of Tacoma Road, and 54th Avenue E/Taylor Way between SR 509 and their respective I-5 interchanges, where traffic volumes are higher due to the combination of regional background traffic and Tideflats-related traffic. There are also hotspots at each of the major intersections along SR 509, as well as along Lincoln Avenue and along Marine View Drive north of the Port of Tacoma. Lincoln Avenue and Marine View Drive, as well as other smaller hotspots observed within the Port of Tacoma itself, experience lower volumes than roadways near the I-5 interchanges. Fatal and serious injury collisions are concentrated on arterials with larger traffic volumes and higher speeds outside the Core Area. This includes collisions at three railroad crossings within the subarea:

- Milwaukee Way (SIM) crossing just northwest of Lincoln Avenue.
- River Street crossing just west of Portland Avenue.
- Taylor Way crossing just northwest of SR 509.



SOURCE: WSDOT data analyzed by Fehr & Peers and BERK 2024

EXHIBIT 8-10 Heat Map of Total Collisions within the Study Area, 2020

As noted in the *Traffic Operations* section, the Port of Tacoma and the City of Tacoma collaborated on an ITS Strategic Plan that identifies potential improvements to the signals and corridors in the Tideflats Subarea. These improvements could potentially improve safety at some of the locations described above. Many of these potential improvements have not yet been implemented and therefore could be revisited as strategies for the Tideflats Subarea Plan to improve traffic operations and safety.

8.1.2 Current Policy and Regulatory Framework

Plans in the Tideflats Study Area

Port of Tacoma GCP Traffic Study (2018)

The Port of Tacoma plans to modernize container terminal and support facilities on its General Central Peninsula (GCP), which is located in the study area on the peninsula between the Sitcum and Blair Waterways north of E 11th Street. The *Transportation Technical Report for the Port of Tacoma GCP Uplands Modernization* (Heffron 2018) describes the transportation effect of the GCP Improvement Program, to increase the capacity and operational efficiency of two container terminals. This includes creating an off-dock truck gate and staging yard at the Thorne Road Properties and changing the terminal entry and exit configuration near Port of Tacoma Road/11th Street E.

Thorne Road Properties

The Port of Tacoma is in the process of developing a new Off-Dock Container Support Facility on three Port-owned parcels (total of 24.5 acres) east of Thorne Road and north of Maxwell Way in the Tideflats. The parcels are referred to as the Thorne Road Properties.

Port of Tacoma Comprehensive Scheme of Harbor Improvements (2017)

The Port of Tacoma maintains a *Comprehensive Scheme of Harbor Improvements*, as mandated by state law (Port of Tacoma 2017); generally, these schemes should be updated every 10 to 20 years. The intent of this document and its amendments is to give the public a reasonably detailed picture of the Port's planned improvement projects and the geographic limits of development needed to support these projects, prior to the Port Commission's vote and adoption of a comprehensive scheme of harbor improvements.

Tideflats Emergency Response Plan (2016)

The *Tideflats Emergency Response Plan* assesses the ability for emergency services to access and egress the study area considering the impact of rail and traffic congestion through 2035 (Tacoma Fire Department 2016). The plan outlines a set of recommendations that can address emergency response needs in the Tideflats area over the short, medium, and long term based on emergency response analysis.

The recommendations are related to transportation infrastructure, fire station locations, staffing, and operations. Two high-priority infrastructure improvements identified in the plan are the Fishing Wars Memorial Bridge Replacement and Port of Tacoma Road and I-5 Interchange. The document acknowledges that the planned roadway projects would improve overall accessibility to and from the Tideflats area, but they alone would not be sufficient to substantially affect emergency response times given the locations of existing fire stations and general increases in traffic congestion in 2020 and 2035. Note: this plan was completed prior to the implementation of Fire Station No. 5 at E 11th Street and Taylor Way.

Tideflats and Port of Tacoma ITS Strategic Plan (2015)

The *Tideflats and Port of Tacoma Intelligent Transportation Systems (ITS) Strategic Plan* identifies the needs and strategies to improve safety, increase freight mobility, and accommodate growth in the Tideflats area (Port of Tacoma and City of Tacoma 2015). The plan assesses six high-level ITS strategies including signal optimization, signal priority and pre-emption, incident management, Tideflats area “511” service, active lane management, and supporting ITS infrastructure. Specific projects tied to the strategies were developed and prioritized for short (0–5 years), mid (6–10 years), and long-term (over 10 years) phasing, with cost estimates for short-term projects. Two short-term ITS projects recommended constructing initial ITS infrastructure needed for basic information sharing among stakeholders and adding cameras to key existing at-grade rail crossings.

Port of Tacoma’s 2021–2026 Strategic Plan (2021)

The *Port of Tacoma’s 2021–2026 Strategic Plan*, adopted in 2021, aims to identify strategic investments in the harbor and community that promote prosperity, trade, and jobs, while protecting and enhancing the environment. The plan includes five foundational goals: community connections, environmental leadership, economic vitality, organizational success, and transportation advocacy. Under transportation advocacy, strategies include supporting infrastructure projects that increase Port freight mobility, advocating for infrastructure and system management needs of Port-related businesses in the Tideflats area, and developing policies to guide decision-making for transportation advocacy and prioritizing infrastructure investments.

Port of Tacoma Land Use & Transportation Plan (2014)

The *Port of Tacoma Land Use and Transportation Plan* guides future development and infrastructure priorities to achieve the goals considered in the Port's 2012–2022 Strategic Plan (Port of Tacoma 2014b). The plan establishes a development vision for all Port-owned property in the Tideflats area using seven development designations: marine terminals, commercial, mixed commercial/maritime support, marine services, industrial/maritime support, public utilities/public safety, and habitat/public access. These designations are consistent with the adopted City of Tacoma land use and shoreline regulations. The transportation section of the plan prioritizes freight system improvement strategies and investments in four user group areas: regional and port access, Tideflats circulation and preservation, rail facilities, and waterways. Two of the high-priority projects highlighted in the plan are the SR 167 Completion project (in Tacoma and Fife) and the Port of Tacoma Road/I-5 Interchange project (in Fife). These two facilities would serve major port-related traffic once completed. Regarding rail infrastructure, the plan considers nine Tacoma Rail capital projects and eight Port and Tacoma Rail collaborative projects. High-priority rail projects include the connection of EB1 Terminal to the railroad system (now completed) and the construction of industrial lead tracks and preservation of Taylor Way crossings to support future cargo customers on the Blair-Hylebos Peninsula.

Tideflats Area Transportation Study (2011)

The *Tideflats Area Transportation Study* examines the multimodal transportation network within the Tideflats area, with project partners including the Port of Tacoma, City of Tacoma, City of Fife, Puyallup Tribe, and Pierce County (Port of Tacoma 2011). Based on input from stakeholders, future travel demand forecast, and micro-simulation of the roadway network, the plan recommends a package of roadway and rail transportation improvement projects to increase mobility, accessibility, and safety. The plan highlights the need to complete the portion of SR 167 between SR 161 in Puyallup and SR 509, to reduce the potential for a highly congested network. The recommended projects, which have an estimated cost of \$290–335 million (in 2010 dollars), are categorized according to the user group that they most benefit: Tideflats area, Port, industrial, and local access. Two additional high-priority projects include extending Canyon Road from Pioneer Way across the Puyallup River to 70th Avenue E and adding truck lanes on Port of Tacoma Road.

East Thea Foss Waterway Transportation Corridor Study (2008)

The *East Thea Foss Waterway Transportation Corridor Study* analyzes and develops a transitional transportation corridor system to improve access, circulation, and functional separation in the East Thea Foss Peninsula area (City of Tacoma 2008). The recommendations focus primarily along the East D Street corridor and are elaborated for two future scenarios, with and without an operational Murray Morgan Bridge. The study's priority recommendations include improving the E 11th Street/East F Street/St. Paul Avenue intersection and moving forward with the East D Street/SR 509 ramp feasibility study working with WSDOT and BNSF.

Project-Specific Plans**South Pierce Multimodal Connectivity Study (2023)**

The South Pierce Multimodal Connectivity Study (SPMCS) is a planning study completed by WSDOT to determine how additional connectivity could be provided between SR 161, SR 7, SR 507, and I-5 in South Pierce County (WSDOT 2023a). This study identified existing gaps and evaluated conditions in the study area in 2050 to create a strategic vision for improving transportation connectivity in the study area. The Strategic Vision Package for this study includes transportation systems management and operations (TSMO, defined below), ITS, and safety improvements; multimodal infrastructure improvements; transit improvements; and capacity and connectivity improvements in South Pierce County.

SR 167 Master Plan Planning and Environmental Linkages Study (2023)

This WSDOT-led study was completed to assess and identify recommendations for improving mobility near the SR 167 corridor from I-405 to its current terminus. The plan identifies current needs related to equity, safety, environmental, mobility and economic vitality, and maintenance and includes recommendations aimed at addressing those needs (WSDOT 2023b).

The study included an evaluation of three scenarios and resulted in a final set of recommendations, which include creating additional capacity on SR 167, completing missing ramps, implementation of statewide tolling programs, complete streets improvements, and numerous transit improvements and enhanced services within the study area.

I-5/Port of Tacoma Road Interchange Improvement Project (Ongoing)

The City of Fife's I-5 Port of Tacoma Road Interchange Improvement Project has been developed over the past decade and is currently under construction (City of Fife 2020). The project will reconstruct the interchange at Port of Tacoma Road and I-5, a key access point for freight to and from the Tideflats area, as well as enhance surface streets and intersections. Traffic analysis completed as part of this project showed that without improvements, the area would experience high levels of congestion by 2040; with the project, all intersections are expected to operate at LOS D or better by 2040. The first phase of the project is complete; the City of Fife has applied for grant funding to complete the second phase.

WSDOT Gateway Program SR 167/509 (2020)

WSDOT's Gateway Program SR 167/509 includes three projects that provide essential connections to the Port of Tacoma (WSDOT 2020a). The SR 167 Completion Project will address a critical missing link in WSDOT's highway network, completing the remaining 4 miles of SR 167 between Meridian Avenue in Puyallup and SR 509 in Tacoma. This new highway segment will provide two general purpose lanes in each direction between Puyallup and I-5, and one lane in each direction between I-5 and the Port of Tacoma at SR 509. There will also be a westbound off-ramp and eastbound on-ramp connecting to 54th Avenue E with a roundabout intersection north of 8th Street E. When completed, the divided highway will have interchanges in key locations including SR 509, 54th Avenue E, I-5, Valley Avenue E, and SR 161. All lanes on the new portion of SR 167 will be tolled using two electronic toll points with no tollbooths. An early element of this project has already built a new four-lane bridge over I-5 at Wapato Way E (i.e., new offshoot from 70th Avenue E), and has constructed a roundabout at the new intersection of SR 99/Wapato Way E. The full project, which would first construct the SR 509 spur to I-5 and then build the connection from Puyallup to I-5, is expected to be complete by 2028.

Sound Transit Tacoma Dome Link Extension (TDLE) Project (2020)

The Tacoma Dome Link Extension (TDLE) project would extend Sound Transit's regional light rail network from the Federal Way Transit Center (opening in 2026) to the Tacoma Dome Station, with four new stations: South Federal Way, Fife, Portland Avenue in Tacoma, and at the Tacoma Dome (at or near the existing Tacoma T-Line terminus). The new light rail alignment would be on a dedicated guideway including

a rail-only fixed bridge crossing the Puyallup River. Parking garages with approximately 500 stalls are proposed at the South Federal Way and Fife Stations. The Draft EIS is expected to be published in 2024 (Sound Transit 2023). Project completion is currently targeted for 2035.

Fishing Wars Memorial Bridge Study/Puyallup Fishing Wars Bridge Design Criteria Report (2020)

The City of Tacoma is planning to replace Fishing Wars Memorial (FWM) Bridge across the Puyallup River. This bridge (formerly the Puyallup River Bridge), which is on Fishing Wars Memorial Crossing and Pacific Highway E to the east, connects the City of Fife and City of Tacoma and was originally built in 1927. The *Draft Fishing Wars Memorial Bridge Design Criteria Report* describes the need for the project and some of its benefits (City of Tacoma and TY Lin International 2020). The west approach to the FWM Bridge was replaced and the bridge re-opened in September 2019 after an 18-month closure. The proposed project would replace the remaining segments of the bridge, including the segment over the river and the east approach that extends beyond the Milwaukee Way “Loop” underpass. In October 2023, the City of Tacoma in consultation with the Federal Highway Administration closed the Fishing Wars Memorial Bridge after finding structural issues below the bridge deck. In addition to vehicles, the bridge is also closed to pedestrian and bicycle traffic. A detour has been established to utilize the Lincoln Avenue Bridge. There is currently no schedule for re-opening the bridge.

Canyon Road Regional Connection Project (2020)

The Canyon Road Regional Connection Project, led by Pierce County in collaboration with the City of Fife, Puyallup Tribe of Indians, BNSF Railway, and WSDOT, would extend Canyon Road E between Pioneer Way E and 70th Avenue E (Pierce County 2020a). It includes a new bridge over the Puyallup River to replace the aging Milroy Bridge. While this connection would reduce congestion and decrease travel times for all users, it would be particularly valuable for freight as it would provide an alternate route between the Tideflats area and the Frederickson Industrial Area. Design and right-of-way are fully funded; pending funding for construction, this final connection is slated to be complete by 2027.

11th Street Bridge Corridor Study (2019)

The E 11th Street Bridge and adjacent viaduct were built in 1930 to provide access over the Puyallup River but were closed in 2014 due to

deterioration of the structures. The *East 11th Street Bridge Corridor Study* provides a high-level evaluation of whether the existing structure should be replaced, repaired, or demolished. Pending further analysis as part of the Tideflats Subarea Plan, the study recommends that the existing structures be replaced with a new three-lane bridge to provide sufficient capacity for future traffic volumes, emergency vehicle access, and enhanced freight mobility. A multi-use path is also recommended as part of the bridge replacement.

SR 509 East D Street Interchange Project (2015)

The City of Tacoma completed an Interchange Justification Report in 2012, which examined the feasibility of providing new ramp connections to/from SR 509 at East D Street in the East Thea Foss area east of downtown Tacoma. The proposed project would improve freight access to the BNSF rail yards and other industrial properties, while expanding route options for travelers accessing the Tacoma Dome district.

Local Jurisdiction and Agency Plans

City of Tacoma

Vision Zero Tacoma (2022)

Vision Zero Tacoma establishes a set of strategic actions that the City will take to achieve its goal of eliminating traffic fatalities and serious injuries by 2035 (City of Tacoma 2022). This document establishes the City's Action Plan for implementing the Safe Systems Approach, a methodology to achieving zero traffic deaths developed by the Federal Highway Administration and establishes policies that when implemented over the next 13 years will reduce the number of fatal and severe injury collisions that occur in Tacoma.

The plan includes identification of high-risk corridors, corridors where a high number of fatal or severe collisions occur today, for people walking, bicycling, and driving. This is followed by a series of transformative actions, which when implemented will have the greatest potential for reducing fatal and severe collisions, and supporting actions, which will complement and work alongside transformation actions. Actions identified in the plan include lowering speed limits and implementing traffic calming, designing roadways to prioritize safety of the most at-risk users, prioritizing safety in project planning, development, and review.

Tacoma Environmental Action Plan (2016)

The *Tacoma Environmental Action Plan* outlines actions the City and residents can take to become more environmentally sustainable (City of Tacoma 2016). The focus of the report is on near-term actions. A number of transportation-related targets are identified for reductions in single-occupancy vehicle trips, fossil fuel use, and bicycle and pedestrian collisions. Strategies generally involve improving bicycle and pedestrian infrastructure and access, transit improvements, and increasing availability of electric vehicle infrastructure including joining the West Coast Electric Fleets program. Longer term goals include reducing greenhouse gas emissions from transportation and petroleum fuel use; protecting public health and the environment from air pollution; prioritizing the movement of people and goods that have the least environmental impact and greatest contribution to livability; building a transportation network that provides options, accessibility, and economic vitality; and designing an environmentally, socially, and fiscally sustainable transportation system through strategic planning efforts, funding and projects.

Tacoma Transportation Master Plan (2015)

The *Tacoma Transportation Master Plan* (TMP) is an element of the One Tacoma Comprehensive Plan and contains a vision for how the future transportation network will serve additional growth (City of Tacoma 2015 and 2018 amendments). The TMP states that the City is moving toward a more multimodal approach that considers more than the traditional vehicle delay metrics. Currently, the City uses two metrics to evaluate transportation performance: first, a system completeness measure to track progress in implementing the multimodal transportation network, and second, an intersection level of service (LOS) standard of D in the Tideflats area.

The City has designated a network of Heavy Haul Routes that carry the highest volumes of truck traffic and require roadway designs to accommodate freight. The TMP recognizes the importance of coordination between the City and the Port of Tacoma on the development of level of service for transportation and impact fees. The plan includes several policies related to freight mobility, including addressing inter-modal conflicts and strengthening Tacoma as a primary hub for goods movement by integrating freight considerations into the transportation network.

Tacoma Comprehensive Plan – Container Port Element (2014)

The Container Port Element was added to the Comprehensive Plan in 2014 and is mandated by the state Growth Management Act in support of land use and transportation planning for marine ports in Tacoma and Seattle. The Container Port Element provides goals and policies related to the Port Industrial Area and establishes a policy framework to ensure land use decisions consider the needs of container ports and freight corridors. The land use goal for the Core Area is to identify the core port and port-related container industrial area and protect the long-term function and viability of this area. The overall goal for transportation is to identify, protect, and preserve the transportation infrastructure and services needed for efficient multimodal movement of goods and between the Core Area, Industrial/Commercial Buffer Area, and regional transportation system. A key planning principle for the Core Area notes that uses should be prioritized as follows:

1. Cargo facilities and activities.
2. Water-dependent port uses.
3. Water-related port uses.
4. Other uses permitted in Port Maritime Industrial zoning.

North Downtown Subarea Plan (2014)

The *North Downtown Subarea Plan* covers northern downtown, northern Thea Foss Waterway, and land to the east of Foss Waterway, as well as the Murray Morgan (11th Street) Bridge (City of Tacoma 2014b). Mobility considerations are generally concentrated on areas west of the waterway and the study area, but address connections between downtown and the study area. The study recommends adoption of an impact fee program to help fund transportation improvements and a shared use path along the east side of Foss Waterway.

South Downtown Subarea Plan (2013)

The *South Downtown Subarea Plan* includes portions of the study area including the southern stretch of Thea Foss Waterway, land to the east of Foss Waterway, and the vicinity of Puyallup Avenue and E 26th Avenue west of East G Street as well as the SR 509 bridge (City of Tacoma 2013). The plan proposes phased-in impact fees to fund transportation improvements and a transportation performance monitoring plan with thresholds for public transit speed, reliability and capacity, and connections to the state highway system. The plan recommends a cycle track on S 21st Street, bicycle lane on Puyallup

Avenue, a Complete Streets reconfiguration of Puyallup Avenue, and transit priority strategies in the Tacoma Dome Station area.

City of Fife

I-5/54th Avenue E Improvement Project (Ongoing)

The City of Fife is currently leading a study to develop improvements to the I-5/54th Avenue E interchange, which is integral to freight operations for the City of Fife and Port of Tacoma. They have been working with WSDOT, Federal Highway Administration, Port of Tacoma, and the Puyallup Tribe of Indians since 2013 to evaluate improvement alternatives. The project is being designed to address vehicle delay and queuing, providing better mobility within the City of Fife, and an improved connection for freight to access the Tideflats area.

City of Fife Transportation Element (2012)

The *Transportation Element* of the City of Fife's Comprehensive Plan documents current transportation facilities and long-range plans to accommodate growth to a horizon year of 2040 (City of Fife 2012). The City adopted an intersection LOS standard of D or better. Two intersections within the Tideflats area are forecasted to operate below this threshold by 2040: Port of Tacoma Road & Pacific Highway E and 54th Avenue E & Pacific Highway E. The Transportation Element recommends creating truck routes to ensure industrial and commercial areas are adequately served while minimizing truck traffic on residential streets. The plan also identifies future bicycle facility needs including on roadways connecting to the study area.

Puyallup Tribe of Indians

Climate Change Impact Assessment and Adaptation Options Study (2016)

The Puyallup Tribe of Indians' *Climate Change Impact Assessment and Adaptation Options Study* addresses climate change and the challenges it presents to natural resources (Puyallup Tribe of Indians 2016). The document cites the WSDOT Climate Impacts Vulnerability Assessment study, which identifies four highways that may be highly vulnerable to climate change impacts, including the following key corridors within and connecting to the study area: SR 509, SR 99, SR 167, and I-5.

Pierce County

Countywide Planning Policies (2020)

Pierce County's *Countywide Planning Policies* (CPP) outlines countywide goals and policies applicable to transportation facilities (Pierce County 2020b). These goals call for maintaining and operating the existing transportation system in a safe and efficient way; developing transportation systems that support travel to and from regional centers; and addressing alternatives to driving alone, including access to various mobility options. The policies require that municipalities adopt measures to ensure growth is supported by the provision of adequate public facilities including transportation concurrent with development.

Puget Sound Regional Council

VISION 2050 (2019)

The Puget Sound Regional Council's (PSRC) *VISION 2050* provides strategies for accommodating growth in the Central Puget Sound until the horizon year of 2050 (PSRC 2019). Tacoma is listed as one of the area's five central base cities. The document states that the movement of people and goods is crucial to the continued success of the economy and envisions a transportation system that connects the region's centers. *VISION 2050* contains recommended goals and policies, including:

- **MPP-T-11:** Design, construct, and operate a safe and convenient transportation system for all users while accommodating the movement of freight and goods, using best practices and context-sensitive design strategies.
- **MPP-T-14:** Integrate transportation systems to make it easy for people and freight to move from one mode to another.
- **MPP-T-25:** Ensure the freight system supports the growing needs of global trade and state, regional, and local distribution of goods and services.
- **MPP-T-26:** Maintain and improve the existing multimodal freight transportation system in the region to increase reliability, efficiency, and mobility, and prepare for continuing growth in freight and goods movement.

Regional Centers Framework Update (2018)

PSRC's *Regional Center Framework Update* guides jurisdictions in updating their center plans, including for Regional Manufacturing Industrial Center Plans (PSRC 2018). The study area is designated by the PSRC as the Port of Tacoma Manufacturing/Industrial Center (MIC).

The checklist includes the following requirements for Regional Manufacturing Industrial Center Plans with respect to transportation:

- Describe the transportation networks to and within the MIC and plans to identify and address deficiencies.
- Describe strategies that address freight movement (such as rail, trucking facilities, or waterway, as appropriate), including local and regional distribution.
- Describe strategies that address employee commuting (such as by encouraging modes such as fixed-route and high-capacity transit).
- Describe relationships to regional high-capacity transit (including bus rapid transit, commuter rail, light rail, and express bus) and local transit, and coordination with transit agencies.
- Include mode split goals.

U.S. Department of Defense

Power Projection Platform Route Study (2020)

The Strategic Highway Network (STRAHNET) is a 62,791-mile national system of roads that is essential to support emergency mobilization and peacetime movement of heavy armor, fuel, ammunition, repair parts, food, and other commodities to support U.S. military operations. A subset of the STRAHNET is approximately 15,000 miles of public roadways that are most critical to support the movement of DOD equipment from large military installations.

The JBLM PPP Route Study focused on evaluating the condition and effectiveness of the PPP route connecting JBLM to the Port of Tacoma. This PPP route is broken into two segments: PPP Route 14A from JBLM to the East Sitcum Terminal via Port of Tacoma Road, and PPP Route 14A-2 to the East Blair Terminal via 54th Avenue E/Taylor Way. The study found that both routes have adequate infrastructure within the Tideflats Subarea to continue to support large deployments from JBLM to the Port of Tacoma, with the exception of some height clearance issues at bridges that will be addressed in the next 10 years. The study also noted that congestion along I-5 and into the Tideflats Subarea during peak periods remains an issue, but can be addressed through proper scheduling and coordination with local agencies.

WSDOT

Joint Transportation Committee Prioritization of Prominent Road-Rail Conflicts in Washington State (2017)

At the direction of the Washington State Legislature, the Joint Transportation Committee (JTC) conducted a study to evaluate the impacts of prominent road-rail conflicts and develop a corridor-based prioritization process for addressing the impact on a statewide level. The study found 2,180 crossings that were active, at-grade, and public out of the 4,171 total crossings statewide. The crossings were evaluated based on mobility, safety, and community criteria, and assigned an overall score used for prioritization. Specific data related to rail crossings in the Tideflats area were compiled for use in this report.

Freight Mobility Plan/Freight System Plan (2014/2017)

The Freight Mobility Plan outlines strategies and goals for ensuring that the transportation system supports and enhances trade and sustainable economic growth. The plan was created to meet state and federal policies and goals including economic vitality, preservation, safety, mobility, environment, and stewardship in support of the *Washington Transportation Plan 2030*. A technical update called the *Washington State Freight System Plan* was completed in 2017 to address necessary regulatory and technical updates since the 2014 plan.

Applicable to Tideflats Subarea, the 2014 plan identifies an unfunded project to improve transit movements within the Tideflats area by connecting the northern end of the existing WUT Intermodal Yard to the rail line on the west side of Port of Tacoma Road. Additionally, the 2017 update cites a Joint Transportation Committee *Road-Rail Study (2017)*, which identifies rail crossing statewide and prioritizes locations for improvement based on several variables. The rail crossing on E 11th Street & Thorne Road near the Port of Tacoma Administration Building is on the prioritized list.

8.2 Potential Impacts

This section describes the potential impacts of each future year development alternative. The impacts of the development alternatives are measured against conditions expected under Alternative 1 (No Action), as the No Action Alternative is consistent with planned growth in the City and region.

8.2.1 Analysis Methodology & Planning Scenarios Evaluated

Four alternatives are evaluated under future year 2044 conditions: Alternative 1 (No Action) and three development alternatives. Alternative 1 (No Action) is consistent with the City's current zoning and adopted plans. A full description of the land use assumptions may be found in Chapter 3. All alternatives assume improvements included in current City and regional plans, as shown in **Table 8-4** and **Exhibit 8-11**. Key projects include the TDLE project, SR 167/I-5 to SR 509, and improvements at the I-5/Port of Tacoma Road Interchange.

Future Traffic Forecasts

To develop the future forecasts for this project, Fehr & Peers applied the South Pierce County version of the PSRC travel demand model developed for the SR 167 Master Plan (WSDOT 2023b) and South Pierce County Multimodal Connectivity Study (WSDOT 2023a). This version of the PSRC travel demand model is an appropriate tool for this project given its level of detail in the study area (in terms of both land uses and transportation network), assumptions for transit investments, and future land use assumptions that are consistent with growth anticipated through 2044. The model was updated to use household and employment forecasts consistent with regional assumptions from PSRC and the City's expected growth. The model also incorporates planned transportation facilities into the model network, such as the T-Line light rail extension to the Tacoma Dome.

To account for the unique trip generation and travel patterns associated with freight traffic traveling to and from the NWSA terminals and the expected increase in medium and heavy truck traffic associated with port operations, growth from the travel demand model developed for the Port of Tacoma was used to supplement future traffic forecasts from the South Pierce County travel demand model.

Intersection Operations

Traffic operations were analyzed using the Synchro 11 software package and Highway Capacity Manual (HCM) 6th Edition methodology. The Synchro network reflects the planned roadway network including segment and intersection geometry, and signal timings optimized for future traffic conditions. For signalized and all-way stop controlled intersections, LOS is based on the average delay of all movements. For side street stop-controlled intersections, LOS is

TABLE 8-4 Funded Projects

	Name	Description	Completion
1	SR 167/I-5 to SR 509 – Stage 1B	Construct new four-lane alignment on SR 167 between I-5 and SR 509; includes new interchanges at I-5, SR 509, and 54 th Avenue. Also includes replacing the 70 th Avenue overpass at I-5. Work also includes extending a non-motorized share use path between Alexander Ave to Taylor Way along SR-509 and to Pacific Hwy roundabout at Wapato Way.	Under Construction
2	Tacoma Dome Link Extension – Federal Way to Tacoma Dome	Extend light rail from the Federal Way Transit Center to Tacoma via I-5 with four new stations in the south Federal Way, Fife and east Tacoma areas, and at the Tacoma Dome Station.	2035
3	I-5/Port of Tacoma Road Interchange – Phase 2B	Reconstruct 20 th St E from west of Port of Tacoma Rd to Industry Dr E as part of the Port of Tacoma Road Interchange Project. Project includes a new signal at the 20 th St E and Industry Dr E intersection.	Under Construction
4	E Portland Ave Safety Improvements – E 72nd to Puyallup Ave	Construct needed safety improvements along the Portland Ave corridor. The project will include a variety of safety improvements including signal system upgrades (12" signals with retroreflective backplates).	2028 (Design)
5	High-Capacity Transit Corridor – Downtown Tacoma to Parkland	Implement a high-capacity bus rapid transit line along Pacific Avenue from Downtown Tacoma to Parkland.	Project on pause; design and construction to be determined
6	Tacoma T-Line to Tacoma Community College	Extend Tacoma T-Line from downtown Tacoma to Tacoma Community College with six new stations.	2035–2041
7	Puyallup Avenue Corridor Improvements	This project will enhance the multimodal transportation experience for pedestrians, cyclists, drivers, transit riders, and freight operators along Puyallup Avenue, from South C Street to Portland Avenue, including the Portland Avenue intersection (1.2-mile length). The project scope includes reconstruction of the roadway and installation of complete street elements including bike lanes, sidewalks, curb ramps, bulb-outs, crosswalks, signals, lighting, landscaping, bus stops, parking, upgraded utilities, and a shared high-occupancy vehicle/transit lane.	2024 (Design), Construction start date to be determined
8	SR 509 & Alexander Avenue East Interchange	Reconstruct existing intersection pair to provide all movements at one intersection, including dedicated left-turn and right-turn lanes on SR 509. Access to the frontage road will be provided to the east of the reconfigured intersection.	2024 (Design)

based on the movement with the highest delay. **Table 8-5** summarizes the LOS and delay thresholds specified in the HCM, which is a standard methodology for measuring intersection performance.



SOURCE: Fehr & Peers and BERK 2024

EXHIBIT 8-11 Funded Projects

TABLE 8-5 LOS and Delay Thresholds for Signalized and Unsignalized Intersections

LOS	Signalized Intersections (Delay in Seconds)	Unsignalized Intersections (Delay in Seconds)
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

SOURCE: TRB 2016

The 28 study intersections that were evaluated during the AM and PM peak hours are shown on **Exhibit 8-12**. The study intersections and peak hours during which the analysis was completed were selected based on existing traffic flow in the Tideflats area, state priorities for Port access, and a review of when volume is highest during a typical weekday based on historical traffic counts.

To evaluate the congested conditions expected to occur at the I-5 interchanges in the study area by 2044, SimTraffic, a microsimulation module included in Synchro 11, was used to evaluate the I-5 ramp terminal intersections. SimTraffic captures the observed characteristics of driver behavior and models the interaction between vehicles in a study network, better accounting for the impact of congestion building over time.

8.2.2 Thresholds of Significance

As Alternative 1: No Action is consistent with planned growth in the City and region, to evaluate the impacts of the change resulting from the development alternatives evaluated, Alternative 1: No Action was established as the baseline for future conditions and evaluation of impacts for this EIS. The following thresholds are proposed to identify auto and freight impacts for the development alternatives:

General thresholds of significance used in this impact analysis include:

- Peak hour volumes that degrade intersection operations.
- On-street parking demand exceeding supply.
- A decrease in access to transit, transit amenities, or transit travel time.



SOURCE: Fehr & Peers and BERK 2024

EXHIBIT 8-12 Study Intersections

- Increases in pedestrian and bicycle demand in locations with network gaps or preclusion of planned pedestrian and bicycle improvements.
- Increase in the number of serious and fatal crashes per year in the study area when compared to historic conditions.
- An increase in Vehicles Miles Traveled (VMT) per service population (jobs and households).

More specific thresholds are described below:

- For study intersections with an acceptable LOS based on jurisdictional standards for this EIS under the No Action Alternative, a decrease in LOS to below jurisdictional standards under a development alternative will result in identification of a significant impact.
- For study intersections with a LOS below the jurisdictional standard under the No Action Alternative, an increase in delay of more than 5 seconds under a development alternative will result in identification of a significant impact.

The following jurisdictional standards were used to determine impacts:

- **WSDOT:** For study intersections that include a state route (SR 99, SR 509, or I-5), WSDOT establishes LOS standards for state highways in accordance with RCW 47.06.140. Within the study area, state routes have the following standards:
 - LOS D for intersections along SR 99 and SR 509.
 - LOS E-mitigated for I-5 ramp terminal intersections.
- **City of Tacoma:** The City has identified LOS D as the LOS standard for intersections for this EIS.
- **City of Fife:** The City has established LOS D as the LOS standard for intersections.

Additional Thresholds of Significance:

Although the Cities of Tacoma and Fife have qualitative or system completeness standards related to pedestrian, bicycle, and transit facilities, they have not identified any SEPA-specific thresholds of significance for these modes. As such, pedestrian, bicycle, parking, safety, and rail impacts are discussed qualitatively in comparison to the No Action Alternative. A significant impact is defined if a development alternative would:

- Preclude a bicycle, pedestrian, or freight project as identified in City of Tacoma, Port of Tacoma, and City of Fife plans.
- Result in a general decrease in the level of pedestrian or bicycle accessibility and/or mobility.

- Result in on-street parking demand exceeding supply beyond the level anticipated under the No Action Alternative.
- Increase the rate of collisions along a study segment or at a study intersection compared to the No Action Alternative.
- Result in a decrease in access to transit, transit amenities, or transit travel time compared to the No Action Alternative.
- Results in an increase in VMT per service population that exceeds VMT per service population compared to the No Action Alternative.

8.2.3 Impacts Common to All Alternatives

Active Transportation

The City is continually planning and implementing improvements to active transportation facilities through the *Transportation Master Plan*, various subarea planning efforts, and upcoming capital projects.

Pedestrian and bicycle activity is expected to continue to increase compared to existing conditions, both due to overall growth in the study area as well as an increasing share of people walking and biking to new transit connections planned for the study area. Therefore, under Alternative 1 (No Action), there would be more demand in areas that lack sidewalks or continuous sidewalks, curb ramps, pedestrian crossing opportunities, and dedicated bicycle facilities, particularly in industrial areas (as detailed in the *Affected Environment* section). While many locations in the study area would benefit from improvements to make walking and biking more comfortable, there are no locations in the study area where existing walking and biking demand results in a capacity constraint on active transportation facilities.

The City has identified several corridors within the study area where facilities are needed to improve safety and comfort for people bicycling or rolling. Those include protected bike lanes along the SR 509 alignment and on portions of Puyallup Avenue. Shared use paths are planned along East D Street and Puyallup Avenue from Pacific Avenue to Portland Avenue, while bike lanes are planned on portions of E 11th Street and Portland Avenue E. Planned improvements on Portland Avenue E include adding a bicycle facility (shared use path, protected bike lanes, or similar) south of the interchange and a shared use path providing connection from the I-5 interchange to Puyallup Avenue. The development alternatives are not expected to preclude any planned pedestrian and bicycle improvements and

would likely result in improved infrastructure because they would be subject to development standards for pedestrian and cyclist-oriented frontage improvements. Although Alternatives 2 and 3 would result in higher levels of growth than Alternative 1, additional infrastructure provided as part of frontage improvements are anticipated to improve the level of bicycle and pedestrian accessibility and mobility. **Therefore, no significant adverse impacts on pedestrian and bicycle travel are identified under Alternatives 2 and 3.**

Parking

The overall supply of on-street parking is unlikely to increase under any of the alternatives. Industrial areas may be more likely to see changes in parking supply as redevelopment triggers frontage improvements, such as adding curbs and delineating parking spaces in rights-of-way that were previously used for informal parking.

While there is enough parking supply to accommodate existing demand, a parking impact is expected under Alternative 1 (No Action) as any growth in the area will likely cause demand to exceed supply and result in the need to explore options to support truck parking through a more centralized approach. With the increase in development expected under the development alternatives, specifically Alternative 2 and 3, parking demand would be higher than Alternative 1 (No Action). **Because Alternatives 2 and 3 are expected to increase demand in localized areas, potentially for a sustained period and by a substantive amount compared to Alternative 1 (No Action), significant adverse parking impacts are expected under these alternatives.** As land use changes under Alternative 4 are minimal, no change is expected compared to Alternative 1 (No Action).

The location and severity of impacts would vary by alternative, depending on the concentrations of land use. The degree of parking supply impacts experienced in any given neighborhood would depend on many factors, including how much off-street parking is provided by future development projects, as well as varying conditions related to on-street parking patterns and City regulations (e.g., pricing, enforcement, etc.).

Safety

The City has a Vision Zero policy that aims to reduce the number of traffic fatalities and serious injuries to zero by 2035. This goal, and the policies and strategies supporting it, will continue to be pursued

under whichever land use alternative is selected. Recent examples of policy changes include widespread reductions in speed limits along residential streets and in several Neighborhood Business Districts as well as the introduction of leading pedestrian intervals (i.e., timing signals to give people walking a head start before the vehicles receive a green light) to make people walking more visible to vehicles. The types of location-specific measures that can be implemented depending on the context include traffic calming treatments, including, but not limited to, new traffic signals, separation of facilities for vulnerable users, and hardened centerlines (small rubber barrier that require drivers making left turns to slow down and make squarer left turns). The City will continue to monitor traffic safety and utilize available resources to focus on areas of high need, particularly for the most vulnerable users. Over time, safety programs are expected to result in decreases in the number of traffic fatalities and serious injuries.

All the alternatives will increase traffic volume in the study area compared to existing conditions. As more vehicles travel in the study area, this could potentially lead to an increase in the number of collisions, especially as growth occurs on corridors where collision density is high today. These corridors include Taylor Way, 54th Avenue E near Pacific Highway and the I-5 interchange, Portland Avenue E near Puyallup Avenue and SR 509, and intersections on SR 509. In addition, the development alternatives may result in an increased number of truck and vehicle conflicts with vulnerable users, such as people walking and biking in industrial areas. As a result of the increase in traffic, it is reasonably likely that the development alternatives, with the exception of Alternative 4 (which is not expected to result in a change in travel patterns or volume), could result in an increase of serious and/or fatal collisions in the study area compared to the Alternative 1 (No Action).

Alternatives 2 and 3 could also increase pedestrian crossings of the area's many at-grade railroad crossings, including potential for pedestrian and vehicle conflicts with trains.

Due to the potential increase in the rate of collisions for trucks and trains with vulnerable users, a significant adverse impact is expected under Alternative 2 and 3. Site-specific issues cannot be addressed at this level of analysis. However, individual development applications would be reviewed through the City's permitting process, at which time the City may identify required safety features for the specific site, consistent with the City's transportation design standards.

Rail

There are many grade-separated and at-grade rail crossings within the study area. **As none of the alternatives would change the location or frequency of rail crossings, there is no significant adverse impact identified to rail within the study area.** It is important to note the growth in traffic volume expected under all four of the alternatives would increase the number of auto, freight, and transit users that experience delay due to rail crossings and the length of queues resulting from rail crossings. The increase in delay and queuing is expected to be highest on corridors with existing at-grade crossing where growth is forecast to be higher. These include the major crossings on SR 509 just west of Port of Tacoma Road, Taylor Way, and Milwaukie Way.

8.2.4 Alternative 1: No Action

This section summarizes results of the analysis and transportation impacts of Alternative 1 (No Action) in 2044. Alternative 1 (No Action) serves as the baseline for the impact analysis of the development alternatives. It represents the operation of the transportation system if no zoning or network changes were made in the study area beyond those already planned. However, growth would continue to occur under Alternative 1 (No Action), consistent with current adopted zoning. Alternative 1 (No Action) is expected to result in roughly 1,050 additional jobs in the study area compared to existing conditions. Residential development would be very minor—approximately 200 new dwellings in the study area.

Vehicle Miles Traveled (VMT)

For the No Action Alternative, daily VMT per service population was calculated by dividing the total number of vehicle miles traveled for trips that start or end in the study area by the total number of jobs and households in the study area. VMT per service population under the No Action Alternative was calculated to be 72 miles, higher than typically seen in a more mixed-use neighborhood. This VMT per service population is consistent with the unique land uses in the study area, specifically freight-related uses where employees may live far from employment centers and goods traveling through the Port may require long truck trips to reach their ultimate destination.

Auto, Freight, & Transit

The average vehicle delay and LOS for each study intersection are summarized in **Table 8-6**. As growth occurs in the study area, operations will be degraded to below the City's identified standard for this EIS (LOS D) at most study intersections on key corridors, including Puyallup Avenue and Portland Avenue E. The City is beginning the planning stages for two projects that may address vehicle delays on these corridors, including the Puyallup Avenue Complete Streets Project and a project to install fiber optic cable on Portland Avenue E. That project will allow for the installation of ITS strategies that may help to move auto and freight traffic more efficiently along the corridor.

Under the No Action Alternative, the following study intersection is forecast to operate below the City of Tacoma's identified LOS standard:

- Portland Avenue E & E 26th Street

The following study intersections are forecast to operate below WSDOT's identified LOS standard:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp
- Alexander Avenue E & SR 509
- 54th Avenue E & Pacific Highway

As SR 509, Puyallup Avenue, Portland Avenue E, and Pacific Highway are key corridors for transit in the study area, high delay at these intersections will also impact travel time and reliability for buses using these corridors under the No Action Alternative.

While it is not required to identify mitigation for the No Action Alternative in an EIS, projects needed to improve operations at intersections forecast to operate below the LOS standard under Alternative 1: No Action have been identified.

TABLE 8-6 Alternative 1: No Action Intersection LOS and Delay (2044)

Intersection		Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action	
						LOS	Delay (seconds)
1	Port of Tacoma Road & E 11 th Street	Signal	Tacoma	D	AM	C	28
					PM	—	—
2	Port of Tacoma Road & WUT Access	Signal	Tacoma	D	AM	A	10
					PM	—	—
3	Port of Tacoma Road & Lincoln Avenue	Signal	Tacoma	D	AM	B	11
					PM	B	14
4	Lincoln Avenue Loop & Marc Avenue	Signal	Tacoma	D	AM	B	12
					PM	—	—
5	Portland Avenue E & Lincoln Avenue	Signal	Tacoma	D	AM	B	13
					PM	C	27
6	Port of Tacoma Road & Marshall Avenue	Signal	Tacoma	D	AM	B	11
					PM	—	—
7	Taylor Way & SR 509 ^b	Signal	WSDOT	D	AM	C	29
					PM	D	44
8	East D Street & Puyallup Avenue	Signal	Tacoma	D	AM	—	—
					PM	C	23
9	Portland Avenue E & SR 509 On-Ramp	Uncontrolled	WSDOT	D	AM	—	—
					PM	F	55
10	Portland Avenue E & SR 509 Off-Ramp	SSSC ^a	WSDOT	D	AM	—	—
					PM	E	45
11	Portland Avenue E & Puyallup Avenue	Signal	Tacoma	D	AM	D	54
					PM	C	27
12	Portland Avenue E & E 26 th Street	SSSC ^a	Tacoma	D	AM	—	—
					PM	F	176
13	Portland Avenue E & E 27 th Street	Signal	Tacoma	D	AM	—	—
					PM	C	35
14	Portland Avenue E & E 28 th Street	Signal	Tacoma	D	AM	—	—
					PM	C	34
15	Port of Tacoma Road & SR 509 Frontage Road	Signal	WSDOT	D	AM	—	—
					PM	D	44

Intersection		Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action	
						LOS	Delay (seconds)
16	Port of Tacoma Road & Northbound SR 509 Frontage Road	Signal	WSDOT	D	AM	—	—
					PM	A	9
17	Port of Tacoma Road & Pacific Highway	Signal	WSDOT	D	AM	C	25
					PM	D	49
18	34 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	B	10
					PM	—	—
19	Port of Tacoma Road & I-5 Southbound Ramps	Signal	WSDOT	E	AM	C	34
					PM	C	24
20	Port of Tacoma Road & I-5 Northbound Ramps	Signal	WSDOT	E	AM	B	12
					PM	B	13
21	Alexander Avenue E & SR 509	Signal	WSDOT	D	AM	F	83
					PM	E	64
23	Alexander Avenue E & 12 th Street E	SSSC ^a	Tacoma	D	AM	—	—
					PM	D	26
24	Alexander Avenue E & Pacific Highway	Signal	WSDOT	D	AM	—	—
					PM	C	25
25	54 th Avenue E & 12 th Street E	Signal	Fife	D	AM	B	15
					PM	B	17
26	54 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	D	45
					PM	E	67
27	54 th Avenue E & I-5 Southbound Ramps	Signal	WSDOT	E	AM	A	8
					PM	A	6
28	54 th Avenue E & I-5 Northbound Ramps	SSSC ^a	WSDOT	E	AM	D	30
					PM	E	43

SOURCE: Fehr & Peers 2023

NOTES: **Bold** text indicates operations below LOS Threshold.

a. Side-Street Stop-Control.

b. The pedestrian phases for the north and south approaches to this intersection were removed within the Synchro model to better approximate actual observed and expected gap out time at this intersection, which is anticipated to have little to no pedestrian traffic.

Projects the City of Tacoma could implement to address locations with high delay include:

- **Portland Avenue E & E 26th Street:** Improving operations at this intersection would require installation of a traffic signal. Before a traffic signal can be installed, signal warrants must be evaluated to determine whether a traffic signal is the appropriate form of intersection control. For this EIS, the signal warrant for peak hour conditions was evaluated using the forecasted traffic volumes for 2044. While this evaluation found that the intersection would meet the peak hour signal warrant in 2044 under Alternative 2, a detailed engineering study is needed to confirm that a traffic signal is the appropriate intersection control at this location. Installation of a traffic signal at this intersection would also support operations for a future TDLE Station in the area.

Projects that WSDOT could implement to address locations with high delay include the following. Any mitigations or projects implemented at these locations would require coordination with WSDOT:

- **Portland Avenue E & SR 509 On-Ramp:** Implementation of a traffic signal at this intersection would improve operations to LOS A during both peak hours.
- **Portland Avenue E & SR 509 Off-Ramp:** Implementation of a traffic signal at this intersection would improve operations to LOS B during the AM peak hour and LOS A during the PM peak hour.
- **Alexander Avenue E & SR 509:** To improve operations to LOS D at this intersection, the following potential mitigation options could be considered:
 - Add an additional eastbound through lane that would carry through to the interchange with SR 167. Additionally, add a second eastbound right-turn lane and a separated northbound right-turn lane.
 - Transition the design of this intersection to be a grade-separated interchange. This would not only improve operations at the intersection, but would also reduce safety concerns at this location.

One way to implement either of these mitigations would be to establish a developer improvement fund for this intersection, for example as an interlocal agreement with WSDOT, to address safety and operational issues as they arise. This fund could be established within the developer agreements for the subarea. As previously noted, any mitigations at this location will require close coordination with WSDOT.

- **54th Avenue E & Pacific Highway:** The addition of a dedicated westbound right-turn lane would improve operations at this intersection to LOS D during the PM peak hour.

8.2.5 Alternative 2

This section summarizes results of the analysis and transportation impacts for Alternative 2 in 2044. Compared to Alternative 1 (No Action), Alternative 2 would result in nearly 5,350 new jobs while the number of households would be maintained at existing low levels (about 4 units).

VMT

VMT per service population was calculated for Alternative 2 and is presented in **Table 8-7**. As shown, the addition of jobs in the study area would result in a 10% decrease in VMT per service population as more jobs are available closer to existing residences in and around the study area.

TABLE 8-7 Alternative 2 VMT Summary

Alternative	VMT	Service Population (Jobs + Households)	VMT per Service Population
No Action	1,855,700	25,900	72
Alternative 2	1,961,900	30,000	65

SOURCE: Fehr & Peers 2023

Auto, Freight, & Transit

The average vehicle delay and LOS for each study intersection are summarized in **Table 8-8**. Under Alternative 2, traffic volume in the study area is expected to increase by 2% compared to the No Action Alternative during both peak hours.

Under Alternative 2, the following intersections were found to operate below the City of Tacoma’s identified LOS standard:

- Portland Avenue E & Puyallup Avenue
- Portland Avenue E & E 26th Street

The following intersections were found to operate below WSDOT’s identified LOS standard:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp
- Alexander Avenue E & SR 509
- 54th Avenue E & Pacific Highway

TABLE 8-8 Alternative 2 Intersection LOS and Delay (2044)

Intersection		Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action		Alternative 2	
						LOS	Delay (seconds)	LOS	Delay (seconds)
1	Port of Tacoma Road & E 11 th Street	Signal	Tacoma	D	AM	C	28	C	31
					PM	—	—	—	—
2	Port of Tacoma Road & WUT Access	Signal	Tacoma	D	AM	A	10	B	11
					PM	—	—	—	—
3	Port of Tacoma Road & Lincoln Avenue	Signal	Tacoma	D	AM	B	11	B	11
					PM	B	14	B	14
4	Lincoln Avenue Loop & Marc Avenue	Signal	Tacoma	D	AM	B	12	B	13
					PM	—	—	—	—
5	Portland Avenue E & Lincoln Avenue	Signal	Tacoma	D	AM	B	13	B	14
					PM	C	27	C	30
6	Port of Tacoma Road & Marshall Avenue	Signal	Tacoma	D	AM	B	11	B	11
					PM	—	—	—	—
7	Taylor Way & SR 509 ^b	Signal	WSDOT	D	AM	C	29	C	29
					PM	D	44	D	48
8	East D Street & Puyallup Avenue	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	23	C	24
9	Portland Avenue E & SR 509 On-Ramp	Uncontrolled	WSDOT	D	AM	—	—	—	—
					PM	F	55	F	69
10	Portland Avenue E & SR 509 Off-Ramp	SSSC ^a	WSDOT	D	AM				
					PM	E	45	E	49
11	Portland Avenue E & Puyallup Avenue	Signal	Tacoma	D	AM	D	54	E	60
					PM	C	27	C	28
12	Portland Avenue E & E 26 th Street	SSSC ^a	Tacoma	D	AM	—	—	—	—
					PM	F	176	F	176
13	Portland Avenue E & E 27 th Street	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	35	C	35
14	Portland Avenue E & E 28 th Street	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	34	C	34

Intersection	Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action		Alternative 2	
					LOS	Delay (seconds)	LOS	Delay (seconds)
15 Port of Tacoma Road & SR 509 Frontage Road	Signal	WSDOT	D	AM	—	—	—	—
				PM	D	44	D	50
16 Port of Tacoma Road & Northbound SR 509 Frontage Road	Signal	WSDOT	D	AM	—	—	—	—
				PM	A	9	A	9
17 Port of Tacoma Road & Pacific Highway	Signal	WSDOT	D	AM	C	25	C	25
				PM	D	50	D	51
18 34 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	B	10	B	10
				PM	—	—	—	—
19 Port of Tacoma Road & I-5 Southbound Ramps	Signal	WSDOT	D	AM	C	34	C	34
				PM	C	24	C	24
20 Port of Tacoma Road & I-5 Northbound Ramps	Signal	WSDOT	D	AM	B	12	B	12
				PM	B	13	B	13
21 Alexander Avenue E & SR 509	Signal	WSDOT	D	AM	F	83	F	87
				PM	E	64	E	65
23 Alexander Avenue E & 12 th Street E	SSSC ^a	Tacoma	D	AM	—	—	—	—
				PM	D	26	D	26
24 Alexander Avenue E & Pacific Highway	Signal	WSDOT	D	AM	—	—	—	—
				PM	C	25	C	25
25 54 th Avenue E & 12 th Street E	Signal	Fife	D	AM	B	15	B	15
				PM	B	17	B	17
26 54 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	D	45	D	47
				PM	E	67	E	67
27 54 th Avenue E & I-5 Southbound Ramps	Signal	WSDOT	E	AM	A	8	A	8
				PM	A	6	A	6
28 54 th Avenue E & I-5 Northbound Ramps	SSSC ^a	WSDOT	E	AM	D	30	D	31
				PM	E	43	E	44

SOURCE: Fehr & Peers 2023

NOTES: **Bold** text indicates location with a significant adverse impact.

a. Side-Street Stop-Control.

b. The pedestrian phases for the north and south approaches for this intersection were removed within the Synchro model to better approximate actual observed and expected gap out time at this intersection, which is anticipated to have little to no pedestrian traffic.

Under Alternative 2, the increase in traffic volume would result in **the following intersections meeting the impact threshold defined in the thresholds of significance** for auto and freight travel:

- Portland Avenue E & Puyallup Avenue
- Portland Avenue E & E 26th Street

Under Alternative 2, the increase in traffic volume would also result in the following WSDOT-controlled intersections meeting the impact threshold defined in the thresholds of significance:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp

For the purposes of this analysis, it was assumed that bus routes would continue to operate on Portland Avenue E in the future, although with the implementation of the TDLE, specific bus routing will likely be restructured by 2044. As the increase in delay at the Portland Avenue E & E 26th Street intersection under Alternative 2 would also increase travel time and reliability for bus routes operating on Portland Avenue E, **this is also a significant adverse impact for transit.**

8.2.6 Alternative 3

This section summarizes analysis results of the analysis and transportation impacts for Alternative 3 in 2044. Compared to Alternative 1 (No Action), Alternative 3 would result in approximately 8,550 additional jobs and nearly 500 new households.

VMT

VMT per service population was calculated for Alternative 3 and is presented in **Table 8-9**. As shown, the addition of jobs and dwelling units in the study area would result in a 14% decrease in VMT per service population as more jobs are available closer to new and existing residences within the study area and surrounding areas.

TABLE 8-9 Alternative 3 VMT Summary

Alternative	VMT	Service Population (Jobs + Households)	VMT per Service Population
No Action	1,855,700	25,900	72
Alternative 3	1,961,900	33,700	62

SOURCE: Fehr & Peers 2023

Auto, Freight, & Transit

The average vehicle delay and LOS for each study intersection are summarized in **Table 8-10**. Under Alternative 3, traffic volume in the study area is expected to increase by 3% compared to the No Action Alternative during both peak hours.

Under Alternative 3, the following intersections were found to operate below the City of Tacoma's identified LOS standard:

- Portland Avenue E & Puyallup Avenue
- Portland Avenue E & E 26th Street
- Alexander Avenue E & 12th Street E

The following intersections were found to operate below WSDOT's identified LOS standard:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp
- Alexander Avenue E & SR 509
- 54th Avenue E & Pacific Highway

Under Alternative 3, the increase in traffic volume would result in **the following intersections meeting the impact threshold defined in the thresholds of significance** for auto and freight travel:

- Portland Avenue E & Puyallup Avenue
- Portland Avenue E & E 26th Street
- Alexander Avenue E & 12th Street E

Under Alternative 3, the increase in traffic volume would also result in the following WSDOT-controlled intersections meeting the impact threshold defined in the thresholds of significance:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp

For the purposes of this analysis, it was assumed that bus routes would continue to operate on Portland Avenue E in the future, although with the implementation of the TDLE, specific bus routing will likely be restructured by 2044. As the increase in delay at the Portland Avenue E & E 26th Street intersection under Alternative 3 would also increase travel time and reliability for bus routes operating on Portland Avenue E, **this is also a significant adverse impact for transit.**

TABLE 8-10 Alternative 3 Intersection LOS and Delay (2044)

Intersection		Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action		Alternative 3	
						LOS	Delay (seconds)	LOS	Delay (seconds)
1	Port of Tacoma Road & E 11 th Street	Signal	Tacoma	D	AM	C	28	C	31
					PM	—	—	—	—
2	Port of Tacoma Road & WUT Access	Signal	Tacoma	D	AM	A	10	B	11
					PM	—	—	—	—
3	Port of Tacoma Road & Lincoln Avenue	Signal	Tacoma	D	AM	B	11	B	11
					PM	B	14	B	14
4	Lincoln Avenue Loop & Marc Avenue	Signal	Tacoma	D	AM	B	12	B	13
					PM	—	—	—	—
5	Portland Avenue E & Lincoln Avenue	Signal	Tacoma	D	AM	B	13	B	16
					PM	C	27	D	36
6	Port of Tacoma Road & Marshall Avenue	Signal	Tacoma	D	AM	B	11	B	12
					PM	—	—	—	—
7	Taylor Way & SR 509 ^b	Signal	WSDOT	D	AM	C	29	C	29
					PM	D	44	D	50
8	East D Street & Puyallup Avenue	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	23	C	25
9	Portland Avenue E & SR 509 On-Ramp	Uncontrolled	WSDOT	D	AM	—	—	—	—
					PM	F	55	F	77
10	Portland Avenue E & SR 509 Off-Ramp	Signal	WSDOT	D	AM	—	—	—	—
					PM	E	45	F	51
11	Portland Avenue E & Puyallup Avenue	Signal	Tacoma	D	AM	D	54	E	59
					PM	C	27	C	29
12	Portland Avenue E & E 26 th Street	SSSC ^a	Tacoma	D	AM	—	—	—	—
					PM	F	176	F	420
13	Portland Avenue E & E 27 th Street	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	35	C	35
14	Portland Avenue E & E 28 th Street	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	34	C	35

Intersection	Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action		Alternative 3	
					LOS	Delay (seconds)	LOS	Delay (seconds)
15 Port of Tacoma Road & SR 509 Frontage Road	Signal	WSDOT	D	AM	—	—	—	—
				PM	D	44	D	54
16 Port of Tacoma Road & Northbound SR 509 Frontage Road	Signal	WSDOT	D	AM	—	—	—	—
				PM	A	9	A	10
17 Port of Tacoma Road & Pacific Highway	Signal	WSDOT	D	AM	C	25	C	25
				PM	D	50	D	53
18 34 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	B	10	B	11
				PM	—	—	—	—
19 Port of Tacoma Road & I-5 Southbound Ramps	Signal	WSDOT	D	AM	C	34	C	34
				PM	C	24	C	24
20 Port of Tacoma Road & I-5 Northbound Ramps	Signal	WSDOT	D	AM	B	12	B	12
				PM	B	13	B	13
21 Alexander Avenue E & SR 509	Signal	WSDOT	D	AM	F	83	F	88
				PM	E	64	E	66
23 Alexander Avenue E & 12 th Street E	SSSC ^a	Tacoma	D	AM	—	—	—	—
				PM	D	26	E	37
24 Alexander Avenue E & Pacific Highway	Signal	WSDOT	D	AM	—	—	—	—
				PM	C	25	C	26
25 54 th Avenue E & 12 th Street E	Signal	Fife	D	AM	B	15	B	16
				PM	B	17	B	17
26 54 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	D	45	D	48
				PM	E	67	E	69
27 54 th Avenue E & I-5 Southbound Ramps	Signal	WSDOT	E	AM	A	8	A	8
				PM	A	6	A	6
28 54 th Avenue E & I-5 Northbound Ramps	SSSC ^a	WSDOT	E	AM	D	30	D	31
				PM	E	43	E	44

SOURCE: Fehr & Peers 2023

NOTES: **Bold** text indicates location with a significant adverse impact.

a. Side-Street Stop-Control.

b. The pedestrian phases for the north and south approaches for this intersection were removed within the Synchro model to better approximate actual observed and expected gap out time at this intersection, which is anticipated to have little to no pedestrian traffic.

8.2.7 Alternative 4

This section summarizes results of the analysis and transportation impacts for Alternative 4 in 2044. Compared to Alternative 1 (No Action), Alternative 4 would result in growth similar to Alternative 1.

VMT

VMT per service population was calculated for Alternative 4 and is presented in **Table 8-11**. As land use changes under Alternative 4 are minimal, there is no change in VMT per service population compared to the No Action Alternative.

TABLE 8-11 Alternative 4 VMT Summary

Alternative	VMT	Service Population (Jobs + Households)	VMT per Service Population
No Action	1,855,700	25,900	72
Alternative 4	1,961,900	25,700	72

SOURCE: Fehr & Peers 2023

Auto, Freight, & Transit

The average vehicle delay and LOS for each study intersection are summarized in **Table 8-12**. Under Alternative 4, there is no substantive growth in traffic during the peak hours compared to the No Action Alternative.

Under Alternative 4, the following intersections were found to operate below the City of Tacoma’s identified LOS standard:

- Portland Avenue E & E 26th Street

The following intersections were found to operate below WSDOT’s identified LOS standard:

- Portland Avenue E & SR 509 On-Ramp
- Portland Avenue E & SR 509 Off-Ramp
- Alexander Avenue E & SR 509
- 54th Avenue E & Pacific Highway

As there is no substantive growth in traffic volume under Alternative 4, there are no significant impacts identified for auto, freight, or transit under this alternative.

TABLE 8-12 Alternative 4 Intersection LOS and Delay

Intersection		Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action		Alternative 4	
						LOS	Delay (seconds)	LOS	Delay (seconds)
1	Port of Tacoma Road & E 11 th Street	Signal	Tacoma	D	AM	C	28	C	28
					PM	—	—	—	—
2	Port of Tacoma Road & WUT Access	Signal	Tacoma	D	AM	A	10	A	10
					PM	—	—	—	—
3	Port of Tacoma Road & Lincoln Avenue	Signal	Tacoma	D	AM	B	11	B	11
					PM	B	14	B	14
4	Lincoln Avenue Loop & Marc Avenue	Signal	Tacoma	D	AM	B	12	B	12
					PM	—	—	—	—
5	Portland Avenue E & Lincoln Avenue	Signal	Tacoma	D	AM	B	13	B	13
					PM	C	27	C	27
6	Port of Tacoma Road & Marshall Avenue	Signal	Tacoma	D	AM	B	11	B	11
					PM	—	—	—	—
7	Taylor Way & SR 509 ^b	Signal	WSDOT	D	AM	C	29	C	29
					PM	D	44	D	45
8	East D Street & Puyallup Avenue	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	23	C	22
9	Portland Avenue E & SR 509 On-Ramp	Uncontrolled	WSDOT	D	AM	—	—	—	—
					PM	F	55	F	55
10	Portland Avenue E & SR 509 Off-Ramp	Signal	WSDOT	D	AM	—	—	—	—
					PM	E	45	E	44
11	Portland Avenue E & Puyallup Avenue	Signal	Tacoma	D	AM	D	54	D	54
					PM	C	27	C	27
12	Portland Avenue E & E 26 th Street	SSSC ^a	Tacoma	D	AM	—	—	—	—
					PM	F	176	F	196
13	Portland Avenue E & E 27 th Street	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	35	C	35
14	Portland Avenue E & E 28 th Street	Signal	Tacoma	D	AM	—	—	—	—
					PM	C	34	C	34
15	Port of Tacoma Road & SR 509 Off-Ramp	Signal	WSDOT	D	AM	—	—	—	—
					PM	D	44	D	44

Intersection	Control	Jurisdiction	LOS Threshold	Peak Hour	Alternative 1: No Action		Alternative 4	
					LOS	Delay (seconds)	LOS	Delay (seconds)
16 Port of Tacoma Road & Northbound SR 509	Signal	WSDOT	D	AM	—	—	—	—
				PM	A	9	A	9
17 Port of Tacoma Road & Pacific Highway	Signal	WSDOT	D	AM	C	25	C	26
				PM	D	50	D	49
18 34 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	B	10	B	10
				PM	—	—	—	—
19 Port of Tacoma Road & I-5 Southbound Ramps	Signal	WSDOT	D	AM	C	34	C	34
				PM	C	24	C	24
20 Port of Tacoma Road & I-5 Northbound Ramps	Signal	WSDOT	D	AM	B	12	B	12
				PM	B	13	B	13
21 Alexander Avenue E & SR 509	Signal	WSDOT	D	AM	F	83	F	84
				PM	E	64	E	62
23 Alexander Avenue E & 12 th Street E	SSSC ^a	Tacoma	D	AM	—	—	—	—
				PM	D	26	D	26
24 Alexander Avenue E & Pacific Highway	Signal	WSDOT	D	AM	—	—	—	—
				PM	C	25	C	25
25 54 th Avenue E & 12 th Street E	Signal	Fife	D	AM	B	15	B	15
				PM	B	17	B	17
26 54 th Avenue E & Pacific Highway	Signal	WSDOT	D	AM	D	45	D	45
				PM	E	67	E	66
27 54 th Avenue E & I-5 Southbound Ramps	Signal	WSDOT	E	AM	A	8	A	8
				PM	A	6	A	6
28 54 th Avenue E & I-5 Northbound Ramps	SSSC ^a	WSDOT	E	AM	D	30	D	30
				PM	E	43	E	4

SOURCE: Fehr & Peers 2023

NOTES: **Bold** text indicates location with a significant adverse impact.

a. Side-Street Stop-Control.

b. The pedestrian phases for the north and south approaches for this intersection were removed within the Synchro model to better approximate actual observed and expected gap out time at this intersection, which is anticipated to have little to no pedestrian traffic.

8.3 Avoidance, Minimization, and Mitigation Measures

The City of Tacoma is committed to supporting transportation investments to improve access, mobility, and safety to allow the industrial and maritime sector to strengthen and grow.

This section identifies a range of potential mitigation strategies that could be implemented to reduce severity of the adverse impacts of the alternatives identified in the previous section. These include impacts on active transportation, auto, freight, and transit operations, parking, and safety.

8.3.1 Mitigation Measures Common to All Alternatives

Transportation Systems Management and Operations (TSMO)

Transportation systems management and operations (TSMO) is a philosophy that encompasses strategies to optimize the existing transportation system by understanding the root causes of poor performance, improving collaboration, encouraging behavior changes through travel demand management, and using technology to manage how the system operates. TSMO strategies focus on cost-effective, near-term, multimodal improvements to better operate the City's infrastructure and systems.

TSMO strategies can target high-priority roadway users, including freight and transit. Potential strategies include:

- ITS applications such as dynamic message signs to alert travelers to blocking incidents or give travel time information about route choices.
- Truck detection and signal priority to allow traffic signals to recognize an approaching truck so the green light may be extended to let the truck travel through the intersection (providing both freight mobility and safety benefits). It should be noted that these improvements have the potential to delay other road users, including pedestrians trying to use a more comfortable crossing at a signal.
- Wayfinding for trucks to improve route decisions and reduce illegal movements.
- Geometric improvements at intersections to better design for key truck turning movements. These improvements should also consider

the interactions of all vehicles with active mode users, and provide design elements that aim to maximize safety between modes.

- Freight operations management to prioritize freight movements during certain times in certain locations.

Many of these strategies are identified in the *Tideflats and Port of Tacoma ITS Strategic Plan* as solutions that should be implemented in the study area, but they may also be amended by an impending City project to review past planning, determine ITS needs, and then design the ultimate infrastructure for the Tideflats area.

In addition, recent improvements to Taylor Way included ITS improvements, and an upcoming project on Portland Avenue E will include the installation of fiber optic cable, which will position the City to implement ITS strategies along that corridor in the study area.

Travel Demand Management (TDM)

Managing demand for auto travel is an important element of reducing overall congestion impacts that affect auto, freight, transit, and parking demand. There are well-established travel demand management programs in place, including Transportation Management Programs (TMPs), the Commuter Benefit Ordinance, and the state's 1991 legislation that created the Commute Trip Reduction (CTR) program. Because CTR and TMPs typically focus on large employers, the City could pursue expansions of those programs tailored to smaller employers and residential buildings or support the creation of Transportation Management Associations (TMAs).

A TMA is an organization that provides transportation services and information in a defined area (for example, an office or industrial park or a commercial district). TMAs are typically oriented around TDM programs and focused on commuters but can also serve shoppers, hospital visitors, or residents depending on the characteristics of area they serve and the needs of their members. In some cases, TMAs are developed to advance shared goals among members around sustainability, employee retention, and congestion management. Tacoma currently has a TMA in the downtown area (Downtown on The Go). There is local precedent for compelling participation in a TMA through code requirements; however, to fully implement a robust TMA, this would also need to be paired with a budget action to establish a funding and governance structure.

Industrial areas can be challenging for TDM due to the characteristics of workers' schedules and long distance to transit service. For example,

many workers need to commute during off-peak periods for their shifts when transit options are more limited, and workers often live or work relatively far from transit stations and bus stops. Potential TDM measures suited to the study area could include last-mile shuttle systems between key transit nodes and large employers in the area, coordination with Pierce Transit and/or Sound Transit to provide off-peak transit service tailored to shift workers with irregular hours, subsidized vanpools, rideshare matching to limit the number of drive-alone commute trips, and micromobility options such as scooters or bicycles to make last-mile connections. In addition to addressing the unique needs of MICs in terms of commute timing, the City could also coordinate with Pierce Transit through their routine service planning process to explore adding transit service on corridors that serve many industrial and maritime workers.

The City could consider updating its municipal code related to Transportation Management Plans to tailor requirements for TDM measures that are most effective in industrial settings. This may include membership in a TMA, carpool program membership, and discounted or free transit passes and/or car share memberships. For residential buildings, the City could also consider extending Transportation Management Plans or requiring travel options programs.

Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state, has shown that implementation of TDM programs can substantially reduce vehicle trip generation, which in turn reduces congestion for transit, freight, and autos. Reduced auto travel can indirectly mitigate on-street parking impacts. The specific measures described below are all potential projects that the City could consider to modify or expand current strategies. It should be noted that any changes to off-street parking policies would be considered in consultation with stakeholders and in conjunction with improvements to make transit a more competitive option for workers.

- Parking maximums that would limit the number of parking spaces that can be built with new development.
- Review the parking minimums currently in place for possible revisions.
- Review on-street parking management strategies in concert with any adjustment to off-street parking standards to reduce the impact of spillover parking.

- Unbundling of parking to separate parking costs from total property cost, allowing buyers or tenants to forgo buying or leasing parking spaces.
- Increased parking taxes/fees.
- Review and revise transit pass provision programs for employees.

Safety Improvements

Potentially significant impacts on safety conditions have been identified under Alternatives 2 and 3 as both alternatives are expected to result in an increase in the annual number of collisions due to projected increases in trips generated. To mitigate this impact, the City would need to improve the facilities provided for people walking and biking, with particular attention to areas that have safety concerns and a high number of potential conflicts between vulnerable users (bicyclists and pedestrians) and freight traffic.

Representative projects that could improve safety conditions for people walking and biking in the study area include facilities such as sidewalks or asphalt walkways; signals or similar pedestrian hybrid beacons (when either control meets warranting conditions to allow for their consideration) to make crossing roadways easier; treatments such as rectangular rapid flashing beacons to alert drivers to people crossing the street; marked crosswalks when paired with high-visibility and other traffic-calming improvements; curb bulbs or extensions to shorten crossing distances, make people walking more visible to drivers, and encourage slower travel speeds; bicycle lanes (including separated and buffered bicycle lanes); and multi-use trails. This work will be refined and integrated into several upcoming multimodal plans, including the Puyallup Avenue Complete Street project and as part of station planning for the TDLE project, which will include a holistic framework for system improvements. Tacoma also has ongoing safety programs to reduce the number of collisions, benefiting both safety and reliability of the transportation system.

Projects could be implemented through City-led efforts and in partnership with new development. One such potential partnership could be the creation of a safety countermeasure fund that developers would use. This fund would be separate from an impact fee program, and would focus specifically on projects that encourage safe mobility for all modes. This would allow the City to collect safety-related funds as growth is occurring and to distribute these funds to specific safety improvements as they are identified. As part of implementing this fund and any other safety countermeasures, the City could also review and

update its transportation design standards to reflect the safety improvements it would like to see prioritized within the subarea. Any updates to the City's design standards should include design elements and exceptions that balance the need for safe pedestrian and bicycle infrastructure with adequate freight mobility.

In addition to creating a safer walking and riding environment along existing roadways, safety investments within the pedestrian and bicycle environment would encourage travelers to choose walking or biking rather than driving. This creates the secondary benefit of contributing toward mitigation of the auto, freight, transit, and parking impacts by creating safer and more direct routes between destinations within the subarea. More substantial connectivity improvements to create new and more direct crossings of barriers (such as SR 509 and the Puyallup River) could also be considered in further studies and with public engagement to understand the key desire lines for pedestrian travel.

Parking Strategies

The City should continue to encourage and implement programs to manage its available on-street parking such that demand does not routinely exceed supply. The City could also expand on multiple strategies, such as time limits and restricted parking zones. The City could also use time limits to encourage short-term parking for visitors to local businesses on key blocks while allowing longer term parking in other locations that serve industrial users.

The City should also consider potential locations to implement additional off-street truck staging and processing facilities, in addition to implementing targeted mitigations that help manage the influx of trucks at terminal entrances. This would help mitigate the need for trucks to use on-street truck parking facilities, which currently overflow into the travelled way in over-capacity areas. One example of such a mitigation would be the off-dock truck gate and staging yard at the Thorne Road Properties, identified in the Port of Tacoma GCP Traffic Study (2018), which would free-up on-dock space and relieve supply chain congestion, including for freight traffic accessing the terminals.

Restricted parking zones—with complementing resources to enforce those restrictions—could be used to discourage spillover parking and to reserve specific parking areas for large trucks to address issues that arise when overnight parking conflicts with adjacent businesses or complaints regarding trucks parking for long periods of time.

8.3.2 Alternative 2

This section describes the improvements needed to address additional adverse impacts identified for Alternative 2. Improvements identified under Alternative 2 are also expected to improve conditions identified under Alternative 1. Additional engineering study would be required to confirm and design the proposed mitigation measures.

Auto, Transit, and Freight

Four intersections were identified as having significant adverse impacts on auto and freight travel under Alternative 2. The impacts identified at Portland Avenue E & Puyallup Avenue and Portland Avenue E & E 26th Street would also result in a significant adverse impact for transit. The projects needed to improve operations to acceptable based on City standards or operations consistent with the No Action Alternative are described below.

Portland Avenue E & Puyallup Avenue (City of Tacoma): A Synchro evaluation found that additional capacity is needed for the southbound left-turn movement of this intersection. One potential mitigation for this would be adding an additional southbound left-turn lane and implementing protected dual left-turn phasing for this movement would reduce delay from 60 seconds to 44 seconds in the AM peak hour, which would be an improvement from operations under the No Action Alternative. However, the City of Tacoma is currently undergoing planning for the Puyallup to Tacoma Trail project, which is planned to repurpose one of the eastbound travel lanes on Fishing Wars Memorial Bridge for the trail. The City will continue to evaluate the modal needs along the corridor to identify the appropriate balance of right-of-way allocation.

Portland Avenue E & E 26th Street (City of Tacoma): Improving operations at this intersection would require installation of a traffic signal. Before a traffic signal can be installed, signal warrants must be evaluated to determine whether a traffic signal is the appropriate form of intersection control. For this EIS, the signal warrant for peak hour conditions was evaluated using the forecasted traffic volumes for 2044. While this evaluation found that the intersection would meet the peak hour signal warrant in 2044 under Alternative 2, a detailed engineering study is needed to confirm that a traffic signal is the appropriate intersection control at this location. Installation of a traffic signal at this intersection would also support operations for a future TDLE Station in the area.

Portland Avenue E & SR 509 On-Ramp: Implementation of a traffic signal at this intersection would improve operations to LOS A during both peak hours.

Portland Avenue E & SR 509 Off-Ramp: Implementation of a traffic signal at this intersection, which has already been designed through a City project, would improve operations to LOS B during the AM peak hour and LOS A during the PM peak hour.

8.3.3 Alternative 3

This section describes the improvements needed to address additional adverse impacts identified for Alternative 3. Improvements identified under Alternative 3 are also expected to improve conditions identified under Alternative 1. Additional engineering study would be required to confirm and design the proposed mitigation measures.

Auto, Transit, and Freight

Five intersections were identified as having adverse impacts for auto and freight travel under Alternative 3. The increase in delay would also result in an adverse impact for transit at the Portland Avenue E & E 26th Street as well as Portland Avenue E & Puyallup Avenue intersections.

The projects needed to improve operations to acceptable based on City standards or operations consistent with the No Action Alternative are described below.

Portland Avenue E & Puyallup Avenue (City of Tacoma): A Synchro evaluation found that additional capacity is needed for the southbound left-turn movement of this intersection. One potential mitigation for this would be to add an additional southbound left-turn lane and implement protected dual left-turn phasing for this movement. This action would reduce delay under Alternative 3 from 59 seconds to 43 seconds in the AM peak hour, which would be an improvement from operations under the No Action Alternative. However, the City of Tacoma is currently undergoing planning for the Puyallup to Tacoma Trail project, which is planned to repurpose one of the eastbound travel lanes on Fishing Wars Memorial Bridge for the trail. The City will continue to evaluate the modal needs along the corridor to identify the appropriate balance of right-of-way allocation.

As a potential alternative or concurrent mitigation, the City has also considered adding slip ramps to SR 509 along Portland Avenue E to create an eastbound on-ramp and a westbound off-ramp. This could

encourage more traffic, particularly eastbound freight traffic, to enter SR 509 at Portland Avenue E rather than routing through the Portland Avenue E and Puyallup Avenue intersection. This could be implemented in conjunction with signal improvements at the existing Portland Avenue E & SR 509 ramp locations. This mitigation would need to be implemented in coordination with WSDOT.

Portland Avenue E & E 26th Street (City of Tacoma): Improving operations at this intersection would require installation of a traffic signal. For this EIS, the signal warrant for peak hour conditions was evaluated using the forecasted traffic volumes for 2044. While this evaluation found that the intersection would meet the peak hour signal warrant in 2044 under Alternative 3, a detailed engineering study is needed to confirm that a traffic signal is the appropriate intersection control at this intersection. Installation of a traffic signal at this intersection would also support operations for a future TDLE Station in the area.

Alexander Avenue E & 12th Street E (City of Tacoma): A signal warrant for peak hour conditions was evaluated using the forecasted traffic volumes for 2044. However, while this evaluation found that the intersection would meet the peak hour signal warrant in 2044 under Alternative 3, queuing spillback from Alexander Avenue and SR 509 would likely contribute to poor operations at this intersection, and would reduce the effectiveness of a signal here. It is recommended that a detailed engineering study be performed to confirm the appropriate intersection control and configuration at this location, especially given its close proximity to the planned reconstruction and reconfiguration of the Alexander Avenue E and SR 509 intersection, in addition to its proximity to the future TDLE Station in the area.

Portland Avenue E & SR 509 On-Ramp: Implementation of a traffic signal at this intersection would improve operations to LOS A during both peak hours.

Portland Avenue E & SR 509 Off-Ramp: Implementation of a traffic signal at this intersection, which has already been designed through a City project, would improve operations to LOS B during the AM peak hour and LOS A during the PM peak hour.

8.3.4 Alternative 4

As Alternative 4 conditions are anticipated to largely match conditions identified under Alternative 1, no additional adverse impacts were identified for auto, freight, or transit under Alternative 4.

8.4 Significant Unavoidable Adverse Impacts

This section describes the significant and unavoidable adverse impacts on transportation that would occur as a result of implementation of the alternatives. Travel demand and associated congestion are expected to increase over time regardless of the alternative implemented. With respect to the three development alternatives studied in this Draft EIS, potentially significant adverse impacts are identified for vehicle operations, on-street parking, and safety for Alternatives 2 and 3.

Potential mitigation measures for the intersections impacted by the development alternatives are proposed above. If these measures are implemented, it is expected that the intersection impacts could be brought to a less-than-significant level in relation to Alternative 1 (No Action). **Therefore, no significant unavoidable impacts on autos, freight, and transit are expected.**

Parking impacts are expected to be brought to a less-than significant level by implementing a range of possible mitigation strategies, such as those discussed in Section 8.3.1. While there may be short-term impacts as individual development projects are completed (causing on-street parking demand to exceed supply), it is expected that with time-restricted parking zones and restricted parking zones, the available supply can be managed in a way that accommodates demand. **Therefore, no significant unavoidable adverse impacts on parking are expected.**

Significant impacts were identified to safety due to the increased potential for vehicle conflicts (particularly trucks) and rail with vulnerable users. The City can pursue a variety of mitigation measures to improve facilities for people walking and biking and overall safety conditions, in addition to pursuing supplemental funding through federal and state programs as well as partnering with developers to establish a safety countermeasure fund for the subarea. This safety countermeasure fund would provide flexibility to distribute funds to safety improvements as they are identified, instead of working to address all network gaps at once. With these programs and mitigations, it is expected that the City will be able to address safety concerns as they arise or as they are anticipated. **Therefore, no significant unavoidable adverse impacts on safety are expected.**



CHAPTER 9 Public Services

Public services evaluated in this chapter include police, fire/emergency medical services (EMS), and parks and recreation.

9.1 Affected Environment

This section documents existing levels of service and estimated needs and demand for police services, fire/emergency medical response, and parks and recreation facilities serving the study area. **Table 9-1** lists the public services analyzed here and notes what service plans or capital planning documents guide those services.

9.1.1 Police

Law Enforcement Providers

Law enforcement in the Tideflats study area is primarily provided by the Tacoma Police Department (TPD), with support from adjacent jurisdictions and intergovernmental entities. The Fife Police Department provides support to the TPD as requested. The Puyallup Tribal Law Enforcement also provides law enforcement, and the Port of Tacoma provides security support in the Tideflats study area. In addition, Road Use Compliance Officers from Public Works and Transportation can also be present, with a focus on monitoring and enforcing certain laws and ordinances specific to commercial trucking and parking activities occurring within and/or affect the public rights-of-way within the Tideflats study area.

TABLE 9-1 Public Services Included in the Affected Environment

Service	Provider	Guiding Documents
Police Protection	City of Tacoma Police Department Puyallup Tribe of Indians	<ul style="list-style-type: none"> Tacoma Police Department Calls for Service Washington Association of Sheriffs and Police Chiefs Crime in Washington Annual Reports, 2015–2019 Tacoma Capital Facilities Program, 2021–2026 One Tacoma Comprehensive Plan, 2019
Port Protection	Port of Tacoma	<ul style="list-style-type: none"> One Tacoma Comprehensive Plan, 2019 Tacoma Capital Facilities Program, 2021–2026
Fire/EMS Protection	City of Tacoma Fire Department	<ul style="list-style-type: none"> Tacoma Fire Department Annual Reports, 2015–2019 Tacoma Capital Facilities Program, 2021–2026 (proposed) One Tacoma Comprehensive Plan, 2019 Tacoma Fire Department Community Risk Assessment and Standards of Cover Study, 2023
Parks	City of Tacoma Public Works Department and Metro Parks Tacoma	<ul style="list-style-type: none"> Metro Parks Tacoma Strategic Master Plan, 2018 Metro Parks Tacoma 2019–2020 Budget and 2021–2022 Budget, 2023-2024 Budget Tacoma Capital Facilities Program, 2021–2026 Passive Open Space Restoration Plan, 2016 One Tacoma Comprehensive Plan, 2019

SOURCE: BERK 2020

Tacoma Police Department

The TPD is focused on community-oriented policing, relationship-building, and reducing crime through effective partnerships and is organized into three bureaus (Tacoma Police Department, 2020):

- **The Administrative Services Bureau** oversees the Internal Affairs Section, which is responsible for the investigation of police conduct and citizen complaints, and the Support Services Division.
- **The Investigations Bureau** conducts follow-up investigations of crimes against persons and property, including oversight of the Hazardous Environment Team
- **The Operations Bureau** is comprised of the Patrol Division and Community Policing Division. The Patrol Division provides 24/7 patrol coverage within the City of Tacoma, including the Tideflats study area. The bureau oversees Homeland Security which includes the Specialty Teams such as SWAT, Bomb Squad, Special Response Team, Marine Services Unit, K-9, Search and Rescue, and Dive Team.

TPD’s service area is comprised of four sections (Sectors), each divided into four subsections (Districts) within the city. The Tideflats study area falls within District 1–4 in Sector 1.

Fife Police Department

Over the years, the Fife Police Department has provided law enforcement support for the Port of Tacoma, with the Tacoma Police Department as the primary agency in the subarea. Support has included assistance on various protest activities, homeland security-related issues, and street-racing events.

Port of Tacoma

Port Security is a proprietary noncommissioned workforce. Officers monitor facilities, rail, and road systems; respond to calls; and have authority to access all marine terminals and cargo at the port. The port patrol coordinates with many government agencies that also provide public services in the Tideflats study area. The authority of each Port Security Officer is derived from the duty of the Port to protect its assets and operations, the applicable chapters of the Revised Code of Washington (RCW), and various provisions of federal law.

Tribal Law Enforcement

Enforcement officers commissioned by the Puyallup Tribe also enforce Puyallup Tribal Law over the native population and tribal lands within the subarea. Puyallup Tribal Police officers are also cross-deputized with the City of Tacoma, so that arrests can be made under City jurisdiction; offenders are then turned over to the local authorities to be processed. See **Exhibit 9-1**.

Current Conditions

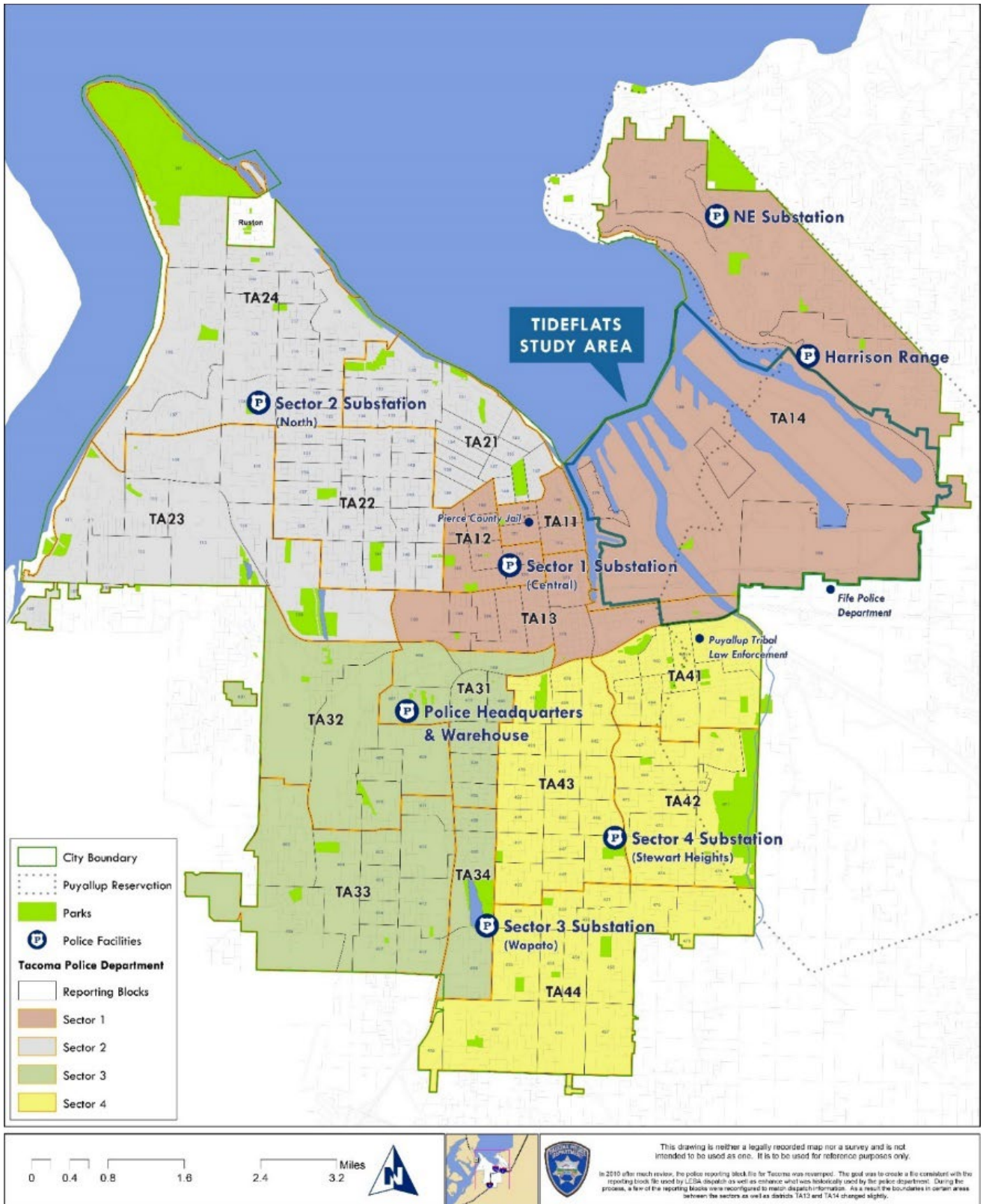
Personnel

For the 2019–2020 biennium, TPD had 406.3 authorized full-time equivalent (FTE) employees including 207.3 FTE patrol service officers, 19 homicide or special assault officers, five homeless outreach team members, and several administrative or support service specialists (City of Tacoma 2018). Emergency calls for Tacoma police are dispatched through South Sound 911, a regional dispatch center for Pierce County.

Calls for Service and Offenses

The TPD's call load continues to increase as development occurs.

Table 9-2 lists districtwide calls for police service in Tacoma over the last 5 years (2015–2019).



SOURCES: Pierce County GIS 2020; City of Tacoma 2020a; BERK 2020

EXHIBIT 9-1 Tacoma Police Department Service Sectors and Facilities, 2020

TABLE 9-2 Five-Year Calls for Service, Group A Offenses, and Group B Arrests, 2015–2019

	2015	2016	2017	2018	2019	5-Year Average
Population	202,300	206,100	208,100	209,100	211,400	
Citywide Calls for Service	N/A ^a	192,156	189,595	192,358	195,948	0.92 per capita (923 per 1,000 residents)
Tideflats Study Area Calls for Service	N/A ^a	5,290	6,621	7,040	7,309	N/A
Group A Offenses	27,708	29,484	26,250	26,957	27,968	0.13 per capita (133.48 per 1,000 residents)
Group B Arrests	1,895	1,607	1,794	2,260	2,473	0.01 per capita (9.66 1,000 residents)

SOURCES: Personal Communication with Adam Nolan and Tacoma Police Department 2023; WASPC 2015, 2016, 2017, 2018, 2019; OFM 2020; BERK 2020

a. Data are not available for calls to service in 2015.

Police responded to 195,948 calls for service districtwide in 2019, a 2% increase over 2016. In the Tideflats study area, police responded to 7,309 calls for service in 2019, a 38% increase over 2016. Between 2016 and 2019, the Department responded to an average of 192,514 calls districtwide and an average of 6,565 calls in the Tideflats Subarea. Table 9-2 also shows Group A offenses and Group B arrests from 2015–2019. The 5-year average Group A offenses and Group B arrests committed per 1,000 residents were 0.13 and 0.01, respectively, or 133.48 Group A offenses per 1,000 residents and 9.66 Group B arrests per 1,000 residents (WASPC 2015, 2016, 2017, 2018, 2019).¹

Capital Facilities and Equipment

TPD facilities include the Police Headquarters located at 3701 S Pine Street, five substations, a firing range, and a warehouse (Exhibit 9-1 and **Table 9-3**). Each of the five substations is staffed by a Sector Lieutenant and Community Liaison Officers. Each facility has a public meeting space, and some sites also have a shared satellite office area for police partners. All facilities are within Tacoma city limits with a combined square footage of 141,392 feet (City of Tacoma 2020a).

¹ The National Incident-Based Reporting System (NIBRS) divides offenses into two categories: Group A – Incident and Group B – Arrest. Group A offenses collected in the NIBRS program are: Arson, Assault, Bribery, Burglary, Counterfeiting/Forgery, Destruction/Damage/Vandalism of Property, Drug/Narcotic Offenses, Embezzlement, Extortion/Blackmail, Fraud Offenses, Gambling Offenses, Homicide Offenses, Human Trafficking Offenses, Kidnapping/Abduction, Larceny/Theft Offenses, Motor Vehicle Theft, Pornography/Obscene Material Offenses, Prostitution Offenses, Robbery, Sex Offenses, Non-Forcible Sex Offenses, Stolen Property Offenses, and Weapon Law Violations; in Washington State, an additional Group A offense is collected: Violation of No Contact/Protection Order. Group A offenses include statistical data on the incident, all offenses committed, property involved, weapons involved, victim and offender demographics, arrest information, and clearance status. Group B offenses, for which only arrest data are collected, include: Bad Checks; Curfew/Loitering/Vagrancy Violations; Disorderly Conduct; Driving Under the Influence; Drunkenness; Non-Violent Family Offenses; Liquor Law Violations; Peeping Tom; Trespass of Real Property; and All Other Non-Traffic Offenses.

The Central and Northeast Substations are closest to the Tideflats study area (Exhibit 9-1).

TABLE 9-3 Existing Law Enforcement Facilities, 2020

Facility	Location	Size or Capacity (square feet)
Police Headquarters	3701 S Pine Street	72,740
Sector 1 Substation (Central)	1524 MLK Way	3,600
Sector 2 Substation (North)	5136 N 26th Street	3,600
Sector 3 Substation (Wapato)	1501 S 72nd Street	3,600
Sector 4 Substation (Stewart Heights)	400 E 56th Street	3,600
Northeast Substation	4731 Norpoint Way NE	3,600
Harrison Range	101 McMurray Road NE	3,800
Police/Warehouse	3639 S Pine Street	46,852
		Total: 141,392

SOURCE: City of Tacoma 2020a

The TPD holds those lawfully in the custody of police at the Pierce County Sheriff’s Department Corrections Bureau, a direct supervision jail located at 910 Tacoma Ave S between S 9th Street and S 11th Street (Exhibit 9-1). Otherwise known as the Pierce County Jail, the Corrections Bureau has an operational capacity for 1,700 inmates and currently employs approximately 300 correctional staff. The Pierce County Jail is made of two facilities: “New Jail” and “Main Jail.” The New Jail was built in 2003 and the Main Jail was built in 1985. In addition, there is the Northwest ICE Processing Center, otherwise known as the Northwest Detention Center, a privately run detention center operated on behalf of the U.S. Immigration and Customs Enforcement. It has a capacity of 1,575 inmates and is located at 1623 East J Street in the Tideflats study area.

The Puyallup Tribe’s Law Enforcement office and a Fife Police station are located to the south of the Tideflats study area (Exhibit 9-1).

Police vehicles are managed by the City of Tacoma’s Public Works Facilities Division. The Facilities Division manages approximately 860 General Government non-utility vehicles (including police vehicles), nearly half of which are currently overdue for replacement (City of Tacoma 2018).

Recent Projects, Planned Improvements, and Identified Future Needs

Several projects were recently completed, are currently under way, or are planned in the City of Tacoma’s 2021–2026 Capital Facilities Plan (CFP) to improve police services (City of Tacoma 2020a). Below are relevant projects to the Tideflats study area:

- **Tacoma Police Substations:** All exterior lighting fixtures at the five substations were replaced from high wattage lamps to light emitting diode (LED).

Nearly half of the City of Tacoma’s General Government non-utility vehicles (including police vehicles) are currently overdue for replacement. Vehicle replacement cycles that are too long lead to higher operating costs and increased vehicle idleness. Ideal vehicle replacement cycles aim to minimize the overall total cost of ownership by balancing capital replacement cost and operating costs. Public Works plans to work with the Office of Budget and Management to develop strategies and identify funding to reinstate the fleet replacement program. Public Works also plans to track the average age of the fleet in relation to optimal replacement age on an annual basis (City of Tacoma 2018).

Existing Policies and Regulations

Tacoma Municipal Code and Puyallup Tribal Law

The TPD enforces and is subject to various City of Tacoma regulations, such as Title 7, Police; Title 8, Public Safety; and Title 11, Traffic.

Enforcement officers commissioned by the Puyallup Tribe enforce various Puyallup Tribal Law regulations, such as Title 4, Courts and Procedure, and Title 5, Crimes and Offenses.

Level of Service

One Tacoma Public Facilities and Services Element Policy PFS-4.3 establishes a level of service (LOS) standard of 288.58 square feet of law enforcement facility space per 1,000 people, which is not subject to Tacoma’s concurrency standard (City of Tacoma 2019b). Based on an estimated city population of 213,300 in 2020 (OFM 2020), the City would require 61,554 square feet of building space to meet its adopted standard. The City currently exceeds this standard with an existing space allocation of 141,392 square feet (see Table 9-3). According to *One Tacoma*, the City will consider expanding existing facilities or constructing new facilities as needed to meet projected public safety needs.

Tacoma Police Department Mission and Values

TPD's mission statement is as follows:

To create a safe and secure environment in which to live, work, and visit by working together with the community, enforcing the law in a fair and impartial manner, preserving the peace and order in our neighborhoods, and safeguarding our Constitutional guarantees.

TPD also has seven core values:

- Act with Integrity
- Respect for Our Employees and Citizens
- Service to Our Community
- Accountability for Our Actions and Results
- Team for the Common Good
- Innovate to Better Serve
- Reverence for the Law

Tacoma 2025 Goals and Performance Measures

Tacoma 2025 is the City's strategic plan and vision developed in 2015. It sets the strategy for the entire City of Tacoma and is being incorporated into every major planning process, including *One Tacoma* and the City budget. TPD is specifically identified as a "City Champion" for the health and safety focus area. The Tacoma 2025 health and safety community priorities are to improve neighborhood safety, increase active living, and improve overall health (City of Tacoma 2015).

TPD developed four goals and performances measures to help the City track its progress towards the vision set in *Tacoma 2025* (City of Tacoma 2018).

1. **Diversity of Police Force:** To increase the diversity of the Department, TPD will employ new hiring and recruitment strategies to increase the diversity of the Police Department workforce by 25% to better reflect the diversity of the community by 2025.
2. **Public Trust and Community Relationships:** To increase public trust and community relationships, TPD will increase community outreach to develop partnerships, build public trust, and promote

authentic engagement with a focus on underserved communities.
TPD will increase its community outreach by 20% by 2025.

3. **Community Feels Safer:** To improve safety, TPD will work to increase city residents' perception of safety in the community 20% by 2025.
4. **Positive Relationships with Youth:** To build meaningful relationships with youth, TPD will employ strategies to expand youth outreach by 25% by 2025.

9.1.2 Fire

Fire protection and emergency medical services (EMS) in the Tideflats study area are provided by the Tacoma Fire Department (TFD). The TFD is organized into two bureaus with corresponding divisions (City of Tacoma 2020a):

- **The Operations Bureau** oversees the Fire Suppression, Emergency Medical Services, Special Operations, and Fire Communications Center divisions. The Bureau is primarily responsible for providing fire, medical, hazardous materials, marine, and technical rescue services.
- **The Administration Bureau** oversees the Emergency Management, Fire Prevention, and Training divisions. Maintained by the Emergency Management division, the Comprehensive Emergency Management Program oversees the City's efforts to prepare for, mitigate against, respond to, and recover from disasters or major emergencies affecting the community. Fire Prevention staff conduct technical inspections required for hazardous and high-occupancy buildings (such as hospitals and multi-family apartment buildings), investigate fires, issue permits for fire protection systems, and review new construction plans for adherence to fire safety codes. The Training Division is responsible for designing, delivering, and documenting all educational programs involving department personnel.

The TFD serves the cities of Tacoma, Fife, Fircrest, and the unincorporated area of Pierce County protected by Pierce County Fire District 10. The Puyallup Tribe of Indians also reimburses TFD for emergency services from 2% Community Impact funds. The service area covers 72 square miles within the city limits and contract areas, 44 miles of shoreline, and 25 square miles of saltwater (TFD 2020a). TFD's Marine Division serves 32 nautical miles of saltwater shoreline, including the Narrows, Commencement Bay, the Tideflats, and the Port of Tacoma.

Current Conditions

Personnel

As of 2022, the TFD employed 504 staff, including 445 commissioned personnel and 59 non-commissioned personnel (TFD 2022). Stations are staffed by three battalion chiefs, 16 engine companies, five medic companies, seven aid car companies (three are peak time), four ladder companies, and one safety officer. Operations personnel also cross-staff two fireboats, one hazardous materials team, and one technical rescue team. TFD stations are staffed daily districtwide by a minimum of 79 fire station personnel 24 hours per day (TFD 2022).

Firefighters assigned to engine, medic, aid car, and ladder companies serve as first-responders to all emergency incidents, including structure, vehicle, and brush fires. The EMS unit, headed by a medical director, is responsible for administering a two-tiered system of pre-hospital emergency medical care and transport—including Advanced Life Support (ALS) and Basic Life Support (BLS) units—and first responder engine, squad, aid car, and ladder companies; paramedics provide advanced life support treatment and patient transport to an emergency medical facility. In 2019, firefighter/paramedics staffed five medic companies and three ALS engines (TFD 2022). When not responding to alarms, firefighters have a variety of other duties, including basic fire code inspections (for residential, commercial, and industrial buildings), pre-fire planning, community presentations on fire prevention, disaster preparedness, and other public safety issues (TFD 2020b).

Special teams respond to technical rescue, hazardous material, and marine incidents. They also respond to all emergency medical incidents and initiate medical treatment and patient rescue before paramedics arrive. All Tacoma firefighters are trained to the Hazmat Operations level, with over 20 firefighters certified to the Technical Level. The Technical Rescue Team is comprised of 24 technician-level personnel and is supported by 50 personnel trained to the Technical Rescue Operations level (TFD 2022).

Within the Administration Bureau, emergency management staff coordinate departmental efforts citywide to ensure continued governmental operations during disasters, maintain the City's Comprehensive Emergency Management Plan (CEMP), and provide education and training to residents and City of Tacoma employees on disaster preparedness. This group also interfaces with external organizations, including state and federal agencies, to provide a coordinated response and obtain additional resources when necessary.

Fire Prevention staff conduct technical inspections required for hazardous and high-occupancy buildings, such as hospitals and multi-family apartment buildings. Personnel within this division investigate fires, issue permits for fire protection systems, and review new construction plans for adherence to fire safety codes. Training Division staff are responsible for training all new firefighters and conducting ongoing in-service training for all members of TFD; activities of the Training Division are driven by the specific internal needs of TFD and the regulatory requirements of external agencies (TFD 2020a, 2022).

TFD also operates the Tacoma Fire Communications Center (TFC), a 911 call center providing initial dispatch and emergency incident communications for the Department (City of Tacoma 2020a). The center is staffed with 17 commissioned personnel, all certified as emergency medical technicians and emergency medical dispatchers. TFC dispatches the closest available appropriate resources to ensure community members are receiving the highest level of care in the shortest amount of time to mitigate an incident (TFD 2022).

Response Time

Improving response times is critical for the Tacoma Fire Department to offer adequate availability for serious fires and events. **Table 9-4** shows that TFD’s response times greatly exceed best practice measures.

TABLE 9-4 TFD Response Performance Summary, 2021

Response Component	Best Practice	90 th Percentile Performance	Performance versus Best Practice and Current Goal
Call Processing/Dispatch	1:30	1:57	+ 0:27
Crew Turnout	2:00	2:10	+ 0:10
First-Unit Travel	4:00	7:45	+ 3:45
First-Unit Call to Arrival	7:30	11:08	+ 3:38
ERF Call to Arrival	11:30	14:51	+ 3:21

SOURCE: TFD 2023

All travel times need to be reduced to varying degrees. However, travel time poses a significant problem. No station area in the city met the goal of 4:00 minutes for 90% of the incidents. With traffic congestion, the travel time is only lengthened, decreasing road mile coverage by 18%. However, the city’s street design also contributes to this congestion and increased travel time. The projected population

growth demand in the city is expected to further strain department resource capacity and increase response time.

Station 5, which services the Tideflats Subarea, has the highest travel time, with 9:00 minutes for its 90% travel time. Station 6 also has a high travel time, at 7:54 minutes (TFD 2023).; however, Station 6 has limited equipment, housing only an ambulance and no fire engine or ladder truck, which constrains its service capabilities within the subarea. In addition, parts of the Tideflats Subarea cannot be adequately served due to fire station location, traffic congestion, and reduced access to area limited by waterways, rails, bridges, and roadway closures. Parts of the Tideflats underserved include the areas between Stations 5 and 6. The models show that these specific areas within the Tideflats Subarea would not see service within 4 minutes, and may only see service within 8 minutes if the roads are uncongested.

Calls for Service

The number of calls TFD responds to continues to increase as development occurs. TFD reports on two distinct sets of call data: incidents by initial dispatch type and incidents by the final situation found. Departmental activities are best understood by evaluating both workload (dispatched incidents) and what services were provided (final situation found). Workload data are critical for establishing appropriate staffing levels and the necessary resources to meet requests for emergency service. Final situation found data most accurately explain the frequency of various types of incidents that occur within the community and guide prevention efforts. Firefighters responded to 49,172 fire and EMS-related calls districtwide in 2022, a 3.5% increase over 2017 (**Table 9-5**).

Most calls each year are for EMS, whether considering initial dispatch type or the determined final situation (**Exhibit 9-2**). About two-thirds of calls each year were for EMS incidents (34,723 incidents or 71% in 2022 serving 36,307 patients).² The top five reasons for requesting help in 2022 were getting hurt, feeling sick, breathing problems, heart issues, and losing consciousness (TFD 2022).

² Some EMS incidents had multiple patients, so the patient count is greater than the total EMS incidents.

TABLE 9-5 Six-Year Districtwide Calls by Initial Dispatch and Final Situation, 2017–2022

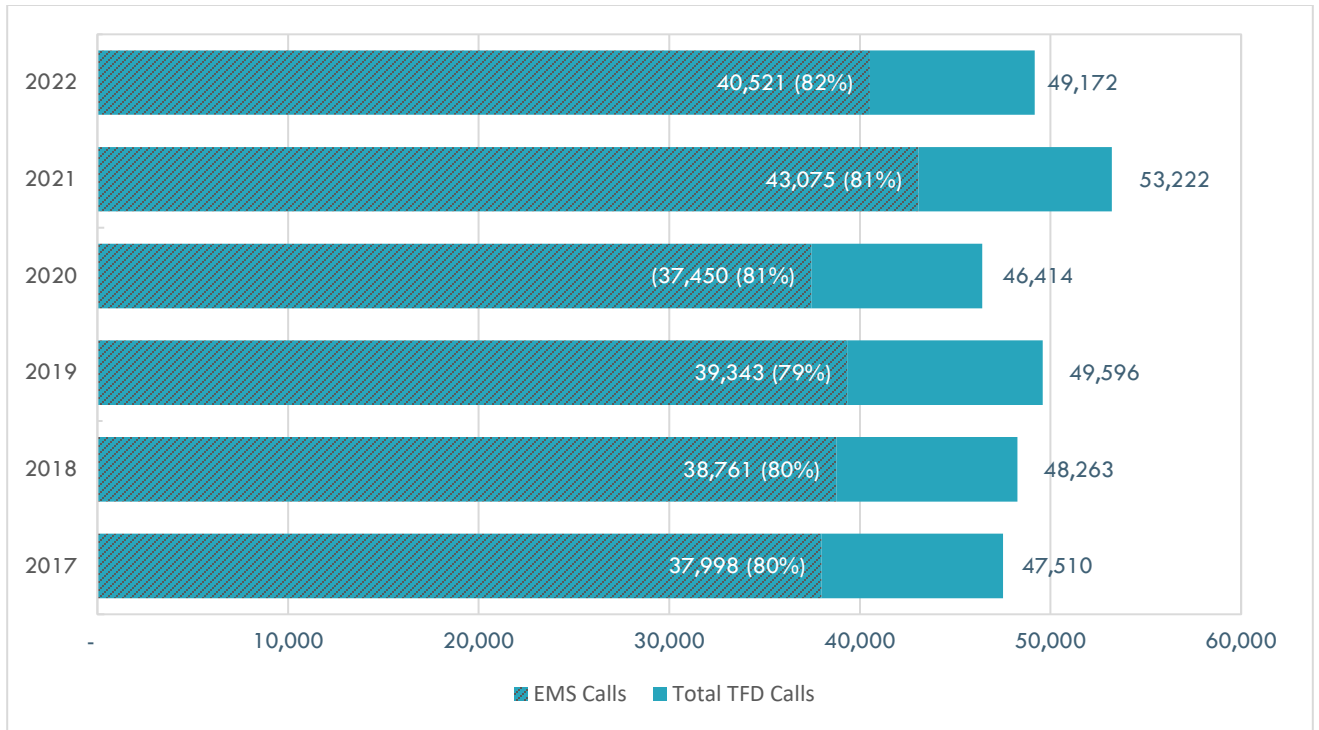
Dispatch Type	2017	2018	2019	2020	2021	2022 ^a
INITIAL DISPATCH						
Fire Auto/Alarm	4,364	4,613	4,587	4,801	5,939	3,668
EMS	37,998	38,761	39,890	37,504	43,078	40,521
Other ^a	5,148	4,889	5,118	4,109	4,205	4,983
Total Initial Dispatch	47,510	48,263	49,595	46,414	53,222	49,172
FINAL SITUATION						
Fire Auto/Alarm	1,298	1,476	1,433	1,716	2,295	2,500
EMS	31,516	32,381	33,404	31,403	34,295	34,723
Other ^a	14,696	14,396	14,758	13,655	16,558	11,949
Total Final Situation	47,510	48,253	49,595	46,774	53,222	49,172

SOURCE: TFD 2022

a. Examples of “other” incidents include search & rescue, hazardous conditions, technical rescue, hazardous materials, and investigations only.

Community members also called upon TFD to extinguish 2,500 fires in 2019, an average of six times per day. Despite notoriously “rainy” Northwest weather, most fires occurred outdoors (e.g., grass, brush, and trees) in the summer months; fire calls in 2022 included 1,983 outdoor fires or illegal burnings, 261 structural fires, and 256 vehicle fires (TFD 2022).³ Investigators from the Prevention Division consulted with field crews 216 times and were dispatched to investigate the origin and cause of 227 of the 2,500 fires in 2022 (TFD 2022). Fire Inspectors also conducted more than 7,000 life safety inspections, processed 6,926 confidence system tests, and issued 521 fire code permits (TFD 2022).

³ Some fire incidents involved more than one of these type codes, so the total is greater than the dispatched by final situation found.



SOURCES: TFD 2022; BERK 2023

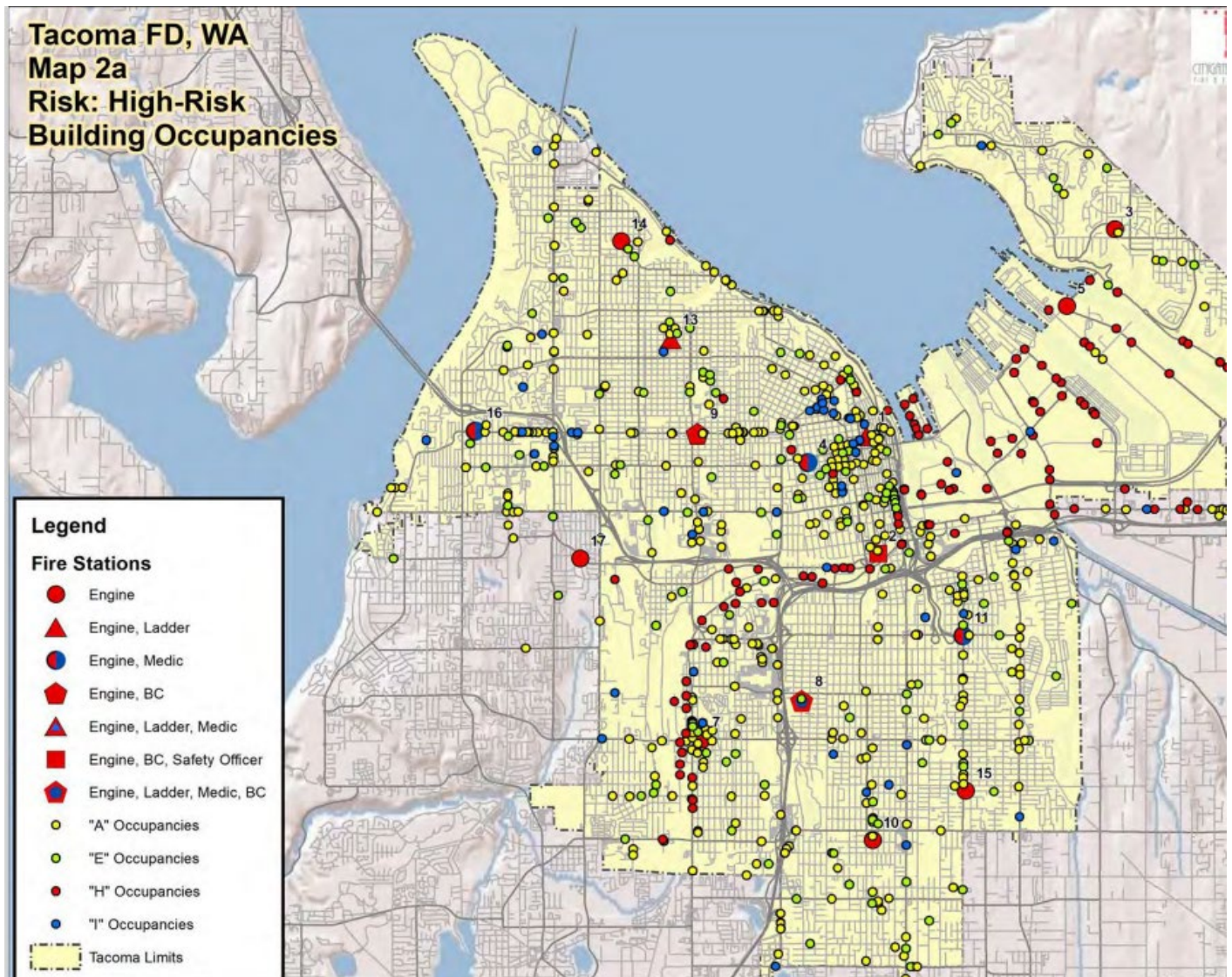
NOTE: EMS calls are included in the total TFD calls for service. Information presented is based on the dispatched incidents.

EXHIBIT 9-2 Six-Year Total TFD Calls for Service and EMS Call History (Dispatched Incidents), 2017–2022

Building Inspections, Plan Reviews, and Code Enforcement

The Fire Prevention Division reviews plans for new construction for adherence to the fire and life safety codes related to their fire protection systems. Permits are issued for fire protection systems and other construction-related activities. High-risk structures or activities such as large public assemblies, the use of explosives, pyrotechnics, liquefied gas, and hazardous materials are managed through the permitting and inspecting processes. Districtwide, TFD processed 2,060 permits in 2022, of which 397 were fire protection permits, 1,563 were building and site permits, and 100 were land use permits (TFD 2022).

The Tideflats study area is the highest risk zone for hazardous materials incidents in the city, largely due to its manufacturing and industrial operations (TFD 2016) as one of the significant industrial zones in the city. The Port of Tacoma has a fixed hazardous materials risk, due to a Liquefied Natural Gas facility, an oil-refinery, a tank farm, and 14 miles of pipeline. New construction in the Tacoma Tideflats frequently also includes high-risk activities, such as the use of hazardous materials. The Tideflats Subarea has one of the highest concentrations of high-hazard occupancies, as shown in **Exhibit 9-3**.



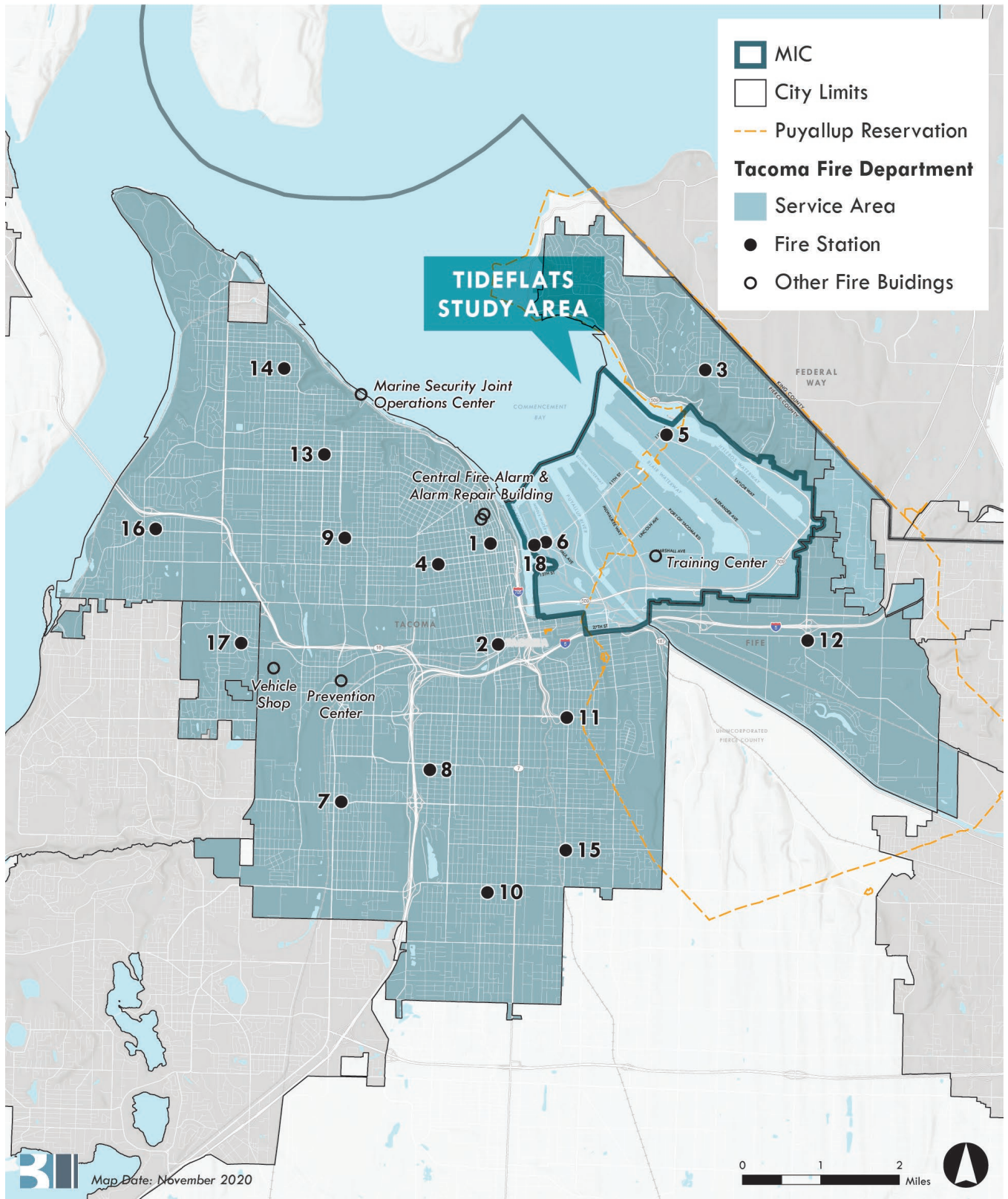
SOURCE: TFD 2023

EXHIBIT 9-3 Tacoma Fire Department High-Risk Building Occupancies (2021)

Stations 5 and 6 are at moderate to high risk of responding to a hazardous materials hazard.

Capital Facilities and Equipment

TFD’s inventory of fire assets includes 17 fire stations, a marine security joint operations center, an alarm repair building, a central fire alarm, a training center, a vehicle shop, a prevention center, and 36 fire apparatus (**Exhibit 9-4** and **Table 9-6**). Fire buildings total nearly 170,000 square feet of space, and several fire stations are listed on the Local and National Register of Historic Places. Fire Stations 5 and 6 and the training center are located within the Tideflats study area.



SOURCES: Pierce County GIS 2020; TFD 2020b; City of Tacoma 2020a; BERK 2020, 2024

EXHIBIT 9-4 Tacoma Fire Department Service Area and Fire Buildings, 2020

TABLE 9-6 Inventory of Existing Fire Apparatus, 2020

Description	Location	Size or Capacity (units)
Fire Ladder Trucks	Stations 1, 12, 13	3
Fire Tower Truck	Station 8	1
Fire Engines	Stations 1–5, 7–17	16
Fireboats ^a	Station 18, Yacht Club	2
Battalion Chief Command Unit	Stations 2, 8, 9	3
Special Air Unit ^b	Station 17	1
Hazardous Materials Unit ^c	Station 12	1
Water Tender Unit	Station 5	1
Tech Rescue Support Vehicle ^d	Station 8	1
Emergency Medical Service Vehicle	Stations 2, 4, 8, 11, 16	5
Brush Rig	Station 15	1
Full-Time Aid Cars	Stations 6, 8, 9, 12	4
Peak-Hour Aid Cars ^e	Stations 11 and 17 and TPD Station	3
		Total: 42 Units

SOURCES: City of Tacoma 2020a, 2023

- a. TFD’s Marine Division fleet consists of a rapid response boat (the *Destiny*), and a 50-foot Metal Craft aluminum fireboat (the *Defiance*). The Fireboats are cross-staffed with the crew of Engine 14.
- b. Special Air Unit 42 is cross-staffed from crew members of Engine 17.
- c. HazMat Unit 44 is cross-staffed with staff from Station 12.
- d. Tech Rescue Support Vehicle is cross-staffed with crew of Engine 8 and Tower 2 at Station 8.
- e. There is a peak-hour aid car running out of the Tacoma Police Station at 1501 S 72nd Street.

Recent Projects, Planned Improvements, and Identified Future Needs

Planned and existing industrial development in the Tideflats study area has previously demonstrated a need for enhanced public safety services. In addition, the average age of TFD’s 26 facilities is 68 years, and more than half of TFD’s buildings need to be remodeled or replaced based on preliminary assessments by TFD and Public Works – many facilities need seismic enhancements, are inefficient or obsolete, and lack capacity for future growth.

Three major projects have been recently completed or are currently under way or planned in the City of Tacoma’s 2021–2026 CFP to improve fire and emergency services (City of Tacoma 2020a).

- **Fire Station 5 (Tideflats):** The City of Tacoma recently completed construction on a new fire station (Station 5) at 3510 E 11th Street to provide fire response, EMS, and hazardous materials capabilities in the port area. Completed in April 2021, Station 5 provides services to the Port of Tacoma and other industries in the Tideflats.
- **TFD Facility Master Plan:** In 2022, the City issued a Request for Proposals to support the Facilities Master Plan, which is in progress. The TFD Facility Master Plan will develop a comprehensive long-term facilities plan to address fire and EMS service delivery and facility needs as Tacoma and the surrounding areas grow. TFD and Public Works started developing the plan during the 2019–2020 biennium, suggesting that more than half of TFD’s buildings need to be remodeled or replaced. Next steps will aim to develop a strategy to prioritize renovation and upgrade projects to begin the long-term effort of modernizing TFD, its facilities, and its future emergency management systems.
- **Community Risk Assessment and Standards of Cover Study:** in 2023, TFD shared a report to update its 2009 study and assess the adequacy of the City’s fire services facility locations. Its performance findings show a critical need to lower its response times, with travel time significantly exceeding its current performance goal of 4:00 minutes. The report also conducted a community risk assessment. Station 5, which services the Tideflats Subarea, sees moderate to high risks related to almost all possible hazards, yet it has the highest travel time. Station 6 sees low to moderate risk levels. See **Table 9-7**.

TABLE 9-7 Overall Risk By Hazard (Risk Planning Zone) – Stations 5 and 6

Hazard	Station 5 Risk Level	Station 6 Risk Level
Building Fire	Moderate	Moderate
Vegetation/Wildland Fire	Moderate	Low
Medical Emergency	High	Moderate
Hazardous Material	High	Moderate
Technical Rescue	Moderate	Moderate
Marine Incident	Low	Low

SOURCE: TFD 2023

The City of Tacoma is also currently considering if fire impact fees could help meet the need for additional fire protection infrastructure generated by new development. On September 11, 2018, staff from the Public Works, Fire, and Legal departments presented information on impact fees to City Council. Council concurred with staff recommendations that additional work be conducted to evaluate how an impact fee program should be tailored to meet the needs of the City of Tacoma, including phase-in periods, the types of fees collected, the total cost to development, and whether or not geography is a consideration (City of Tacoma 2020b). In November 2021, consultants presented on a City of Tacoma Impact Fee Framework, with steps on how to develop and implement an impact fee program should the City choose to move forward.

The 2021–2026 CFP proposes a desired future project to provide for improvements to TFD’s portfolio of facilities, ranging from repair and replacements, to renovations, to new facilities—the project is unfunded and expected to cost about \$185 million (City of Tacoma 2020a).

Existing Policies and Regulations

Tacoma Municipal Code

All new development is required to meet City of Tacoma development regulations as well as the International Building Code and International Fire Code (IFC). Rules governing fire prevention in the State of Washington and the City of Tacoma are addressed in the IFC with state adopted amendments in [WAC Chapter 51-54A](#). In addition to the requirements detailed in the 2021 IFC, the City of Tacoma has adopted its own local amendments found in Tacoma Municipal Code Title 3, Fire, Chapter 3.02. The TFD enforces and is subject to various City of Tacoma regulations, such as Title 3, Fire; Title 4, Harbor Code, Title 8, Public Safety; Title 11, Traffic; and Title 13, Land Use Regulatory Code.

Level of Service (LOS)

One Tacoma Public Facilities and Services Element Policy PFS-4.3 establishes an LOS standard of 0.109 apparatus per 1,000 people, which is not subject to Tacoma’s concurrency standard (City of Tacoma 2019a). However, the TFD is currently revisiting this LOS metric. Based on an estimated service area population of 231,300 in 2020,⁴ TFD

⁴ The City of Tacoma’s estimated population is 213,300 as of April 1, 2020 (OFM 2020). TFD also provides contracted fire and EMS protection to Fircrest, Fife, and Pierce County Fire District 10. These communities had a cumulative service population of approximately 20,000 in 2020 (TFD 2020a).

would require a little over 25 apparatus to meet its adopted standard. TFD currently meets this standard, with a total of 42 apparatus (see Table 9-6).

However, the LOS metric assumes appropriate staffing levels for the apparatus, which affects the operational capacity of TFD. As of late 2023, fewer than half of the apparatus were fully staffed (TFD 2024), affecting their capability to adequately respond to all calls and deliver sufficient levels of service. A recommendation includes increasing staffing for fire engine and ladder trucks from three to four personnel per day (TFD 2023) to meet minimum staffing deployment requirements⁵ (NFPA 2020).

Tacoma 2025 Goals and Performance Measures

Tacoma 2025 sets the strategy for the entire City of Tacoma and is being incorporated into every major planning process, including *One Tacoma* and the City budget. TFD is specifically identified as a “City Champion” for the health and safety focus area. The *Tacoma 2025* health and safety community priorities are to improve neighborhood safety, increase active living, and improve overall health (City of Tacoma 2015).

TFD developed four goals and performances measures to help the City track its progress towards the vision set in *Tacoma 2025* (City of Tacoma 2018):

1. **Loss of Life and Property From Fire:** To increase public safety, TFD will provide community outreach education to eliminate the loss of life from fire and reduce the value of property loss 25% by 2025.
2. **Emergency Medical Service Incidents:** To improve the ability of firefighters to respond to true medical emergencies, TFD will reduce the number of EMS dispatches 15% by 2025.
3. **TFD’s Commissioned Workforce Diversity:** To increase equity, TFD will employ recruitment strategies to diversify the commissioned workforce of the Department to reflect the (racial and gender) demographics of the community by 2025.
4. **False Alarms:** To improve the Department’s response time to emergency incidents, TFD will reduce the number of false alarm incidents by 25% by 2025.

⁵ The National Fire Prevention Association (NFPA) recommends that fire engine and ladder trucks be staffed with a minimum of four on-duty members per 5.2.3 of NFPA 1710 (NFPA 2020).

Tideflats Emergency Response Plan (2016)

The Tideflats Emergency Response Plan was developed in 2016 to address unique emergency response problems faced in the study area, specifically (TFD 2016):

- A mix of land uses and operations that have the potential for serious fire or EMS emergencies.
- Historically increasing emergency response times to the Tideflats.

Several scenarios were tested in the plan to analyze response time sheds based on 2020 and 2035 conditions. None of these scenarios explicitly tested the recently constructed fire station (Station 5) located at 3510 E 11th Street. However, two scenarios analyzed a new station at the current Training Center or another suitable nearby location and found either would provide extensive coverage throughout the central Tideflats, even with the 11th Street bridge closed.

As recommended by the plan, the recently constructed Station 5 allows full emergency response service to properties along Port of Tacoma Road, connecting streets, and the Thea Foss area when combined with service from Station 1 (TFD 2016). Station 5 provides fire response, EMS, and hazardous materials capabilities in the port area and addresses previous gaps in reliable coverage along the Blair-Hylebos Peninsula (TFD 2016).

In addition to a new station, the Tideflats Emergency Response Plan makes specific recommendations for transportation infrastructure investment, staffing, and operations to improve service in the area. These short-term and long-term recommendations are still in the process of being implemented. Short-term transportation projects include replacement of the Puyallup River Bridge, improving the Port of Tacoma Road Interchange, and constructing high-occupancy vehicle (HOV) lanes and meters between SR16 and the Pierce County line. The Puyallup River Bridge was opened in 2019 as the Fishing Wars Memorial Bridge; however, the Federal Highway Administration (FHWA) closed the bridge for safety reasons. The I-5 – Port of Tacoma Interchange Improvement multi-phased project is currently underway and will improve street operations and help address gridlock conditions.

Other recent implementation measures include the 2021 completion of Station 5; however, the tested scenario of placing a new station at the current Training Center has yet to be implemented. Funding has also supported the construction of a new float system at the Marine Security Operations Center to improve maritime response capabilities.

But the recommendations outlined in the Tideflats Emergency Response Plan are still at varying design and implementation stages.

9.1.3 Parks

A limited number of residents live within the study area (approximately 350 people, or less than 0.2% of the city's total population; see Chapter 4, *Population, Employment, and Housing*). The western portion of the study area between the Thea Foss Waterway and Puyallup River is generally within $\frac{3}{4}$ mile of active recreation facilities located in downtown or south of I-5.

Park and open space services in Tacoma, including the Tideflats study area, are provided by the City of Tacoma Public Works and Environmental Services (ES) Departments and Metro Parks Tacoma (Metro Parks or MPT). For City-owned facilities, the City of Tacoma's 2021–2026 CFP provides an inventory of existing facilities, forecast of future needs, proposed projects, and financing for proposed projects. The 2018 Strategic Plan (an update of the previous Green Vision 2030 plan) (Metro Parks Tacoma 2019) provides the same information for Metro Parks Tacoma, in combination with Metro Parks' current and draft Capital Improvement Plan (CIP).

The City of Tacoma Public Works and ES Departments, and Metro Parks Tacoma together manage developed parks and natural areas, as well as local and regional trails, the urban tree canopy, and community gardens (City of Tacoma 2019a). There are approximately 1,480 acres of active open space and parks and 3,900 acres of passive open space (including undeveloped private property) distributed throughout the City of Tacoma (City of Tacoma 2017).

- Active open spaces and parks are lands intended to meet community needs for a wide range of recreational activities such as playing team sports, practicing individual physical activities (e.g., running, bicycling, or using play equipment), having a picnic, hiking, walking, and hosting events and classes.
- Passive open space includes properties that function in a healthy natural state for many public benefits including, but not limited to, stormwater management. Generally, these areas are undeveloped and covered with vegetation, and many of these areas have steep slopes. Most sites provide or have the potential to provide benefits to stormwater quantity and quality and many operate under regulations in the City's Critical Areas Preservation code (see Tacoma Municipal Code Chapter 13.11, Critical Areas Preservation [City of Tacoma 2023]). They sometimes require restoration, maintenance, and monitoring.

Current Conditions

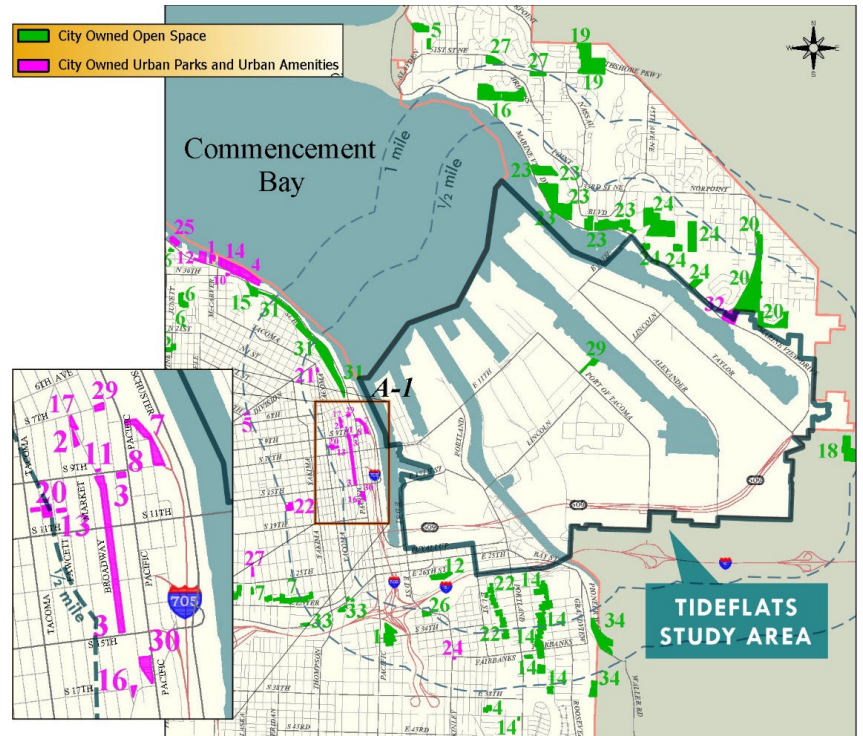
Parks and Open Space

Existing City of Tacoma-owned facilities throughout the City include 34 urban parks and urban amenities (totaling 704 acres) and 496 acres of open space (City of Tacoma 2017; City of Tacoma 2019a).

Exhibit 9-5 maps existing City-owned urban parks, urban amenities, and open space near the Tideflats study area. Urban park or amenity facilities totaling 7.3 acres and open space totaling 241 acres are within 1 mile of the Tideflats study area—one urban park (View Point Park) and one open space (q^wi^qw^{elut} “Little Marsh,” formerly known as Rhone Poulenc) are within the study area. Given its industrial and manufacturing history, there are very few parks and open space in the Tideflats study area, and there are areas within the Tideflats study area that would not be suitable for development of additional public access due to restricted access under federal regulations to support Port operations. Most of the study area is not within $\frac{3}{4}$ mile of a local park; however, very few residents live within the study area as well.

Exhibit 9-6 maps existing Metro Parks facilities near the Tideflats study area; facilities owned partially or fully by the City of Tacoma (also shown on Exhibit 9-5) are denoted with an asterisk. No Metro Parks facilities are within the study area. However, capital projects are currently underway or planned within the Tideflats Subarea. More details on these park projects are listed in *Recent Projects, Planned Improvements, and Identified Future Needs*, p. 9-26.

Julia’s Gulch, a 60-acre site co-owned by the Port of Tacoma and the City of Tacoma and managed by Metro Parks and the City of Tacoma, borders the northeastern edge of the study area. The site remains green through a stewardship agreement with the City of Tacoma, Schnitzer Steel Industries, and Forterra. Julia’s Gulch is actively being restored to reverse the trend of natural-area decline through such actions as removing invasive species, planting diverse native plants, watering, and mulching (City of Tacoma 2023). The northern portion of Swan Creek Park is located within 1 mile of the study area. Swan Creek Park is a 373-acre regional facility primarily owned by Metro Parks and Pierce County, as shown on Exhibit 9-5. The City of Tacoma has restored and preserved 12 acres near the confluence with Clarks Creek as part of the Natural Resource Damage Assessment (NRDA) Consent Decree. The majority of this regional park, however, is farther than 1 mile south of the study area (Metro Parks Tacoma 2020d).

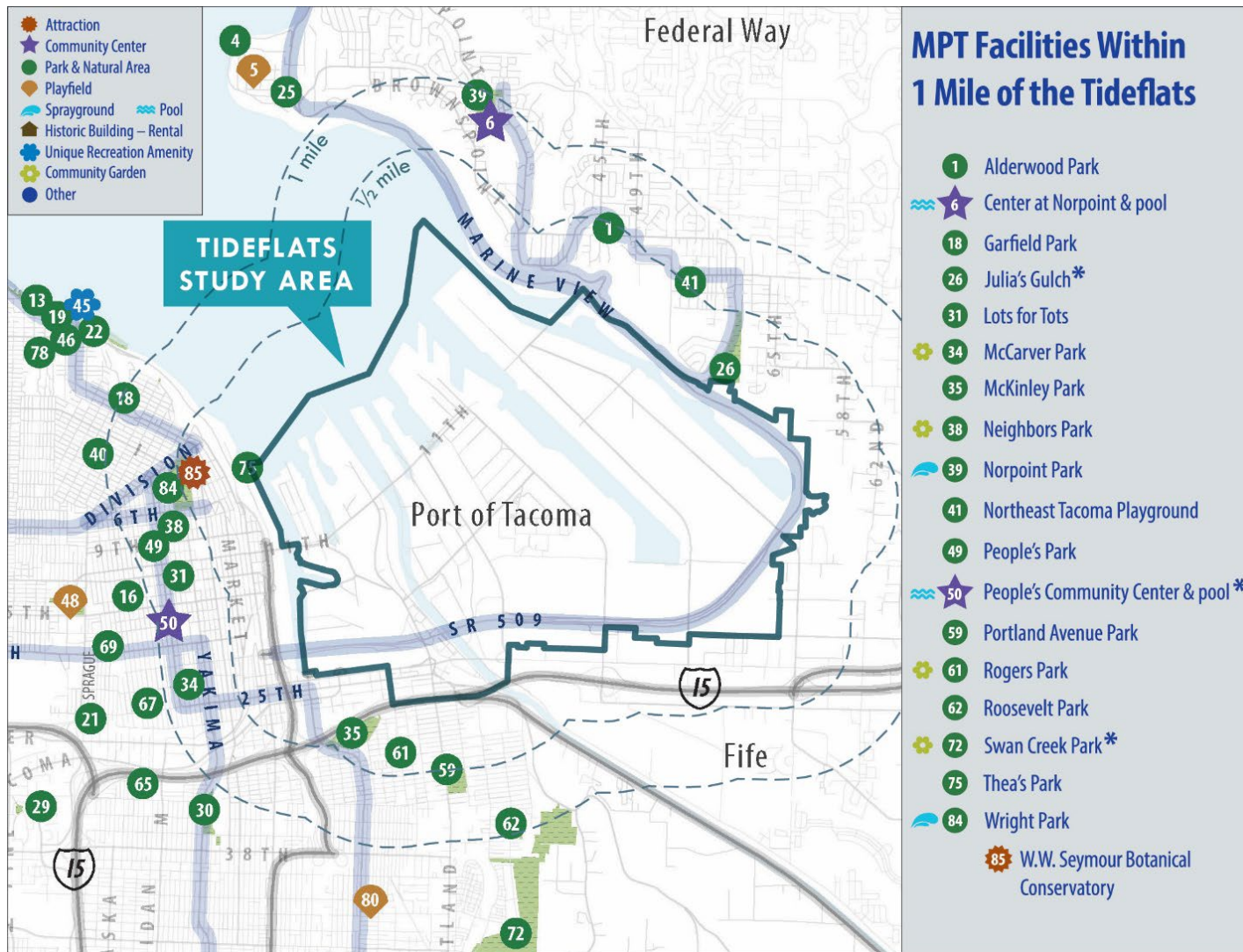


ID	Description	Distance	Size	ID	Description	Distance	Size
URBAN PARKS/AMENITIES^a				OPEN SPACE^b			
2	Ben Gilbert Park	Within ½ mile	0.12	7	Center Street	Within 1 mile	11.91
3	Broadway Plaza	Within ½ mile		12	Dome Slope	Within ½ mile	3.34
7	Fireman’s Park	Within ½ mile	1.79	14	First Creek	Within ½ mile	23.55
8	Frost Memorial Park	Within ½ mile	0.13	16	Harbor Ridge	Within 1 mile	20.60
11	Gunderson Point	Within ½ mile		18	Hylebos Creek	Within ½ mile	8.96
13	Harbor View Park	Within ½ mile	0.11	20	Julia’s Gulch	Within ½ mile	41.66
16	Jefferson Ave Mini Parks	Within ½ mile	0.02	22	M Street Slope	Within ½ mile	6.77
17	Ledger Square	Within ½ mile	0.10	23	Marine View Drive	Within ½ mile	43.61
20	McCormick Park	Within ½ mile	0.56	24	Marine View Drive East	Within ½ mile	39.22
21	Norton Memorial Park	Within ½ mile	0.10	26	McKinley	Within 1 mile	0.83
22	People’s Community Center	Within 1 mile	1.56	27	Northshore Parkway	Within 1 mile	4.46
24	Ray C. Roberts Memorial Park	Within 1 mile	0.14	29	q’wiq’wəlut	In Study Area	1.73
29	Spanish Steps	Within ½ mile	0.10	31	Schuster Slope	Within ½ mile	22.36
30	Tollefson Plaza	Within ½ mile	0.60	33	South Tacoma Way	Within 1 mile	0.86
32	View Point Park	In Study Area	2.00	34	Swan Creek	Within 1 mile	11.43
					Cappa Park	Within ½ mile	4
Total: 7.33 acres				Total: 245.29 acres			

SOURCES: City of Tacoma 2019b; City of Tacoma 2020a; BERK 2020

- a. The City departments with primary management responsibility for urban parks/amenities include Public Works – Real Property Services and Street Operations Divisions, and Planning and Development Services.
- b. The City departments with primary management responsibility for open space properties include Public Works – Real Property Services and Environmental Services.

EXHIBIT 9-5 City of Tacoma-Owned Parks and Open Space near the Tidflats Study Area



SOURCES: Metro Parks Tacoma 2020d; BERK 2020

* Facility owned partially or fully by the City of Tacoma (see Exhibit 9-5). Julia's Gulch is owned by the Port of Tacoma and Swan Creek Park is primarily owned by Metro Parks and Pierce County, although the City of Tacoma owns some parcels as shown on Exhibit 9-5.

EXHIBIT 9-6 Metro Parks Tacoma Facilities near the Study Area

The Hylebos Natural Area – owned and operated by the City of Fife with the help of volunteer groups – is also located about ½ mile to the southeast of the Tideflats study area (**Exhibit 9-7**). The City of Tacoma has restored and preserved 11 acres adjacent to Hylebos Creek. Several other City of Fife facilities are within 1 mile of the study area, including the Fountain Memorial Park, Fife Swim Center, Fife Senior Center, Centennial Park, Yamamoto Park, and Frank Albert Park Way (City of Fife Parks 2020).

The study area also includes numerous NRDA and Thea Foss Waterway mitigation sites mostly located along the shoreline. The Port of Tacoma also manages many restoration sites within the study area, along with developed public access sites. Public access sites within the study area include Alexander Avenue Wetland, Dick Gilmer Public Access, Gog-Le-Hi-Te I, Gog-Le-Hi-Te II, and q^wi^wəlut.

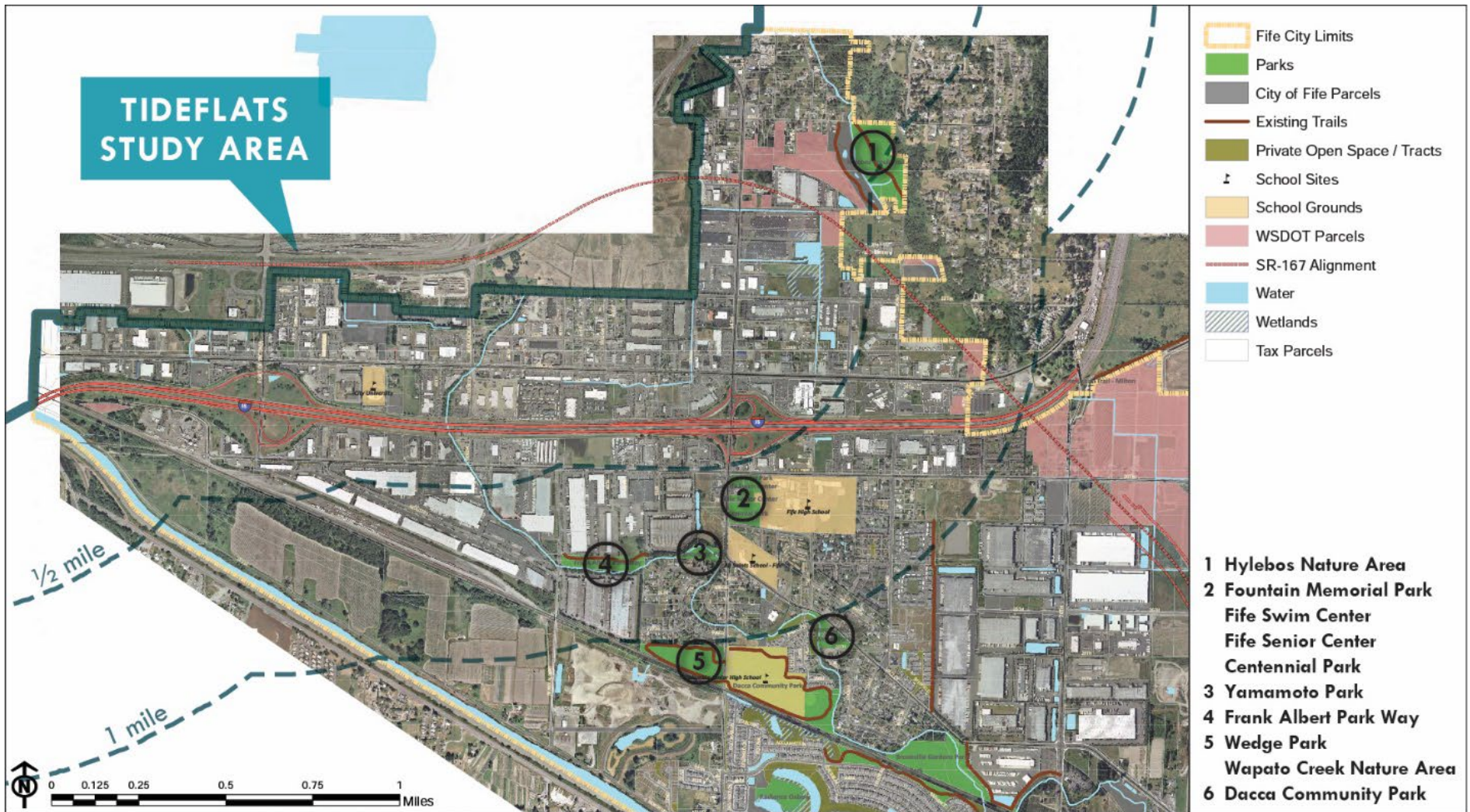
Trails

Nearly 16 miles of walking, hiking, and biking trails are located within the City of Tacoma (City of Tacoma 2019a). The City classifies its trails as signature or natural trails. The Puyallup River Levee and Marine View Drive signature trails run within and adjacent to the Tideflats study area, while the Dome to Defiance Promenade, Pipeline, Prairie Line, and Trail to the Mountain signature trails are within 1 mile of the study area (**Exhibit 9-8**). Several natural trails are located to the northeast of the study area near Marine View Drive.

Trails operated by the City of Fife at Hylebos Natural Area and Frank Albert Park are also near the study area (Exhibit 9-7).

Recent Projects, Planned Improvements, and Identified Future Needs

The City of Tacoma Public Works and Metro Parks have identified a need to maintain open space and expand parks facilities in the future. Community members have also provided input that Tacoma’s parks should have greater connectivity, promote environmental stewardship, provide programming that is accessible to all community members, and provide opportunities for special events and activities that improve cultural awareness and support economic development.



SOURCES: City of Fife 2020; BERK 2020

* The City of Fife also recently acquired the 4-acre Cappa Park, located at 3812 Pacific Highway E. It is currently undeveloped.

EXHIBIT 9-7 City of Fife Parks, Trails, and Natural Areas near the Study Area



SOURCES: City of Tacoma 2019a, Figure 37; BERK 2020

EXHIBIT 9-8 City of Tacoma Signature and Natural Trails near the Study Area

Metro Parks

In 2014, voters passed a \$198 million bond (the largest bond measure in Metro Parks’ history) to fund improvements throughout the park district. Major projects in the 2014 bond included infrastructure improvements at Point Defiance Park and expanded citywide access to recreation.

Additional capital projects recently completed, currently underway, or planned by Metro Parks that are relevant to the Tideflats study area are listed below (Metro Parks Tacoma 2020c). Some of these are

partially or fully funded by the 2014 bond, and several are in partnership with the City of Tacoma or others.

- **Foss Waterway Parks:** This project includes the design for two park sites along the Foss Waterway, in collaboration with the Foss Waterway Development Authority, including a new boathouse facility for kayaks and rowing shells. Construction on Melanie’s Park is underway and on track for completion in spring or summer of 2024, while the Waterway Park project is currently on hold. The 2014 park bond and Foss Waterway Development Authority initially funded the work.

Metro Parks identified other sub-categories of projects in its 2-year and 6-year 2019–2024 CP as part of the 2019–2020 biennial budget (Metro Parks Tacoma 2018a). While many of these projects were completed, are in progress, or are being carried forward, the 2021–2022 budget projected \$10 million less to fund operations in the coming biennium as a result of COVID-19. The 2021–2022 budget, along with the 2023–2024 budget and 2021–2026 CFP incorporate measures to account for this financial uncertainty. These reports prioritize projects based on changing community needs and an updated set of Metro Parks Board priorities, including a greater focus on equity and a 10-minute walk standard (Metro Parks Tacoma 2020b; Metro Parks Tacoma 2020a).

City of Tacoma

The City of Tacoma also plans for park projects in its CFP; additional projects recently completed, currently under way, or planned in the proposed 2021–2026 CFP include (City of Tacoma 2020a):

- **Inventory Update:** The City of Tacoma recently updated its inventory of active and passive open space to improve accuracy and completeness as part of the Open Space Program transition (2014).
- **Passive Open Space Restoration Plan Implementation:** ES continues to implement the 20-year Passive Open Space Restoration Plan established in 2016 (City of Tacoma 2017). The City primarily uses Washington Conservation Corps crews, and Washington Department of Ecology and AmeriCorps program, for its labor resource. The City plans to restart its volunteer engagement on passive open space properties after a COVID hiatus. The City currently has 15 areas in active restoration in accordance with permitted plans. The larger implementation plan will be evaluated in 2025 for progress and restoration strategies.
- **Fireman’s Park Improvements:** Improvements will open the park to the street and provide a safer and more attractive environment for park users. The project will rehabilitate the park with an open

concept plan (making the park more visible from the street) and will include timber removal, regrading, landscaping, lighting, and other park amenities. The project is fully funded.

- **Melanie Jan LaPlant Dressel (Central) Park:** Improvements and renovations at Central Park of the Foss Waterway will be managed by Metro Parks. The project is identified as part of the 2023–2026 spending plan and mostly unfunded.
- **Prairie Line Trail – Art Park:** This project would construct an Art Park adjacent to the trail between Pacific Avenue and S 15th Street along the United Way property and would complement and enhance the downtown Prairie Line Trail. The project is identified as part of the 2023–2026 spending plan and mostly unfunded.
- **Tacoma to Puyallup Trail:** In partnership with the Washington State Department of Transportation (WSDOT) and the cities of Fife and Tacoma, this project provides a trail that connects downtown Puyallup to Fife and downtown Tacoma. Fully funded and currently in the design stages, this trail runs parallel to SR 509, from Taylor Way to Alexander Avenue.
- **Waterway Park:** Located southeast of the Tideflats Subarea, this park remodel would capitalize on existing water access. It is funded in partnership with Metro Parks Tacoma, Port of Tacoma, and the community. However, the project is currently on hold as of July 2021.

Over the next 20 years, the City of Tacoma also plans to acquire and enroll more passive open space properties in restoration efforts. More resources will be required to facilitate these efforts.

Existing Policies and Regulations

Level of Service

One Tacoma Public Facilities and Services Element Policy PFS-4.3 establishes the following LOS standards for parks, which are not subject to Tacoma’s concurrency standard (City of Tacoma 2019a):

- **Local Parks:** 3 acres per 1,000 people, and within $\frac{3}{4}$ miles of all residents
- **Regional Parks:** 7 acres per 1,000 people
- **Open Space/Wildlife Habitat:** 2 acres per 1,000 people

Based on an estimated service area population of 213,300 in 2020 (OFM 2020) and the City’s adopted LOS standards, there is an overall deficit of parkland facilities. See **Table 9-8** for the existing inventory and units needed to meet current demand.

TABLE 9-8 Current Park Level of Service and Demand

Park Facilities	Minimum LOS (per 1,000 people)	2023 Existing Metro Parks Tacoma Inventory (acres)	Park Demand Based on LOS ^a (acres)	Supply (Deficit)
Local Parks	3 acres ^b	197.2	639.9	(442.7)
Regional Parks	7 acres	775.1	1,493.1	(718.0)
Open Space	2 acres	202.4	426.6	(224.2)

SOURCES: Metro Parks Tacoma 2018b; BERK 2023

a. Local parks must also be within ¾ miles of all residents.

b. Park demand based on an estimated service area population of 213,300 in 2020.

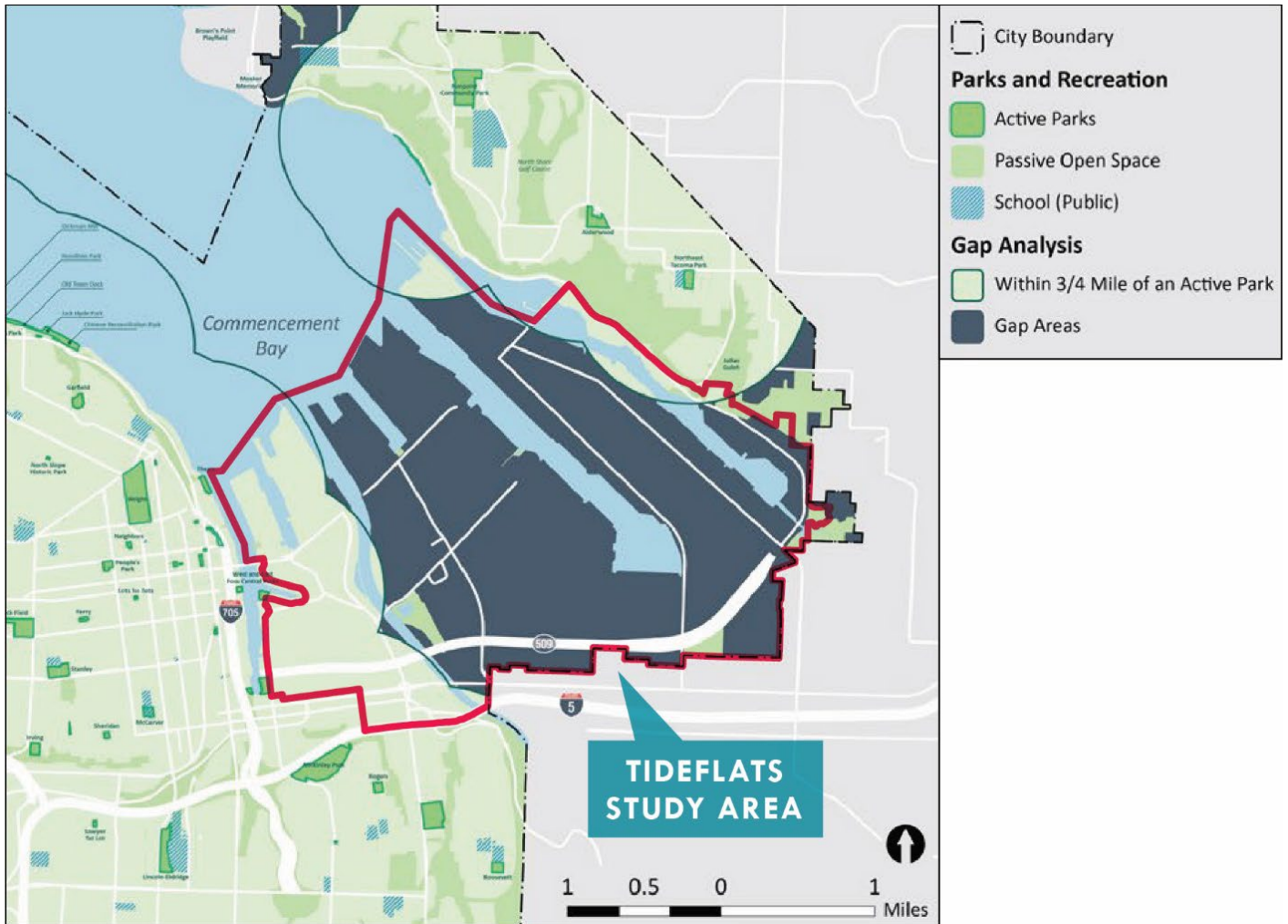
The City of Tacoma would require 639.9 acres of local parks, 1,493.1 acres of regional parks, and 426.6 acres of open space/wildlife habitat to meet its adopted standards.

The City is currently not meeting these standards, with 197.2 acres of local parks, 775.1 acres of regional parks, and 202.4 acres of open space/wildlife habitat. To meet the standards, the City would need to add 442.7 acres of local parks, 718 acres of regional parks, and 224.2 acres of open space.

Most of the Tideflats study area is not within ¾ miles of a local park (**Exhibit 9-9**). However, a limited number of residents live within the study area (approximately 350 people or less than 0.2% of the city’s total population; see Chapter 4, *Population, Employment, and Housing*). The western portion of the study area between the Thea Foss Waterway and Puyallup River is generally within ¾ miles of active recreation facilities located in downtown or south of I-5.

Encampment Cleanups and Site Reclamation

Metro Parks Tacoma partners with the City of Tacoma’s Homeless Engagement Alternative Liaison (HEAL) team to provide outreach to people experiencing homelessness and to connect interested people to necessary resources and services (Metro Parks Tacoma 2023). City of Tacoma staff regularly visit passive open space sites and perform cleanups as needed through Tidy-Up Tacoma, an initiative to provide clean-up services in shared public spaces. With homeless engagement and outreach, the HEAL team works as a cross-functional outreach team with law enforcement to provide support with alternative resources, safety, and security.



SOURCE: City of Tacoma 2019a, Figure 40; BERK 2020

EXHIBIT 9-9 City of Tacoma Park and Recreation Service Area Gaps

The City of Tacoma introduced Ordinance 28831 in 2022 (City of Tacoma 2022), which prohibits camping in a 10-block radius around temporary shelters in Tacoma, as well as all public property within 200 feet of Tacoma’s mapped rivers, waterways, creeks, streams, and shorelines. Due to the amount of waterways and the study area’s proximity to the Tacoma Stability Site, much of the Tideflats area prohibits camping. The City’s focus on site reclamation and community outreach with service delivery help assist those experiencing homelessness to identify more permanent options while also increasing public health and safety.

City of Tacoma Shoreline Master Program (2019) and Public Access Alternatives Plan (2010)

The City of Tacoma's Shoreline Master Program (SMP) establishes two goals related to public access and recreation within shorelines areas in the city (City of Tacoma 2019c):

- **Public Access Goal:** To increase the ability of the general public to reach, touch, and enjoy the water's edge, to travel on the waters of the state, and/or to view the water and the shoreline from adjacent locations, provided that private rights, public safety, and shoreline ecological functions and processes are protected consistent with the U.S. and state constitutions, state case law, and state statutes.
- **Recreation Goal:** To provide opportunities, spaces, and appropriate facilities for diverse forms of water-oriented recreation that takes advantage of the unique waterfront setting.

Specific objectives call for establishing a linear system of public access along the Tacoma shoreline, starting with high-density intensive-use urban activity on the Thea Foss Waterway, and for encouraging cooperation with other public agencies, non-profit groups, and private landowners to increase and diversify recreation opportunities.

The City's Public Access Alternatives Plan (PAAL) is a stand-alone implementation plan associated with the SMP that further articulates the vision for public access to the shoreline and recreation. Several existing public access areas are within or near the Tideflats study area (City of Tacoma 2010):

- Existing viewpoint at the Port of Tacoma Observation Tower.
- Existing public marinas, private marinas, and hand boat launches on the northern shore of the Hylebos Waterway and western shore of the Thea Foss Waterway (including at Waterway Park).
- Existing habitat observation points on the southern shore of the Blair Waterway (the Lincoln Avenue public street end) and northern shore of the Puyallup River (near the wetlands by the Lincoln Avenue bridge).

The PAAL identifies other potential projects on the Thea Foss Waterway, on Marine View Drive, and on port industrial shorelines in areas that will not interfere with port operations or cause public safety concerns. These projects include a pedestrian walkway on the Thea Foss Waterway, motorized and non-motorized boat launches, additional habitat observation points, improved public access/viewing signage, and new viewpoints (City of Tacoma 2010).

In addition, there is an interlocal agreement with the City of Tacoma and Port of Tacoma on various projects located in the Tideflats Subarea. Supported projects include the purchase of nearby Julia Gulch, made possible through an interlocal agreement among the City of Tacoma, Port of Tacoma, and the Cascade Land Conservancy.

Metro Parks Tacoma 2018 Strategic Plan

Metro Parks' mission is “Creating healthy opportunities to play, learn and grow.” The Department also has eight values: innovation, excellence, equity, inclusiveness, sustainability, accountability, safety, and fun (Metro Parks Tacoma 2018b). These values are echoed in the Board's 2023–2024 budget priorities: racial equity, access and inclusion, health and wellness, conservation, partnerships, and engagement (Metro Parks Tacoma 2020b).

As part of the 2018 Strategic Plan, Metro Parks developed a set of internal and external-focused performance measures (Metro Parks Tacoma 2018b):

- Attain workforce diversity in gender and ethnic composition that are within 5% of the District community by 2023.
- Achieve 90% 10-minute walk LOS coverage by the year 2023.
- Achieve 100% completion of all biennial goals outlined in the Mission-Led Comprehensive Program Plan (Metro Parks Tacoma 2016) in the 2017/18, 2019/2020, & 2021/22 biennia.
- Accomplish 100% of all actions annually identified in the MPT Environmental Sustainability Plan (Metro Parks Tacoma 2015).
- Grow the average “non-tax” or earned revenue component of the overall MPT operational budget by 0.5% per year.

The Metro Parks Tacoma Strategic Master Plan is currently being updated. The updated plan is expected to be completed and adopted in spring 2024.

Tacoma 2025 Goals and Performance Measures

Tacoma 2025 sets the strategy for the entire City of Tacoma. Metro Parks is specifically identified as a “Key Partner” for the health and safety, arts, and cultural vitality, and built and natural environment focus areas. Public Works is also identified as a “City Champion” for the built and natural environment focus area. The community priorities in *Tacoma 2025* for these three focus areas are (City of Tacoma 2015):

- **Health and safety:** Improve neighborhood safety, increase active living, and improve overall health.

- **Arts and cultural vitality community:** Increase participation in arts and culture; embrace Tacoma’s diversity of people, places, and cultures; and leverage and strengthen Tacoma’s arts and cultural assets.
- **Built and natural environment:** Increase transportation options, sustain and improve Tacoma’s natural environment, grow, and enhance the vitality of Tacoma’s neighborhoods, and improve and maintain Tacoma’s streets.

9.1.4 Summary of Affected Environment

Police and Fire

Police and fire services for the Tideflats study area are provided by the City of Tacoma. The study area is located within TPD’s District 1–4 in Sector 1, which includes the Sector 1 Substation (Central), Northeast Substation, and Harrison Range (Table 9-3). For the 2019–2020 biennium, TPD had 406.3 authorized FTE employees, including 207.3 patrol service officers, 19 homicide or special assault officers, five homeless outreach team members, and several administrative or support service specialists (City of Tacoma 2018). Enforcement officers commissioned by the Puyallup Tribe may also enforce Puyallup Tribal Law in the portion of the Tideflats study area overlapping the Puyallup Reservation. Fire Stations 5 and 6 and the training center are located within the study area (Exhibit 9-4). As of 2022, TFD employed 504 staff, including 445 commissioned personnel and 59 non-commissioned personnel (TFD 2022). TFD stations are staffed daily districtwide by a minimum of 79 fire station personnel 24 hours per day (TFD 2022).

Call load for both departments continues to increase as development occurs. The number of Group A offenses has remained relatively stable over five years (2015–2019), while the number of Group B arrests has increased (Table 9-2). Over 80% of TFD’s calls each year are for EMS incidents (40,521 incidents or 82% in 2022) (Exhibit 9-2), and its average response time is significantly higher than the benchmark performance indicator. Station 5 within the Tideflats study area has the highest travel time of all stations, with an aggregate of 9:00 minutes, while Station 6 has a travel time of 7:54, just under 8 minutes.

Both departments are currently meeting LOS standards established in *One Tacoma Public Facilities and Services Element Policy PFS-4.3* (City of Tacoma 2019a), when properly staffed.

- **Police:** 288.58 square feet of law enforcement facility space per 1,000 people. TPD currently exceeds this standard based on an

estimated 2020 city population of 213,300 and an existing space allocation of 141,392 square feet (Table 9-3).⁶

- **Fire:** 0.109 apparatus per 1,000. When fully staffed, TFD exceeds this standard as of 2020 based on an estimated 2020 service area population of 231,300 and 42 existing apparatus (Table 9-6). As of late 2023, fewer than half of the apparatus are fully staffed (TFD 2024), resulting in decreased operational capacity and a strained ability for TFD to adequately respond to calls.⁷

Regular planning for future capital facility and staffing needs will likely minimize impacts and meet future demand. The City of Tacoma is currently making initial improvements to Harrison Range and calls for an additional \$575,000 of maintenance and upgrades between 2023 and 2026, although funds are unconfirmed (City of Tacoma 2020a). Fire Station 5 at 3510 E 11th Street was recently completed in 2021 and provides additional fire response, EMS, and hazardous materials capabilities to the Port of Tacoma and other industries in the port area. However, significant recommendations will need to be implemented for the TFD to meet incident service demand and decrease response time to an adequate time. These recommendations include, among others, increased staffing, fire station master facility remodel, and new strategies for traffic calming and pedestrian safety. The City of Tacoma is also currently considering if fire impact fees could help meet the need for additional fire protection infrastructure generated by new development.

Parks

Based on an estimated service area population of 213,300 in 2020 (OFM 2020), the City of Tacoma is currently not meeting citywide acreage LOS standards established in *One Tacoma Public Facilities and Services Element Policy PFS-4.3* (City of Tacoma 2019a).

Most of the Tideflats study area is not within $\frac{3}{4}$ miles of a local park (Exhibit 9-9). However, a limited number of residents live within the study area (approximately 350 people or less than 0.2% of the city's total population; see Chapter 9, *Population, Employment, and Housing*). The western portion of the study area between the Thea Foss Waterway and Puyallup River is generally within $\frac{3}{4}$ miles of active recreation facilities located in downtown or south of I-5.

⁶ See Table 9-3 for an inventory of existing space. (OFM 2020).

⁷ The City of Tacoma's estimated population is 213,300 as of April 1, 2020 (OFM 2020). TFD also provides contracted fire and EMS protection to Fircrest, Fife, and Pierce County Fire District 10, which adds a population of approximately 18,000 (TFD 2020a).

The City of Tacoma and Metro Parks have identified a need to maintain open space and expand park facilities in the future. In 2014, voters passed a \$198 million bond (the largest bond measure in Metro Parks history) to fund improvements throughout the Metro Parks district. Several major projects from this bond have already been completed or are currently under construction (Metro Parks Tacoma 2020c). Metro Parks and Public Works have several other capital projects currently underway or planned for in their most recent CFPs and budgets. However, near-term projects will likely be delayed or modified because of projected budget shortfalls as a result of COVID-19. Metro Parks projected \$10 million less to fund operations in the 2021–22 biennium and adjusted its planned efforts based on this financial uncertainty and changing community needs (Metro Parks Tacoma 2020a, 2020b). Regular planning for future capital facility and staffing needs will aim to minimize impacts and meet changing demand.

9.2 Potential Impacts

Thresholds of significance utilized in this impact analysis include:

- Lack of facility square footage space that would reduce adopted levels of service for police.
- Increased demand for fire and emergency services apparatus beyond current operational capabilities.
- Lack of adequate park space would significantly reduce adopted levels of service beyond current conditions.

9.2.1 Impacts Common to All Alternatives

Police Services

Population Growth

Population and employment growth in the study area may not necessarily result in increased crime and demand for police services. In Section 9.1, *Affected Environment*, Table 9-2 shows that as population increased by 2.5% from 2016–2019, Group A offenses decreased by 5%. Many factors are part of an increase or decrease in crime, including population characteristics, economic conditions, transportation conditions, climate, attitudes toward crime and crime reporting practices in the local population, and police department characteristics.

Given that employment growth does not directly correlate to an increased demand for police services, the No Action Alternative and

three development alternatives would not necessarily result in proportional increases in call volumes or incidence of major crimes. Therefore, no specific findings of adverse effects are noted. TPD will continue to analyze where best to focus its resources to respond to changes in demand for police services regardless of which alternative is selected. Better site and building design, such as building placement, lighting, and visibility in industrial areas, can reduce the potential for crime.

Construction

The Tacoma Police Department responds to construction-related service calls such as construction site theft and vandalism. The Port of Tacoma also has its own security team and works in coordination with TPD to provide public services to the Tideflats Subarea. Potential construction activities under all the alternatives could result in an increase in demand for police services. Construction is expected to increase incrementally, which TPD and the Port of Tacoma will continue to analyze to determine where best to focus resources in response to changes in demand. In addition, TPD is exceeding its LOS. Existing Departmental resources are expected to be sufficient to handle such an increase.

Fire

Call Incidents

The increased population density and jobs are likely to see an increase in fire incidents. See **Table 9-9**. Increased development places additional demand for services, and may increase apparatus, access, or fire station space needs on Stations 5 and 6,⁸ which are currently facing significant challenges to achieve performance levels.

TABLE 9-9 Projected Station Square Feed Needed by Alternative

	Alt 1	Alt 2	Alt 3	Alt 4
Jobs (Net)	1,048	5,335	8,529	1,048
Added Industry Sq. Ft. @1,000 SF per Job	1.05 M	5.34 M	8.53 M	1.05 M
Future Incidents at Rate of Stations 5 and 6 Currently	387	1,970	3,149	387

SOURCES: TFD 2022, 2023; BERK 2023

⁸ Fire Station 6 lacks firefighting and hazmat capable response resources. It only has medical aid capabilities.

Population Growth

Growth in worker populations in the study area is expected to lead to an increased number of calls for emergency services, increased apparatus demand, and increased congestion to an area that is already seeing significantly high response times. Growth is expected to occur incrementally under all alternatives, as individual development projects are constructed. As the population increases, the TFD would attempt to add additional equipment, staffing, and facilities as required to maintain performance levels. At this time, the entire subarea has a response time that is significantly beyond the 4-minute travel time goal. Station 5 has the longest travel response times of the stations at 9:00 minutes, with Station 6 also exceeding the travel time goal at 7:54 minutes. With these extended response times, the Fire Department is not currently providing adequate availability for serious fires, EMS events, and health incidents.

As described under Section 9.1, *Affected Environment*, Fire Station 5 was recently replaced and is not expected to need renovations in the near future. Other fire stations that serve the port are 60 years or older. These fire stations may require future renovation or replacement. Any potential future fire facility, staffing, or equipment needs could be included as part of the City's annual budget and CIP process.

Construction and Increased Building Density

The TFD makes service calls related to inspection of construction projects and construction-related accidents, conducts technical inspections required for hazardous buildings, issues permits, and reviews construction plans. Increased construction activities associated with potential development under the alternatives would result in an increase in demand for fire safety. Existing TFD staffing is expected to be sufficient to handle increased services needed for construction activities. However, the TFD does not have additional facilities to add apparatus or firefighters in the Tideflats Subarea, which would be required to maintain performance levels.

Hazardous Materials

Industrial uses often include hazardous materials or have the potential to produce hazardous waste. With the City of Tacoma, the Tideflats area is the highest risk zone for Hazardous Material incidents, as the industrial operations have a higher emergency risk potential (TFD 2016). In addition, a Hazardous Materials license is required for any business conducting activities that produce hazardous waste; the application

requires review by TFD prior to the activity being conducted. Current and future development are expected to increase demand on fire services. In addition, many of the buildings are not adequately covered by the 4-minute response time or even the 8-minute response time. Even with Station 6 and the recently constructed Fire Station 5 located in the subarea, the Tideflats Subarea is not currently adequately covered by fire services. With added population density, there is increased potential population exposed in instances of hazardous material release or spill.

Emergency Response and Evacuation Measures

The mix of land uses and operations in the subarea has the potential for serious fire or EMS emergencies. In addition, access to the area is limited by waterways, rail, bridge restrictions, and roadway closures and congestion. As a result, the emergency response times to the Tideflats area has increased over the past several years (TFD 2016). The recent replacement of Fire Station 5 allows partial emergency response to properties in the area and helps lower the emergency response times. However, many parts of the area are currently not adequately covered by a 4-minute or even 8-minute travel time response, as required to achieve benchmark performance levels.

The Tideflats Subarea geographic location and limited access to the area also pose challenges to emergency evacuation measures. Changes to the street network and increased traffic volumes over time have the potential to impact emergency response times and evacuation measures. Regular planning by TFD with the City of Tacoma is necessary to prioritize and address changes to emergency evacuation routes and corridors.

Parks

Population Growth

Growth in worker population in the study area may lead to increased use and demand for park space. However, the demand for park space is in proportion to the increase in housing under each alternative, which encourages some housing growth in Alternatives 1, 3, and 4, and no housing growth in Alternative 2. Growth is expected to occur incrementally under all alternatives, as individual development projects are constructed. As the population increases, nearby park and recreation would expect to see increased demand, including q^wi^qw^{elut} “Little Marsh” open space, Julia’s Gulch, Swan Creek Park, and the Hylebos Natural Area. Metro Parks would attempt to add park space as required to meet level of service levels.

9.2.2 Alternative 1: No Action

Alternative 1 (No Action) is expected to result in approximately 1,048 additional jobs in the study area compared to existing conditions. Residential development would be minor, with housing only allowed in the M1 zone. Alternative 1 (No Action) has the greatest amount of land area in industrial zoning classification, specifically heavy industry. It also has the most industrial flexibility.

Police

No significant adverse impacts on police beyond those described under *Impacts Common to All Alternatives* are expected under Alternative 1 (No Action). Regular planning by TPD is expected to address incremental increased demand for police services.

Fire Services

Fire services are currently not able to provide timely service to the Tideflats Subarea community, as described under *Impacts Common to All Alternatives*. The increased development is expected to further increase demand for fire services, which is already not meeting benchmark performance levels. The increased industry may further increase call volumes, increase congestion, and delay response times.

Parks

With more housing allowed in Alternative 1 (No Action) (206 total, 202 housing units above existing) than in Alternative 2 (no net increase, potential reduction), Alternative 1 is expected to see increased demand for park space. However, the growth is expected to be modest and **would not have a significant adverse impact** on overall park demand in the subarea.

9.2.3 Alternative 2

Alternative 2 would result in 5,335 new jobs, with greater employment density than Alternative 1 (No Action). Alternative 2 would focus on industrial uses with greater restrictions on non-industrial activity in most character areas. Alternative 2 would have the least amount of housing of the alternatives, with no new housing allowed in the subarea.

Police

No significant adverse impacts on police beyond those described under *Impacts Common to All Alternatives* are expected under

Alternative 2. Regular planning by TPD is expected to address incrementally increased demand for police.

Fire Services

Fire services are currently not able to provide timely service to the Tideflats Subarea community, as described under *Impacts Common to All Alternatives*. The increased development is expected to further increase demand for fire services, and the increased employment will increase congestion and response times in the subarea.

Parks

Alternative 2 would not allow new housing, so additional park space demand is not expected. **No significant adverse impacts** on parks beyond those described under *Impacts Common to All Alternatives* are expected under Alternative 2.

9.2.4 Alternative 3

Alternative 3 would result in 8,529 new jobs, with the highest employment density of the alternatives. It would also have the most housing, which would be located near transit and a planned multimodal transportation network. It would have primary industrial uses in the Core Area and light industrial and mixed uses in Transition Areas. It would have the most shoreline access and recreation, as well as fish and wildlife habitat restoration that is concurrent with sea level rise.

Police

No significant adverse impacts on police services beyond those described under *Impacts Common to All Alternatives* are expected under Alternative 3. Regular planning by TPD is expected to address incremental increased demand for police services.

Fire Services

Fire services are currently not able to provide timely service to the Tideflats Subarea community, as described under *Impacts Common to All Alternatives*. Alternative 3 would have the most employment density and housing, which will impact fire response times and emergency evacuation measures. Housing and higher density transit-oriented industrial and supporting employment would be located near a planned multimodal transportation network to mitigate increased traffic. However, the increased development is expected to further increase demand for fire services and its travel times.

Parks

Alternative 3 would allow the most housing of all alternatives. However, the growth is expected to be minimal and incremental, and not have a significant impact on overall park demand in the subarea. It could result in 494 units (net 490 above existing). Alternative 3 also has the most shoreline access and recreation, which provides potential opportunities for access to open space and park investment. **No significant adverse impacts** on parks beyond those described under *Impacts Common to All Alternatives* are expected under Alternative 3.

9.2.5 Alternative 4

Alternative 4 would result in 1,048 new jobs, with the same employment density as Alternative 1. It would also result in additional housing at the levels of Alternative 1 near high-capacity transit, with a planned multimodal transportation network. It would allow for greater industrial use and focus on heavy industry in particular locations within the subarea, similar to Alternative 1.

Police

No significant adverse impacts on police services beyond those described under *Impacts Common to All Alternatives* and Alternative 1 are expected under Alternative 4. Regular planning by TPD is expected to address incremental increased demand for police.

Fire Services

Fire services are currently not able to provide timely service to the Tideflats Subarea community, as described under *Impacts Common to All Alternatives*. Alternative 4 would see increased congestion due to an increase in housing and jobs, which will further impact fire response times and emergency evacuation measures. Housing and higher density transit-oriented industrial and supporting employment would be located near a planned multimodal transportation network to mitigate increased traffic. However, the increased development is expected to further increase demand for fire services and its travel times. In addition, the increase in heavy industrial may increase the hazardous materials risk assessment of the area, adding potential further demand to fire response.

Parks

With housing allowed in Alternative 4, it is expected to see increased demand for park space similar to Alternative 1. However, the growth is

expected to be minimal and **would not have a significant adverse impact** on overall park demand in the subarea.

9.3 Avoidance, Minimization, and Mitigation Measures

Incorporated Plan Features

Based on the proposed Subarea Plan and the elements of the alternatives themselves, the following are potential self-mitigating features.

Police and Fire Services

- Compact growth and planned multimodal transportation networks in proximity to TFD and TPD could result in more efficient delivery and ability to meet LOS objectives for police and fire services.

Parks

- Increased investment in shoreline access and recreation and fish and wildlife habitat restoration could provide coordination opportunities for park access and passive recreation.

Regulations & Commitments

The following are existing regulations and commitments that apply to all alternatives.

Police and Fire Services

- All new development in the subarea is required to meet the City of Tacoma development regulations as well as the International Building Code. The Fire Code provides minimum fire and safety standards for buildings, access roads, processes, and fire protection equipment installations. Adequate fire flow to serve potential development is required. Future development is also required to comply with code requirements for emergency access to structures.
- The City sends plans for building construction from the Department of Construction to the Fire Department for review of fire code-related issues.
- Ongoing TPD and Port of Tacoma processes to evaluate resource prioritization are expected to address future changes in demand for police services in the study area.

- Ongoing City of Tacoma capital improvement planning and budgeting efforts are expected to address police and fire facility needs, including potential needs for future improvements.

Parks

- Ongoing Metro Parks and City of Tacoma Public Works and ES processes to evaluate future park needs are expected to address park demand.

Other Potential Mitigation Measures

Impacts are expected to be incremental over time, and the following mitigation measures identify the ongoing planning and sources of revenue that could support service demand increases over time.

Police and Fire Services

- Ongoing City operational and capital facilities planning efforts are expected to address incremental increases and other changes in demand for police and fire services.
- A portion of the tax revenue generated from redevelopment in the study area would accrue to the City of Tacoma and could be used to fund future police and fire services.
- The City is currently exploring if fire impact fees might help meet the need for additional fire protection infrastructure generated by new development. Implementation of this program may help support the development of future fire facilities.
- As part of the Planned Action Ordinance contemplated for the Tideflats Subarea, the City could establish a SEPA mitigation fee. It could be based on the expected incidents, and needs for apparatus, access, and building space in appropriate locations. Table 9-9 shows the anticipated demand with potential increased development of each alternative. The mitigation fee could be used to help fund an additional station, improved access, increased staffing, or apparatus to address strained response time needs.

Parks

- A portion of the tax revenue generated from redevelopment in the study area would accrue to the City of Tacoma and could be used by Metro Parks to fund future park investments in the subarea.
- Metro Parks prepares strategic, and system plans for parks and recreation investments to provide for system improvements and attract capital grants.
- The City of Tacoma and Port of Tacoma interlocal agreement provides pay-in-lieu opportunities.

9.4 Significant Unavoidable Adverse Impacts

All alternatives would increase the demand for public services; there are ongoing planning efforts that can adaptively address service demand over the planning period. The increase in industrial jobs and hazardous materials could result in a greater need for fire and emergency services. All new development in the area and corresponding increased demand on emergency response will lengthen the extended response times that the Fire Department is experiencing. **With the added development, the current adverse situation is worsened.** The increased population in a geographically challenging area due to waterways, rail, bridge limitation, and road conditions would create challenges related to emergency response and evacuation measures. Coordination with the City to support modified roadway infrastructure and the designation of emergency response corridors will help reduce the current situation. If coordination does not occur, there would be a **significant unavoidable adverse impact**.

CHAPTER 10 Utilities

This chapter describes the affected environment, potential impacts on utilities associated with each alternative, and proposed mitigation measures. Utilities addressed in this section include potable water, wastewater, stormwater, electricity, natural gas, communications and data, and solid waste.

The analysis considers each alternative’s amount of growth in the study area and its effect on utility services. The analysis relies on published information from City of Tacoma, Tacoma Public Utilities, the Puyallup Tribe of Indians, Puget Sound Energy, and Port of Tacoma. Although the City of Fife borders but does not overlap the study area on the south, many of the utility providers discussed in this section also provide utility services to City of Fife homes and businesses. The study area is located within Pierce County and specifically with the City of Tacoma incorporated area. Similar to Fife, many of the utility providers described in this section also provide utility services to other incorporated Pierce County homes and businesses and unincorporated Pierce County homes and businesses.

10.1 Affected Environment

10.1.1 Potable Water

Tacoma Water, a division of Tacoma Public Utilities (TPU), provides potable water to the study area. Tacoma Water’s 119-square-mile service area includes the City of Tacoma, portions of the Puyallup Indian Reservation, areas operated by the Port of Tacoma, portions of the cities of Federal Way and Fife, portions of Frederickson and other Pierce County unincorporated areas, and other nearby areas, including areas in King County. Tacoma Water serves 101,197

residential customers and 6,945 commercial or industrial customers (Tacoma Water 2023).

Tacoma Water's Firm Yield (the minimum amount of water that Tacoma Water can reliably produce on any day of a given year) is 107 million gallons per day (gpd). The average use is approximately 50 million gpd. Peak use in summer may be double the average and exceed the Firm Yield in some cases.

Tacoma Water owns 11% of land within the 148,000-acre Green River Municipal Watershed, which has been Tacoma Water's primary water supply since 1913. Precipitation within the forested watershed filters and flows to streams and eventually to the Green River. Tacoma Water operates the Tacoma Headworks Diversion Dam at the western end of the watershed and seven wells within the watershed along the North Fork of the Green River. With the construction of the Green River Filtration Facility in 2015, water from the North Fork Wells is now blended with river water to reduce filtration costs.

The Green River Municipal Watershed is also the source of water for a regional partnership formed in 2002 by the City of Kent, the Covington Water District, the Lakehaven Water and Sewer District, and Tacoma Water. The Regional Water Supply System supplies up to 65 million gpd to Tacoma Water and project partners.

Tacoma Water's potable water supply originates from the following sources: Green River (73 million gpd), second Green River supply (27 million gpd on average [interruptible share of regional water supply system]), 24 Tacoma Water-owned local groundwater wells (40 million gpd), and North Fork wells (60 million gpd). Water is stored at McMillin Reservoir and 17 other reservoirs and standpipes. As of August 2023, Tacoma Water reports that the water supply is adequate (Tacoma Water 2023).

The level of water use can be described as the amount of water used per person in the study area. Tacoma Water customers use approximately 115 gpd per capita. Tacoma Water's Integrated Resource Plan (IRP; Tacoma Water 2018b) states that in both years 2037 and 2050, water resources will be adequate in all but the most stressed conditions. Under the most stressed conditions in 2050, the Resource Adequacy Standard (RAS) would not be achieved. The IRP evaluated a range of alternative solutions that could contribute to future reliability of the water system. The IRP analysis of Tacoma Water's supply system demonstrated that the system has ample water to meet customer needs under normal conditions. A record drought,

such as the 2015 drought, would stress the system. The five alternatives considered in the IRP would enable Tacoma Water to meet the RAS through 2037. In the more distant future, Tacoma Water expects that implementation of select alternatives will be necessary to continue meeting its water supply, customer service, and environmental obligations (Tacoma Water 2018b).

Future Tacoma Water projects include the Additional Water Supply Project (AWSP). Tacoma Water expects to receive its Second Supply Project share (up to 4,150 acre-feet) of the 10,000 acre-feet potentially available, when Phase 1 of the AWSP has been completed. The IRP states that in the near term, Tacoma Water will implement improvements to enable its existing groundwater supplies to provide optimal production and reliability. Over the longer term, peak shaving strategies will be used to smooth out peak loads and therefore benefit the system. Peak shaving strategies are demand management actions that reduce peak summer water use, retaining water in storage as a buffer for the supply system in the fall. These strategies could include changes in turf and landscape design, permanent reductions in residential and commercial irrigation uses within the water service area, and changes in the rate structure (Tacoma Water 2018b). Reducing peak loads can reduce the need for new or improved infrastructure to support overall load.

The Port of Tacoma uses potable water in the study area for drinking water, bathroom sinks, vessels topping off water tanks, washing out refrigerated containers, and car washes at auto processing facilities. Future increases in water usage by the Port of Tacoma would be associated with any future increase in cargo volumes and number of ships at berth. The Port does not expect a major increase in demand (Wilson 2023). Within the study area, potable water services infrastructure includes distribution pipes.

Until September 30, 2023, the WestRock Company operated a paper mill in the study area, at 801 Portland Avenue E, northwest of E 11th Street. The mill employed 400 people and accounted for a large portion of water demand and Tacoma Water revenue (Wilson 2024). TPU reports that WestRock amounted for approximately one-third of daily water use in the study area; therefore, the above estimates of water use in the study area have likely declined by up to one-third (WestRock 2023; Wilson 2024).

10.1.2 Wastewater

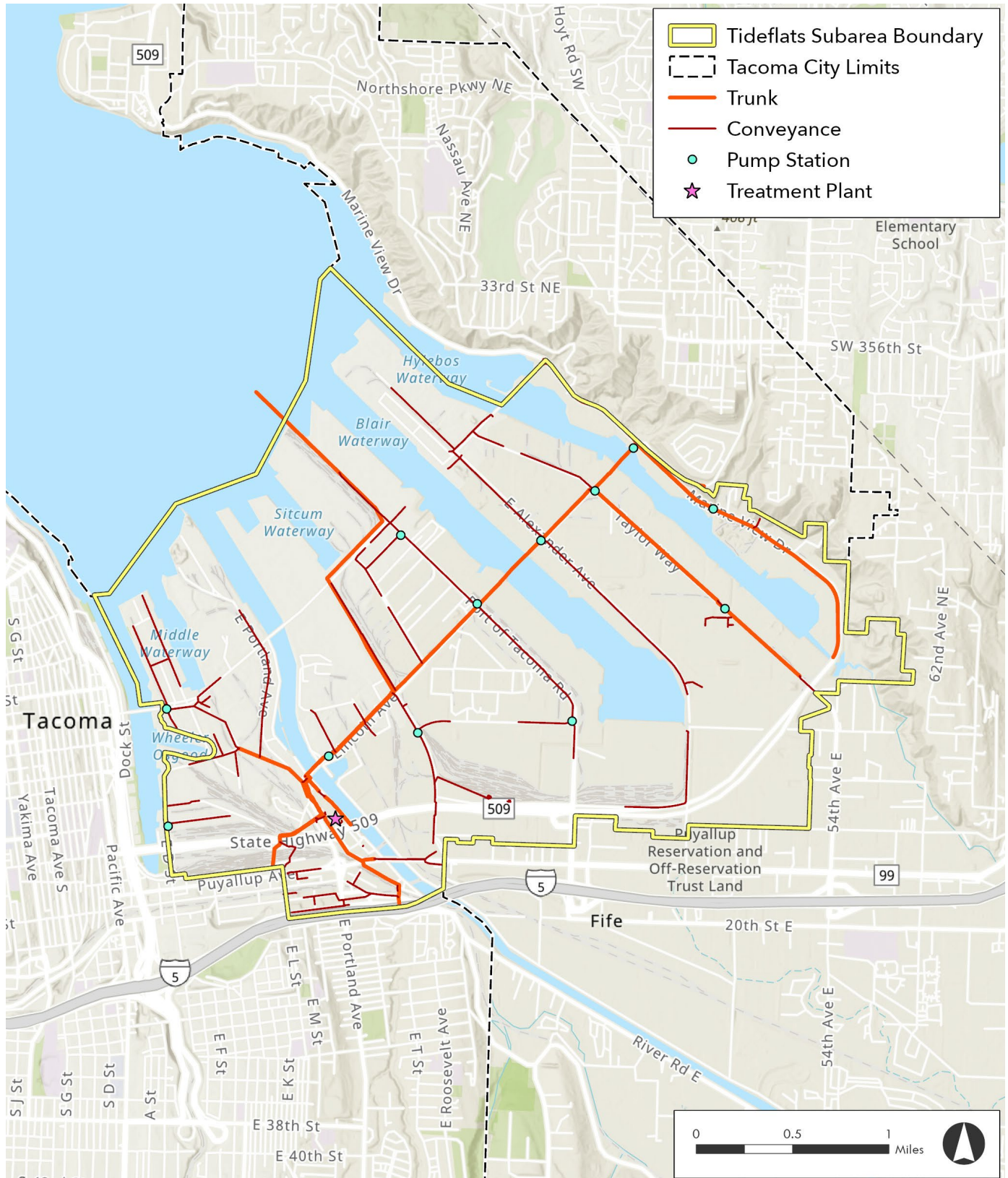
The City of Tacoma's Department of Environmental Services (ES) provides wastewater service to the study area. Wastewater comes from sinks, showers, and toilets; is carried from residences and businesses through pipes and pump stations for treatment at a treatment plant; and is then released into Commencement Bay (City of Tacoma 2023a). The sewer service area contains more than 90,000 customers.

Wastewater infrastructure consists of 700 miles of sewer pipes, 50 pump stations, and two wastewater treatments plants (Central Treatment Plant and North End Treatment Plant) (City of Tacoma 2023a). Within the study area, ES operates wastewater infrastructure including the Central Treatment Plant (CTP), more than 150,000 feet of collection system sewer pipe, and 11 pump stations. The collection system in the study area also conveys wastewater flow from Northeast Tacoma, parts of Pierce County, City of Milton (via Pierce County), and City of Fife. The flow generated from these areas is treated at the CTP (Dressler 2023). **Exhibit 10-1** shows locations of trunk lines, conveyance lines, pump stations, and the CTP within the study area.

The City's wastewater collection system infrastructure ranges in age from 1 to 115 years, with 40% of infrastructure more than 50 years old. Built in 1952, the CTP has been upgraded over time to address new regulatory requirements (Dressler 2023).

Wastewater from the study area is treated at the CTP, which serves the City of Tacoma and approximately 20,000 customers in Fife, Fircrest, and unincorporated Pierce County. The CTP is approximately 1.5 miles up the Puyallup River, at 2201 Portland Avenue E, within the study area. During large storm events, the plant can receive and treat more than 130 million gallons of wastewater a day.

The CTP was upgraded in 2008, and in 2014, the Pierce County Flood Control Zone District Board provided \$6 million in locally matched funds to build a floodwall around the CTP. In 1995, the City implemented inflow and infiltration program. In addition, the City spends \$4 million per year upgrading or replacing old sewer pipes that allowed groundwater and surface water to seep into the sewer system through damaged joints. The City uses trenchless technology to upgrade old sewer pipes, which allows replacement of pipes without cutting into the streets. ES has no plans for new additions to the wastewater collection system in the study area. ES is currently planning to expand the solids treatment system and replace aging solids treatment infrastructure at the CTP (Dressler 2023).



SOURCES: Esri 2024; City of Tacoma 2024

EXHIBIT 10-1 Wastewater Infrastructure in the Study Area

The capacity of the City's wastewater system depends on both the quantity of flow generated by the City's customers and the amount of inflow and infiltration. Inflow is stormwater that enters the wastewater collection system through a direct connection to the system, such as a roof drain and downspout connection, foundation drain, or inappropriate storm drain connection. Infiltration is stormwater that enters the wastewater system by percolating through the soil and then through defects in private side sewers or public sewer systems (Dressler 2023).

The wastewater conveyance system accommodates future demand according to the quantity of flow generated (e.g., at residential, commercial, or industrial rates) and whether the flow is spread throughout the system or concentrated in a specific area. Similarly, whether the trunk system has capacity is dependent on increased density of the surrounding area (Dressler 2023).

One Tacoma lists a level of service (LOS) standard for sanitary sewers of 200 gallons per capita per day (maximum monthly flow) and 400 gallons per capita per day (peak hydraulic or peak instantaneous flow) (City of Tacoma 2019). One Tacoma states that the City is planning to develop a comprehensive sewer plan in the next few years. This plan will provide a long-term strategy for the City's wastewater facilities. Expanded wastewater capacity will likely be required before 2040. To meet this need, the City will consider upgrading existing facilities, contracting for additional service, or building new facilities. The City also plans to maintain and expand the existing collection system to serve projected growth (City of Tacoma 2019).

Pierce County and the City of Fife own capacity at the CTP. The Pierce County Unified Sewer Plan (USP), published in 2001 (Pierce County 2001), is in the process of an update, to be published in 2025. The USP set out the treatment and conveyance facility improvements necessary to provide service to as-yet undeveloped parts of existing service areas and adds several urban growth areas, which had not been included within an area of planned service of another sewer utility. The USP outlined the recommended capital facilities plan for the Pierce County sewer utility and a 6-year plan for proposed improvements and forecast future plant improvements and expansions to meet the demands of residential, commercial, and industrial users. The 2025 USP update will document selected projects, prioritizations, and finance strategies; and will dovetail with the Pierce County Comprehensive Plan Update to be completed in 2024 (Pierce County 2023).

ES included the Tideflats Subarea in the recent update to its flow and load projections, which were based on VISION 2040 growth projections. For PSRC 2040, the population projection increase in the Tideflats Subarea from 2020 to 2040 was 1,604. The full build-out population for the Tideflats Subarea was projected to be 18,082 (Dressler 2023).

The Port of Tacoma expects some increased demand for wastewater services if the number of vessels requiring sewage or greywater disposal increases, if more refrigerated containers or cars require washing, or if more bathrooms are constructed. Currently, the Port provides portable toilets on its properties (Wilson 2023). Within the study area, wastewater service infrastructure includes collection pipes and the Central Treatment Facility.

The above estimates of wastewater service in the study area have likely declined due to the WestRock paper mill closure and loss of 400 employees (WestRock 2023; Wilson 2024).

10.1.3 Stormwater

The City of Tacoma ES provides stormwater services to the study area. Stormwater services include reducing water pollution and flooding by collecting water that leaves streets, yards, and driveways and diverting it to lakes, streams, rivers, and Puget Sound. ES stormwater infrastructure includes more than 500 miles of public stormwater pipe, more than 22,000 storm drains, four stormwater pump stations located in four areas, and numerous detention ponds or structures. ES also restores sites already affected by industry and urbanization (City of Tacoma 2023b, 2023c; Burk 2023).

The pump station area closest to the study area is Northeast Tacoma, which contains four detention ponds that contain surface water runoff from surrounding neighborhoods. Although a portion of this water flows to Joes Creek in King County, most flows to Commencement Bay, through the study area. The Leach Creek holding pond, located west of and outside of the study area, pumps high flows to surface water pipes that flow to the Thea Foss Waterway, which is within the study area (City of Tacoma 2023c).

All surface and stormwater in the study area in Tacoma drains from two regional watersheds: the Puyallup-White River watershed and the Chambers-Clover Creek watershed. These two watersheds are shaped by the natural landscape (e.g., steep slopes, gulches, streams, wetlands, and shorelines), the built environment (e.g., streets, sidewalks,

parking lots, and other development), and the City's stormwater collection system (e.g., pipes, detention ponds, and pump stations) (City of Tacoma 2023d). City of Tacoma ES defines nine sub-watersheds, one of which is the Tideflats study area. The Tideflats, a sub-watershed of the Puyallup-White River watershed, covers 2,112 acres and is the most industrial and commercial section of Tacoma. The Tideflats sub-watershed drains into the Sitcum Waterway, the Blair Waterway, and the Hylebos Waterway, all within the study area (City of Tacoma 2023b).

The City 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.

In addition, as part of the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit, the City maintains a Stormwater Management Program (SWMP) Plan (City of Tacoma 2023e). The SWMP Plan and related City of Tacoma Municipal Stormwater Permit is the City's plan for complying with the NPDES, which regulates the discharge of stormwater from the City's stormwater system. The SWMP Plan guides the storm drainage system operations of the City through the end of this NPDES permit term, which is August 2024. The Port of Tacoma is also an NPDES Phase I Municipal Separate Stormwater System (MS4) permit holder and is responsible for complying with this NPDES permit. Like the City of Tacoma, the Port is also required to maintain a Stormwater Management Program Plan for properties and infrastructure that it owns within the Tideflats Subarea (Wilson 2024).

The City of Tacoma is 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 Urban Waters Protection Plan will work in concert with other plans to achieve shared goals and community benefits, including the Climate Action Plan, Wastewater Comprehensive Plan, TPU Watershed Management Plan, TPU Water System Plan, and Urban Watershed Management Plan (City of Tacoma 2023d).

One Tacoma (City of Tacoma 2019) states that the LOS standards for stormwater management are 10-year, 24-hour design storm for private facilities less than 24 inches in diameter; and 25-year, 24-hour design storm for public facilities and for private facilities greater than or equal to 24 inches in diameter. The City stormwater system serves

the City population of approximately 219,000 residents and 121,000 employees (see Section 4.1, *Affected Environment*, of this EIS).

The City of Tacoma's 2021 Capital Facilities Program provides an inventory of existing facilities, forecast of future needs, proposed projects, and financing for proposed projects. In the future, the City of Tacoma will continue to work on an ongoing basis to maintain, upgrade, and expand its stormwater system. It anticipates an increasing emphasis on green infrastructure. The City determines on a case-by-case basis whether adequate capacity exists to serve new development within established LOS standards. If adequate capacity does not exist, detention facilities are required that comply with the current (2019) Stormwater Management Manual for Western Washington (Ecology 2019).

The City of Tacoma ES, Puyallup Tribe, and the Port currently share responsibility for stormwater infrastructure, and the Port of Tacoma anticipates continuing to provide stormwater infrastructure (e.g., drainage ditches) for its properties. The Port of Tacoma does not expect increases in demand for stormwater management. The Puyallup Tribe manages 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). Certain drainage ditches experience urban flooding; determining which entity holds the responsibility for maintenance of infrastructure is important for the future (Wilson 2023). Within the study area, stormwater infrastructure includes collection pipes, storm drains, drainage ditches, outfalls, and potentially pump stations.

10.1.4 Electricity

Tacoma Power (a division of TPU) provides electricity to the study area, which is located within its 180-square-mile service area. The service area includes Tacoma, Fircrest, University Place, and Fife, as well as parts of Steilacoom, Lakewood, Joint Base Lewis-McChord, and unincorporated Pierce County. Tacoma Power serves 162,368 residential customers (55% within the city limits) and 19,262 commercial customers (Tacoma Power 2023a).

Eighty-nine percent of the power Tacoma Power provides is from hydroelectric sources. More than half of Tacoma Power's supply comes from contracts with Bonneville Power Administration (BPA). Of Tacoma Power's hydroelectric-sourced supply, 46% is sourced from Tacoma

Power's own hydroelectric projects (Cowlitz River Project, Nisqually River Project, Wynoochee River Project, and Cushman Hydroelectric Project). The remaining supply comes from wind, nuclear, biomass, solar, and other sources (Tacoma Power 2023a).

Tacoma Power's infrastructure system consists of 2,386 miles of transmission and distribution lines, four main/transmission substations, five switching stations, 49 distribution substations, 14 dedicated distribution substations, 23 BPA customer substations, and eight generations switchyards (Tacoma Power 2023a).

Tacoma Power completed an IRP in 2022 (Tacoma Power 2022a). The IRP helps plan for the continuation of reliable, low-cost power provision to customers in the future. Each Tacoma Power IRP (updated every 2 years) looks out over 20 years. The 2022 IRP results in a strategy that includes (1) renewing the BPA contract in 2028, (2) achieving conservation goals identified in the Conservation Potential Assessment (AEG 2022), (3) pursuing an additional 10 megawatts of power to increase reliability, and (4) deciding whether to join the Western Resource Adequacy Program (WRAP), which works to ensure that the region has a reliable power supply. Tacoma Power is listed as a current member of WRAP (WRAP 2023).

Tacoma Power is currently working on projects to improve service, including (1) electric meter upgrades; (2) relocation of power utilities due to transit projects (Pierce Transit Bus Rapid Transit and Sound Transit Tacoma Link Extension); and (3) relocation of poles, wires, and equipment as part of the East 64th Street Improvement Project and the Canyon Road Project.

One Tacoma lists LOS standards for electricity of voltage level plus or minus 5%, and an average annual system outage duration of 75 minutes or less (City of Tacoma 2019).

Over the last approximately 10 years, Tacoma Power has experienced a period of stable customer demand that it has been able to meet comfortably with its existing power supply. However, future changes are expected, including scenarios where Tacoma Power may need to supplement its current power supply with additional generating resources (Clark 2023).

From 2004 to 2023, Tacoma Power's load experienced a small increase, of 0.07% per year, on average. Tacoma Power anticipates that their conservation program, building and energy efficiency codes and standards, and solar sources will reduce the load in the future,

while electric vehicle adoption and building fuel switching will increase the load. Forecasts indicate that electricity loads will decrease during the period 2023 to 2043 at a rate of 1.57% per year, on average. Future projections may consider more current electrification and conservation potential, and therefore may reflect a slight increase rather than a decrease (Liu 2024). Tacoma Power may experience growth in customer demand not only from building and vehicle electrification, but also from growth of data centers and policies and incentives to support green industrial development. Tacoma Power is analyzing the extent to which customer demand might grow, and at what rate, over the coming decades (Clark 2023).

The South Service Area, Tideflats (which includes the Port of Tacoma and is the study area for this EIS), and downtown Tacoma are expected to experience the most load growth. Tacoma Power anticipates transmission constraints in meeting future load growth, system reliability, and operational flexibility, and expects to address these constraints and the need for one or more new distribution substations and expansion of the existing distribution substations to meet the future load. One Tacoma notes that aging electrical facilities require replacement programs to ensure the system is reliable (City of Tacoma 2019).

The Port of Tacoma and the Northwest Seaport Alliance (NWSA) have adopted the Northwest Ports Clean Air Strategy, committing to phasing out air emissions from seaport-related activities by 2050. Electrification is one way to reduce emissions, which is why the Port regularly invests in improvements to reduce fossil fuel usage related to cargo operations. Examples include the Clean Trucks Program, shore power, and electric cargo-handling equipment (Wilson 2023). The Port and NWSA are developing an energy infrastructure planning study called the South Harbor Electrification Roadmap (SHERM). The SHERM will be a flexible plan to deliver infrastructure upgrades that electrify heavy industrial uses and support zero emissions operations at the NWSA's Tacoma Harbor facilities, working toward environmental goals to reduce greenhouse gas and air pollutant emissions and anticipating longer term commercial and policy drivers to transition to zero emissions operations. The SHERM will help the Port and NWSA identify opportunities for electrification and the power upgrades that will be needed on- and off-terminal to make the transition to zero-emissions. Tacoma Power is assisting with the effort to ensure alignment among the Port, NWSA, and the City of Tacoma (Wilson 2023).

The plan will consider a range of zero emissions technology uptake scenarios, recognizing the potential of other energy sources and existing practical limitations of battery-electric technology (Wilson 2023; Port of Tacoma 2023b). Within the Tideflats study area, Tacoma Power operates a substation and transmission and distribution lines. Tacoma Power also has a limited number of portable substations that can be installed at existing substations during extreme emergency events (Nierenberg 2023).

The above estimates of electricity use in the study area have likely declined due to the WestRock paper mill closure and loss of 400 employees (WestRock 2023; Wilson 2024).

10.1.5 Natural Gas

Puget Sound Energy (PSE) provides natural gas to the study area, which is part of its 900,000-customer, 6,000-square-mile service area covering 10 counties and approximately 4 million residents (PSE 2023a). PSE acquires natural gas through contracts with various producers and suppliers in the western U.S. and Canada. The gas PSE acquires is transported into the PSE service area through large interstate pipelines owned and operated by another company. When PSE takes possession of the gas, it is distributed to customers through more than 26,000 miles of PSE-owned underground gas mains and service lines in streets, public properties, and private properties (PSE 2023b). After wellhead pumps bring natural gas to the earth's surface, the gas is processed and purified, and then travels along interstate pipelines to compressor stations. Compressor stations maintain gas pressure and are located every 50 to 60 miles along the interstate pipelines. Natural gas is often stored in large underground reservoirs to help meet spikes in demand. When natural gas reaches a city gate station, it is metered and delivered to customers through the local gas mains, small-diameter service lines, and customer meters (PSE 2023a).

PSE's 2023 Gas Utility IRP near-term goals include expanding natural gas capacity rights, continuing engagement and development of equity considerations, acquiring cost-effective conservation, participating in green hydrogen development, and reducing its emissions profile by exploring renewable natural gas. Medium-term priorities (2030 to 2050) include exploring clean technology and fuel and reducing transport pipeline capacity contracts when decreasing loads allow (PSE 2023b).

PSE operates a liquefied natural gas (LNG) facility at the Port of Tacoma (1001 E Alexander Avenue within the study area) that provides local transportation companies with a cleaner fuel alternative. The Port of Tacoma PSE LNG facility can also provide residential and commercial customers with natural gas reserves to maintain dependable service on the coldest days of the year. LNG can be used as a marine fuel and is a better alternative to traditional heavy fuel oil because it burns cleaner than traditional heavy fuel oils. TOTE Maritime is a Port customer and domestic shipping company that serves Alaska. TOTE Maritime made major investments in retrofitting its vessels to be able to use LNG and therefore reduce emissions in the community (Wilson 2023).

The Port of Tacoma owns the facility and leases it to PSE (Port of Tacoma 2023a). Within the study area, natural infrastructure includes distribution service lines, customers meters, and the Port of Tacoma LNG facility. Natural gas use in the study area may have declined due to the WestRock paper mill closure and loss of 400 employees (WestRock 2023; Wilson 2024).

10.1.6 Communications and Data

TPU and private providers provide communications and data infrastructure and services to the study area (City of Tacoma 2019). Private providers include Internet Essentials, CenturyLink, Rainier Connect, AT&T Access, InterConnection, Xfinity, T-Mobile Home Internet, Visat, and HughesNet (City of Tacoma 2023f; InMyArea 2023). Service to individual properties is provided on a property-by-property basis by the service provider. Private companies respond to market-driven demand by constructing and improving infrastructure to continue their business of providing data and communications services to area residents and businesses.

In 2022, The City of Tacoma partnered with Washington State and private entities to study the implementation of a 5G network in the Tideflats area. Two of the key drivers for the 5G network study were (1) that today's fixed connectivity locations are constraining Port of Tacoma operations and (2) the need for greater network coverage that is flexible and secure (Washington Maritime Blue 2022).

Fiber-optic communication uses optical cables to transmit signals over long distances by turning electronic signals into pulses of light. Fiber-optic cables typically provide faster data transmission than wireless networks. Tacoma Power is building sections of fiber-optic cable in the

Tideflats Subarea. See Section 8.2, *Affected Environment*, of this EIS for a discussion of placing fiber in roadways to help with deploying Intelligent Transportation Systems (ITS) in the Tideflats Subarea. With more fiber-optic cable development, the use of fiber-optics for transmitting information could increase in the Tideflats Subarea (Wilson 2024).

Within the study area, communications and data infrastructure includes network distribution lines. The Federal Communications Commission (FCC)-registered cell phone tower closest to the study area is near Union Station on S 19th Street, at the western edge of the study area (City-Data 2023).

10.1.7 Solid Waste

The City of Tacoma ES provides solid waste services to the study area. ES provides curbside services to more than 58,500 residential and commercial customers in Tacoma, also offering garbage, recycling, and food/yard waste services; and self-haul options for garbage, recycling, yard waste, and household hazardous waste disposal at the Tacoma Recovery & Transfer Center (formerly the Tacoma Landfill) (City of Tacoma 2023g).

In 2014, Tacoma generated 370,520 tons of material, and had a population of 200,900 people. Dividing population by generation yields 1.84 tons of material per capita on an annual basis (City of Tacoma 2015a). One Tacoma reports an updated LOS standard of 1.13 tons (2,260 pounds) of solid waste service per capita per year, which equates to 66,105 tons of solid waste per year, assuming 58,500 service area customers (City of Tacoma 2019).

In May 2014, the Tacoma City Council passed Resolution No. 38907 reaffirming the City's commitment to divert 70% of Tacoma's solid waste from landfills by 2028. Of the 370,500 tons of material generated in 2014, 55% of the material was recovered for recycling or composting. To achieve the 70% recycling rate by 2028, the City will need to recover an additional 62,000 tons, or about 50% of the recoverable tons in Tacoma's disposed waste stream. These tons will need to come from new and expanded programs, investments, incentives, regulations, and other initiatives. The Sustainable Materials Management Plan includes a planning phase beyond 2028, which includes optional strategies to exceed 70% diversion (City of Tacoma 2015a).

At the time One Tacoma was prepared, current landfill capacity was expected to be sufficient for at least 6 years. The City does not anticipate constructing a new landfill in the future. The Sustainable Materials Management Plan (City of Tacoma 2015a) sets forth a waste management plan and ways to divert waste from the landfill, which may reduce the rate of increasing demand for solid waste service between now and 2040 (City of Tacoma 2019).

The Port of Tacoma expects a potential increase in demand for solid waste services associated with its future developments, especially if that development is manufacturing. They predict the increase in demand would be for specialty recycling services (e.g., special metals), rather than typical garbage and recycling (Wilson 2023). Solid waste generation in the study area has likely declined due to the WestRock paper mill closure and loss of 400 employees in 2023 (WestRock 2023; Wilson 2024).

The City of Tacoma ES has stated that the contract with Pierce County for use of the County landfill ends in 2030 and will probably not extend. ES will then look for new disposal options. One option is to build an intermodal transfer facility to haul garbage by rail to a regional landfill in Washington or Oregon. At least three mega-landfills exist in Washington or Oregon that have hundreds of years of capacity and are designed for haul-in from other jurisdictions. ES also has the option of constructing centralized compactors or shared garbage/recycling facilities for high-density commercial or residential customers (Griffith 2023).

Private companies that provide solid waste collection services in the Tideflats Subarea include Waste Management, which collects general recyclables, and Radius Recycling and Calbag Metals Company, which collect and recycle metal. Metal collection and recycling is important for tenants in the Tideflats Subarea, particularly manufacturing companies (Wilson 2024).

10.2 Existing Policies, Plans, and Regulations

Policies, plans, and regulations described in this section inform how utilities in the study area (potable water, wastewater, electricity, natural gas, communication and data, and solid waste) are managed and operated. Note that Washington State and City of Tacoma codes could potentially change over the 20-year planning horizon.

10.2.1 Potable Water

- **The Clean Water Act (CWA)** is a federal law governing water pollution. The CWA is administered by the U.S. Environmental Protection Agency (EPA) in coordination with state governments and establishes the structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters (EPA 2024).
- **WAC 296-307-09512** is related to the provision of potable water resources.
- **Washington Municipal Water Law** administered by the Washington Department of Ecology (Ecology) and the Washington Department of Health relates to municipalities' water rights, how much water they have, and where they can use it; ensuring safe and reliable drinking water; and regulation of the planning and engineering component of water systems.
- **The Tacoma Water 2020-2025 Strategic Plan** represents and responds to new needs and fills gaps at the utility; identifies values, mission, and vision of the utility; and lists objectives, initiatives, and next steps. Implementation of the Strategic Plan will involve approving charters to provide direction and resources to fulfill the work and measure plan performance (Tacoma Water 2020).
- **The Tacoma Water Green River Watershed Strategic Plan 2022-2027** is a comprehensive strategy to prioritize Tacoma Water's work within the watershed over a 5-year planning horizon (Tacoma Water 2022).
- **The Tacoma Water Habitat Conservation Plan** presents a program to satisfy water supply concerns and to protect the natural resources of the Green River system in the future (Tacoma Water 2001).
- **The Tacoma Water Wellhead Protection Program** was prepared and updated to comply with the Washington State Department of Health's regulations related to wellhead protection. This program updates potential contaminant sources, notifies owners and regulatory agencies, develops well maps, develops contingency plans, evaluates the adequacy of Tacoma Water's monitoring plan, and identifies additional steps to improve well protection (Tacoma Water 2015).
- **The Tacoma Water Integrated Resource Plan (IRP)** was prepared to improve Tacoma Water's ability to manage available water supplies, plan for new supplies as needed, and protect streamflow for fish in the Green River (Tacoma Water 2018b).
- **The Tacoma Water Conservation Plan** focuses on peak demand reduction, including a goal of reducing residential and small/medium commercial average daily use between May and

October by 0.274 million gpd over 10 years. This plan also includes educational programs and partnerships, EnviroHouse workshops, public library events, school programming, community meetings, fairs, and other educational outreach activities (Tacoma Water 2018a).

- **The Tacoma Water System Plan** demonstrates system capacity and how the system will address present and future needs in a manner consistent with other relevant plans and applicable laws.
- **Local approvals** ensure available water capacity prior to permit issuance, such as a Certificate of Water Availability or Water Adequacy Letter.
- **Tacoma Municipal Code (TMC), Chapter 12.10, Water Regulations and Rates.** Chapter 12.10 establishes regulations for water utility services, such as applications for new service; conditions for termination of service; service, installation, and development fees; and fire hydrant use. All Tacoma Water customers are required to comply with Chapter 12.10 of the TMC as a condition of water service.

10.2.2 Wastewater

- **The CWA** is a federal law governing water pollution. The CWA is administered by EPA in coordination with state governments and establishes the structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters (EPA 2024a).
- **CWA NPDES Permit Program.** The State of Washington currently issues and enforces NPDES permits related to wastewater treatment plants.
- **CWA National and Local Pretreatment Standards** require industrial facilities to pre-treat wastewater discharged to public water treatment facilities.
- **CWA Sewage Sludge Use and Disposal Program** is a permit program covering the use and disposal of sewage sludge.
- **CWA Chapters 35.67, 36.94, and 70A.212** relate to sewer systems and domestic waste treatment plants.
- **The Side Sewer and Sanitary Sewer Availability Manual** sets forth policies and procedures for new and existing side sewer connections to the City wastewater sewer system. The purpose of this manual is to provide a set of standards that (1) describe the conditions that make the City's public sanitary sewer system available to parcels; (2) reduce the potential for inflow and infiltration into the City's public sewers; and (3) ensure that property owners receive a well-functioning, long-lasting side sewer (City of Tacoma 2021a).

- **Special Approved Discharges to Wastewater System.** A special approved discharge permit is required to discharge any additional or short-term waste into the wastewater system (City of Tacoma 2023a).
- **TMC Chapter 12.08, Wastewater and Surface Water Management – Regulation and Rates.** Policies in Chapter 12.08 allow the City to comply with all applicable state and federal laws including, but not limited to, the Clean Water Act, General Pretreatment Regulations, 40 Code of Federal Regulations (CFR) Part 403, with the objectives, in part, to prevent the introduction of inadequately treated pollutants into receiving waters, to prevent the introduction of pollutants that would keep the treatment system from working adequately, and to protect employees and the general public (City of Tacoma 2023a).

10.2.3 Stormwater

- **The CWA** is a federal law governing water pollution. The CWA is administered by EPA in coordination with state governments and establishes the structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters (EPA 2024a).
- **CWA NPDES Permit Program.** The State of Washington currently issues and enforces NPDES permits related to industrial, construction, and municipal stormwater general permits. The NPDES Permit allows municipalities to discharge stormwater runoff from municipal drainage systems into the state's waterbodies. Discharges are allowed only as long as municipalities implement programs to protect water quality (Port of Tacoma 2024). The Port of Tacoma manages water quality permits, including NPDES permits for municipalities, industrial activities, sand and gravel sites, and construction activities (Wilson 2024).
- **2019 Stormwater Management Manual for Western Washington.** The Stormwater Management Manual for Western Washington (Stormwater Manual) provides guidance on the measures necessary to control the quantity and quality of stormwater. Local municipalities use the Stormwater Manual to set stormwater requirements for new development and redevelopment projects. The Stormwater Manual is mostly used for NPDES stormwater permits and compliance (Ecology 2019).
- **City of Tacoma Stormwater Management Program (SWMP) Plan.** On August 1, 2019, the Washington State Department of Ecology (Ecology) issued the 2019-2024 NPDES Stormwater Permit for Phase I Municipalities (NPDES Permit) to all Phase I Municipalities including the City of Tacoma and Pierce County. To comply with the NPDES Permit, the SWMP Plan documents and

guides the City's activities during the NPDES Permit term from August 1, 2019, through July 31, 2024 (City of Tacoma 2023e).

- **2023 Port of Tacoma Stormwater Management Plan (SWMP).** The SWMP documents the Port's adaptive management approach to the requirements of the Phase I Municipal Stormwater Permit (MS4) issued by Ecology (Permit no. WAR044200) (Port of Tacoma 2023c).

10.2.4 Electricity

- **Federal Energy Regulatory Commission (FERC).** FERC regulates the interstate transmission of electricity and licenses hydropower projects (FERC 2023a).
- The **Energy Policy Act of 2005** addresses energy production in the United States, including electricity. The Energy Policy Act gave FERC additional responsibilities as outlined and updated in the FERC Strategic Plan (FERC 2023b).
- **Washington Utilities and Transportation Commission (WUTC).** The WUTC regulates private, investor-owned electric utilities in Washington. The UTC is responsible for ensuring that regulated companies provide safe, reliable, and equitable service to customers at reasonable rates, while allowing them the opportunity to earn a fair profit (WUTC 2024).
- **Washington Department of Commerce 2023 Biennial Energy Report** updates the 2021 State Energy Strategy, which was developed and published by the State Energy Office at the Washington State Department of Commerce. Designed to provide a roadmap for meeting the state's need for affordable and reliable energy supplies and its greenhouse gas emissions limits, the strategy outlines the path to a clean, inclusive energy economy by 2050 (Commerce 2023).
- **Northwest Power and Conservation Council (NPPC) 2021 Northwest Power Plan's** strategy contains elements including (1) energy efficiency, (2) demand response, (3) renewable resources, (4) existing resources, and (5) regional collaboration (NPCC 2021).
- The **Tacoma Power Customer Energy Programs Plan 2022–2023** outlines Tacoma Power's operational approach for the years 2022 and 2023, including conservation programs (Tacoma Power 2022b).
- The **Tacoma Power Integrated Resource Plan (IRP)** helps plan for the continuation of reliable, low-cost power provision to customers in the future (Tacoma Power 2022a).
- The **Tacoma Power Electric Service Handbook** is a guidance document for acquiring electrical services and provides general specifications for new electrical services (Tacoma Power 2023b).

- **Tacoma Public Utility's Electrical Construction Standards** contain residential and construction standards (Tacoma Power 2023c).
- **TMC, Chapter 12.06A.** New developments and redevelopments typically require permitting and compliance with the City's Electrical Code. The Tacoma Electrical Code contains provisions necessary for safety compliance. Other codes that may apply include the National Electrical Code (NEC), Washington Administrative Code (WAC) 296-46B, Revised Code of Washington (RCW) 19.28, National Electrical Safety Code (NESC), Tacoma Power Customer Service, and other standards for the installation of electrical equipment.
- **Tacoma Power Customer Service Policies.** The TPU Board adopted Customer Service Policies in the interest of consistency, safety, efficiency, and economy in the distribution of electricity. The purpose of the policies is to help customers obtain electrical service and to guide Tacoma Power employees in providing that service. The policies are subject to revision by the TPU Board to achieve these objectives and purposes (Tacoma Power 2023d).

10.2.5 Natural Gas

- **United States Code Chapter 15B – Natural Gas** relates to the regulation of natural gas companies, LNG terminals, natural gas import and export, safety, rates, and other natural gas topics.
- **Washington UTC.** The WUTC regulates private, investor-owned natural gas utilities in Washington. The WUTC is responsible for ensuring that regulated companies provide safe, reliable, and equitable service to customers at reasonable rates, while allowing them the opportunity to earn a fair profit (WUTC 2024).
- The **UTC Pipeline Safety Program** provides standards for natural gas pipeline operations and inspects natural gas pipelines operating in Washington in accordance with federal standards. WUTC is the primary agency responsible for the regulatory oversight of natural gas pipelines in Washington State (WUTC 2023).
- **Title 49, CFR Part 192.** PSE is subject to full compliance with the applicable provisions of Title 49, CFR Part 192, which address federal safety standards related to the transportation of natural gas.
- **Federal Energy Regulatory Commission (FERC).** FERC regulates the interstate transmission of natural gas and reviews proposals to build liquefied natural gas terminals and interstate natural gas pipelines (FERC 2023a).
- The **Energy Policy Act of 2005** gave FERC additional responsibilities as outlined and updated in the FERC Strategic Plan (FERC 2023b).

- The **PSE 2023 Gas Utility Integrated Resource Plan (IRP)** uses supply and demand forecasts to plan for future resource needs (PSE 2023b).

10.2.6 Communications and Data

- The **Federal Communications Commission (FCC)** regulates interstate and international communications by radio, television, wire, satellite, and cable. The FCC is responsible for implementing and enforcing federal communications law and regulations (FCC 2024).
- The **UTC** regulates the rates and services of telephone companies operating in the State of Washington.
- Projects involving telecommunications facilities are regulated on a case-by-case basis and require coordination between the City and service providers to ensure that land use planning is compatible with service capacity, design, and equipment.
- **TMC Title 16 for Cable Systems, Open Video Systems, Telecommunications Systems, and Private Communications Systems** outlines policies and regulations for licensing, systems within the public right-of-way, and establishment and operation of franchises.

10.2.7 Solid Waste

- The **Resource Conservation and Recovery (RCRA)**, administered by EPA, regulates household industrial and manufacturing solid and hazardous waste. RCRA's goals are to protect citizens from the hazards of waste disposal; conserve energy and natural resources by recycling and recovery; reduce or eliminate waste; and clean up waste that has been spilled, leaked, or improperly disposed (EPA 2024b).
- **Ecology's Solid Waste Management Program** implements laws addressing plastics, recycling, and litter. Four new laws were added to the solid waste program in 2021, addressing single-use plastic items, the solar panel takeback program, and reimbursing local governments for litter clean-up on highway ramps (Ecology 2024).
- **RCW 36.58 Solid Waste Disposal** sets regulations at the state level for solid waste. Regulations address topics such as acquisition of waste or recycling sites, waste/recyclables handling, fees, disposal, facilities, contracts, disposal districts, and collection/transportation of waste and recyclable material.
- **City of Tacoma Resolution 38907** is related to the City Climate Action Plan and in support of a 70% waste diversion goal (City of Tacoma 2014).

- The **Tacoma-Pierce County Solid and Hazardous Waste Management Plan: 2021–2040** is the 20-year planning document for the management of Pierce County’s comprehensive solid waste system (Tacoma-Pierce County 2021).
- The **City of Tacoma Sustainable Materials Management Plan** aims to help the community achieve a 70% waste diversion goal set in 2008 with Resolution 38907 through recycling and other waste management strategies. The plan would meet the 70% waste diversion goal by 2028 (City of Tacoma 2015a).
- The **City of Tacoma 2016 Environmental Action Plan** also aims to help the community achieve waste diversion goals (City of Tacoma 2016).

10.2.8 Policies, Plans, and Regulations Pertaining to Utilities in General

One Tacoma Comprehensive Plan

The City of Tacoma’s One Tacoma: Comprehensive Plan (One Tacoma) guides Tacoma’s development over the long term and describes how the community’s vision for the future will be achieved. One Tacoma guides decisions on land use, transportation, housing, capital facilities (including those related to utilities), parks, and the environment. It also sets standards for infrastructure and identifies funding sources (City of Tacoma 2019).

Chapter 9 of One Tacoma, the Public Facilities and Services Element, sets goals and policies for public infrastructure and utilities to provide a framework for addressing the need for new and upgraded facilities to support existing and future development. Goal PFS-4 is to “(p)rovide public facilities that address past deficiencies, particularly those in underserved areas, meet the needs of growth, and enhance the quality of life through acceptable levels of service and priorities.” The City has set forth policies to meet Goal PFS-4, including maintaining level of service standards for electric utilities, sanitary sewers, solid waste, stormwater management, and potable water (City of Tacoma 2019).

City of Tacoma Six-Year Capital Facilities Program

The City of Tacoma Six-Year Capital Facilities Program (CFP) for 2021–2026 identifies and describes projects that are proposed for funding during the 2021–2026 timeframe and is an element of One Tacoma. Proposed projects in the CFP must be consistent with and implement the policies of One Tacoma. The City of Tacoma amended the CFP in 2020 pursuant to Growth Management Act (GMA)

requirements (RCW 36.70A.130). This 2021–2026 CFP was considered and adopted by the City Council in 2020 concurrently with the 2021–2022 Biennial Budget. GMA requires communities to plan for capital facilities and utilities to ensure that there is an adequate level of service in place to meet community needs over time. Utilities projects identified in the 2021–2026 CFP include the following and are sponsored by various entities including not only the City (TPU and the Public Works Department) but also PSE. Citywide project categories include three improvement areas related to surface water (stormwater management), five improvement areas related to Tacoma Power, five improvement areas related to Tacoma Water, and two improvement areas related to wastewater (City of Tacoma 2020). No Tacoma Power projects are planned within the Tideflats study area (Nierenburg 2023).

Port of Tacoma 2021–2026 Strategic Plan

One of the strategies in the Port of Tacoma’s current 2021–2026 Strategic Plan to support their goal for economic vitality is to develop and support land use and infrastructure policies that protect the cargo supply chain and promote a robust employment base (Port of Tacoma 2021). One of the Port’s nine major departments or service areas is the Maintenance (Equipment and Facilities) department. The Port’s major business areas are container shipping terminals, bulk terminals, and real estate. The Northwest Seaport Alliance (NWSA) manages the five Port-owned container shipping terminals and holds the license to about two-thirds of the Port-owned property in the Tideflats Subarea to support container shipping (Port of Tacoma 2021).

City of Tacoma 2030 Climate Action Plan

The Tacoma City Council passed Resolution No. 40509 in 2019, which called for a climate action plan to reduce community greenhouse gas (GHG) emissions and adapt to climate impacts. The 2030 Climate Action Plan (CAP; City of Tacoma 2021b) updated the 2016 Environmental Action Plan (City of Tacoma 2016). Many of the 46 near-term, high-impact “Actions for the City” to complete by 2024 require partnering with City utility providers, including the City public works department, City solid waste management, and TPU, as well as other governments and agencies involved in the Tideflats Subarea Plan (the Puyallup Tribe and the Port of Tacoma). “Actions for the City” related to utilities include the following:

- Conduct a study focusing on flooding impacts on critical roads, other infrastructure, and steep slopes due to increasing intense

- rainfall events. Integrate findings into City development codes, emergency management, and capital planning.
- Improve commercial energy codes to reduce most fossil fuel use.
 - Using data from new advanced water meter infrastructure, communicate and educate residents and businesses about water consumption patterns and probable leaks. Encourage and support timely leak repair.
 - Include in the 2022 Tacoma Power IRP (Tacoma Power 2002a) an analysis of a scenario consistent with the City of Tacoma’s “Net-Zero Scenario” to ensure adequate electricity supply for transportation electrification, electrification of building heating, and electrification of industrial process load. Include in the IRP any analysis from Tacoma Power’s Transmission and Distribution Section investigating ways to upgrade or manage the distribution system to enable electrification.
 - Develop program to ban food waste from garbage.
 - Reduce the construction and demolition waste stream by:
 - a) Requiring recycling of recoverable construction and demolition materials when market capacity is established. Actively seek out opportunities and partnerships.
 - b) Establishing deconstruction requirements as part of the demolition permit process.
 - Enhance safe strategies for diverting high GHG impact reusable and recyclable materials from the waste stream at the Tacoma Recycling and Transfer Center (City of Tacoma 2021b).

Climate Vulnerability Assessment for the Tideflats Subarea (see Appendix G)

The Climate Vulnerability Assessment shows a high level of long-term impact on wastewater and a medium level of long-term impact on stormwater and power.

Puyallup Tribal Code

A portion of the study area is located within the Puyallup Tribe of Indians Reservation and Tribal-owned parcels (including ceded and fee-owned lands and usual and accustomed areas). As a sovereign nation, the Indians of the Puyallup Tribe of the Puyallup Reservation (Puyallup Tribe) are governed by the Tribe’s legislative acts, referred to the Puyallup Tribal Codes (PTC); the Tribe’s Constitution and Bylaws, adopted and subsequently amended by vote of the Tribal membership; and the Treaty of Medicine Creek between the United States and the Puyallup and other tribes. The PTC includes

Chapter 10.08, Water Quality Standards for Surface Water (PTC 2023). In addition, the Puyallup Tribe is involved in formal and informal consultation with state and federal agencies under many of the laws and regulations listed previously. The Tribe also provides review and input on local decisions made under the State Environmental Policy Act (SEPA) or GMA.

10.3 Potential Impacts

This section evaluates the alternatives based on the thresholds of significance presented below for consistency with planned growth and capital plans, the need for new projects or upgrades, and level of service.

10.3.1 Thresholds of Significance

Thresholds of significance include:

- **Consistency with Planned Growth and Capital Plans.** The alternative would result in inconsistencies with planned growth and capital plans for the utility system.
- **Need for New Projects or Upgrades.** The alternative would require major, new not-currently-planned projects or initiatives for utility system upgrades to accommodate redevelopment.
- **Level of Service.** The alternative would negatively affect the ability of utility service providers to maintain reliable service to customers.

10.3.2 Impacts Common to All Alternatives

The evaluation of potential impacts considers how the built-out housing and jobs capacity associated with each alternative would affect utilities. The additional housing and jobs are used to represent the additional economic activity associated with the alternatives' more intense land uses in the Tideflats Subarea. Utility usage in a manufacturing and industrial area such as the Tideflats Subarea is also driven by the type of industry. For example, a manufacturing company may have an automated process that uses large quantities of water, but only a few employees who operate the machinery. This EIS is programmatic, which means that specific land uses and their exact locations are not known. Therefore, the housing and jobs build-out estimates are used to estimate the additional demand for utility use.

Section 4.1.1, *Existing Policies and Regulations*, of this EIS states that Tacoma's adopted growth targets are 105,977 new residents and

70,800 new jobs between 2020 and 2044, with a large increase in the jobs to housing ratio. With roughly 10% of the city’s total employment and almost half of its manufacturing or industrial employment, the study area accounts for a significant portion of the City of Tacoma’s and Pierce County’s industrial employment.

Table 10-1 lists characteristics of each alternative that affect the number of utilities customers (households and businesses).

TABLE 10-1 Characteristics Affecting Number and Distributions of Utilities Customers, by Alternative

Measure	No Action	Alt. 2	Alt. 3	Alt. 4
Employment growth 2020–2044 (represents new non-residential customers)	1,048	5,334	8,529	1,048
New residential customers (based on housing growth 2020–2044 multiplied by 2.42 persons per household ^a)	489	0	1,186	489
New utilities customers	1,537	5,334	9,715	1,537

a. SOURCE: U.S. Census 2021

As indicated in Table 10-1, all alternatives have varying employment growth and small or negative growth in housing. The alternative that would result in the highest magnitude of impact on utilities would be Alternative 3, with 8,529 new employees and an estimated 1,186 new residents in the study area. Housing and jobs build-out would occur gradually between 2024 and 2044. The EIS nonetheless assumes growth at full built-out when evaluating potential environmental impacts associated with the alternatives.

Potential future population and employment growth associated with the alternatives will increase the demand for potable water and wastewater services, electricity, natural gas, communications and data, and solid waste. Incremental growth over the planning period would be addressed during the City’s regular capital facility planning efforts, in system plan updates, and as required by GMA. Each utility service provider in coordination with the City would evaluate levels of service and funding sources to balance with expected growth; if funding falls short, adjustments may be needed to level of service targets or to growth targets as part of regular planning under GMA.

The term “concurrency” is used in conjunction with LOS standards in One Tacoma (City of Tacoma 2019) to require that the public facilities and services (including certain utilities) necessary to support development shall be adequate to serve the development at the same

time (concurrent to when) the development is available for occupancy or use, or within a reasonable time as approved by the City, without decreasing current service levels below locally established minimum standards (City of Tacoma 2015b). The City of Tacoma has adopted a Concurrency Ordinance (TMC Chapter 13.16, Concurrency Management System) to ensure that all proposed projects are reviewed for availability of adequate capital facilities, including certain utilities. Utilities subject to the concurrency ordinance include potable water, wastewater, stormwater management, electricity, and solid waste (TMC 13.01.160.C).

Tacoma's 2021 Climate Adaptation Strategy (City of Tacoma 2021c) states that Tacoma is increasingly vulnerable to climate impacts, including sea level rise and flooding. Low-lying areas such as the study area that support the region's maritime and industrial activities will be heavily affected by sea level rise, warming temperatures, and precipitation changes and storm events leading to flood risk. Critical infrastructure including stormwater systems, wastewater facilities, and electric power facilities will be impacted by a range of climate hazards, including sea level rise, flooding, extreme heat, and landslides. Investing in infrastructure resilience strategies can create local jobs, support economic resilience, protect valuable assets, and improve safety during emergencies. Communities that travel to flooded areas for work or other daily needs will also be impacted by localized and coastal flooding. Port jobs and infrastructure could be at risk from flooding and other changes.

Actions included in Tacoma's 2021 Climate Adaptation Strategy include working with partners to develop a Sea Level Rise Master Plan and monitoring program to track sea level and shoreline changes at key locations, including the Tideflats area to determine needed adaptation actions. A second action related to the study area in the 2021 Climate Adaptation Strategy is to identify places where infrastructure can be set back as part of capital improvement project implementation (City of Tacoma 2021c).

Potable Water

New residential and commercial development associated with the alternatives would result in an increase in water demand, although the use of higher efficiency and low-flow fixtures could reduce per capita demand. The Tacoma Water System Plan and IRP (Tacoma Water 2018b) are updated periodically to address changing demand and supply, aging infrastructure, and possible system improvements or

expansions. The Tacoma Water IRP estimated that by 2020, Tacoma Water would serve 330,000 people and would grow to serve 350,000 people by 2050. Tacoma Water's planning considers water use at both home and at work. Therefore, the additional water use associated with this Tideflats Subarea Plan (Alternative 3, with the highest number of new employment and housing growth) is within the currently planned water growth. Tacoma Water is planning for the growth of the communities it serves and has contracts and opportunities to secure necessary water. This Subarea Plan is not inconsistent with planned growth or capital plans for potable water.

Development within the study area may require developer-financed improvements to water infrastructure serving that development. The City of Tacoma has a standardized process for requesting water connections. The study area may also require water system improvements to increase fire flow to meet current standards. Developers may be required to install improvements to the water system to ensure fire flow standards are met.

The Port of Tacoma does not anticipate a major increase in demand for water over the 2024–2044 planning horizon compared to existing conditions (Wilson 2023). Water demand related to Subarea Plan development could counteract the decrease in water demand associated with the closure of the WestRock paper mill in 2023 (Wilson 2024).

Development in the study area will be required to comply with the plans and regulations identified above in Section 10.2, *Existing Policies, Plans, and Regulations*. Periodic IRP updates will contain planned improvements that will accommodate future development. Given that development will occur gradually over the 20-year planning horizon and capital facility planning and IRP updates will address incremental needs as they arise, development related to this Subarea Plan is not expected to require major new projects or initiatives for potable water system upgrades that are not already planned. The level of service standard for potable water is addressed below for each alternative.

Wastewater

Development of any of the alternatives would increase demand on the local wastewater collection system and on the downstream conveyance and treatment facilities. The City's sewer service planning, together with Pierce County's sewer service planning, will consider upgrading existing facilities, contracting for additional service, building new

facilities, and maintaining or expanding the existing collection system to serve projected growth. Tacoma's 2021 Climate Adaptation Strategy considers that the Central Treatment Plant, located in the study area, is at high risk from climate change due to saltwater intrusion and inflow causing corrosion or system upsets. Large portions of the wastewater system in the Tideflats area are below the existing Base Flood Elevation and several feet below projected future extreme high tide (City of Tacoma 2021c).

The Port of Tacoma does not anticipate much growth over the planning horizon (2024–2044) in the Port's demand for wastewater services. Any increases in demand would be associated with increases in cargo volumes, an increase in ships at berth requiring disposal of sewage, or more bathrooms (Wilson 2023).

As noted above, ES has recently projected a population increase of 1,604 by 2040 and total population of 18,082 at build-out in the Tideflats Subarea, based on VISION 2040. The estimated maximum of 9,369 additional customers over 20 years in the study area is more than the 2040 PSRC projection and less than the full build-out projection. The study area discharges to the CTP, which has enough capacity to cover the projected flows, with the exception of the solids treatment process. ES is in the process of evaluating future expansion of the solids treatment process. The proposed growth for the Tideflats Subarea is covered with the previous and ongoing planning efforts that ES has completed. ES will continue to monitor development, including flows and loadings to the treatment plants, from across the city (Dressler 2023).

Although demand for wastewater services would increase, the application of regular capital facility planning, updated system plans, and existing regulations, plans, or other mitigation measures could reduce impacts associated with future growth under all alternatives. The gradual increase in demand for wastewater services over the 20-year planning horizon associated with the Subarea Plan would be consistent with planned growth and capital plans for utility systems. The increase in demand would be planned for in capital facility planning updates and is not expected to require unplanned wastewater system projects or initiatives. There are no current capacity issues in the Tideflats Subarea; ES will continue to monitor capacity as development occurs over time (Dressler 2023). The level of service standard for wastewater is addressed below for each alternative.

Stormwater

Development of any of the alternatives would increase demand on the stormwater management system to the extent that additional impervious surface is created and, therefore, more runoff occurs. The study area is highly developed and is mostly covered in impervious surface, so future increases in demand for stormwater facilities within the study area are limited. Tacoma's 2021 Climate Adaptation Strategy considers that tidally influenced stormwater conveyance and outfalls, many of which are located in the study area, are at high risk from climate change due to backwatering of outfalls (City of Tacoma 2021c). The City's stormwater management planning will consider upgrading existing facilities or building new facilities to serve projected growth, in compliance with GMA and the TMC.

The Port of Tacoma does not expect large increases in demand for stormwater management and expects to supply any stormwater infrastructure that it requires (Wilson 2023).

Although demand for stormwater management would increase, the application of regular capital facility planning, updated system plans, and existing regulations, plans, or other mitigation measures could reduce impacts associated with future growth under all alternatives. The gradual increase in demand for stormwater management over the 20-year planning horizon associated with the Subarea Plan would be consistent with planned growth and capital plans for utility systems. The increase in demand would be planned for in capital facility planning updates and is not expected to require unplanned stormwater management projects or initiatives. The Port of Tacoma would remain responsible for compliance with the NPDES Phase I MS4 Permit and maintenance of the Stormwater Management Program Plan for properties and infrastructure that it owns within the Tideflats Subarea (Wilson 2024). The level of service standard for stormwater management is addressed below for each alternative.

Electricity

Similar to potable water and wastewater, new residential and commercial development in the study area would increase demand for electricity over the 20-year planning horizon. In addition, efforts by the Port of Tacoma and other businesses in the study area to reduce carbon emissions would increase demand for electricity. Residences will also use more electricity as electric cars and appliances become more prevalent. Tacoma Power updates its IRP every 4 years to ensure that incremental growth in demand can be acknowledged, planned for, and

accommodated. Tacoma Power has acknowledged that the study area is one of a few in its service area that will experience the most load growth and anticipates addressing potential constraints and the need for one or more new distribution substations and expansion of the existing distribution substations to meet the future load.

The gradual increase in demand for electricity associated with the Subarea Plan would be consistent with planned growth and capital plans for power systems. The increase in demand would be planned for in Tacoma Power IRP updates and is not expected to require unplanned electricity generation or transmission projects or initiatives. The level of service standard for electricity is addressed below for each alternative.

Natural Gas

PSE will likely be able to accommodate the increase in demand for natural gas associated with development with the Subarea Plan if goals and priorities set forth in PSE's 2023 Gas Utility IRP are met, including expanding natural gas capacity rights, continuing engagement and development of equity considerations, acquiring cost-effective conservation, participating in green hydrogen development, and reducing its emissions profile by exploring renewable natural gas (PSE 2023b). Long-term priorities, such as using electricity rather than natural gas, exploring clean technology and fuel, and reducing transport pipeline capacity contracts when decreasing loads allow (PSE 2023b), would also help meet the additional demand. The gradual increase in demand for natural gas associated with the Subarea Plan would be consistent with planned growth and capital plans for natural gas systems. The increase in demand would be planned for in PSE's Gas Utility IRP updates and is not expected to require unplanned natural gas projects or initiatives. The level of service standard for natural gas is addressed below for each alternative.

Communications and Data

Communications and data services are provided by TPU and several different private companies for the existing 11,479 jobs (see Table 4-2) and 1,114 residents (see Section 4.1) in the study area. Many different providers serve the study area, and increases in employment and the number of residents would be incremental and gradual over the 20-year planning horizon. Private companies would likely respond to increasing demand with expansions or improvements to their capacity to provide service. The City has partnered with Washington

State and private entities to study providing a 5G network to the study area (Washington Maritime Blue 2022). For these reasons, TPU and private providers would likely be able to accommodate the increase in demand. Because providing communications and data services is distributed among several entities, the increase in demand would be anticipated in the market and is not expected to require major unplanned data or communications projects or initiatives.

Solid Waste

Each alternative would result in an increase in employees and residents in the study area, and therefore demand for solid waste services. The City does not anticipate constructing a new landfill in the future and is working to develop a waste management plan and to study ways to divert waste from the landfill. These actions may reduce the rate of increasing demand for solid waste service between now and 2044. The gradual increase in demand associated with the Subarea Plan would be consistent with planned growth and capital plans in solid waste and waste diversion plans and updates. The increase in demand would be planned for in the City's solid waste planning goals and policies and capital facility program updates and is not expected to require unplanned projects or initiatives. The level of service standard for solid waste service is addressed below for each alternative.

10.3.3 No Action Alternative

The No Action Alternative serves as a baseline condition for comparison with the development alternatives and describes impacts if the Proposed Action does not proceed. With the No Action Alternative, existing site conditions and trends would continue. Existing trends include businesses (including the Port of Tacoma) and residences in the study area moving to more electricity use rather than natural gas use to meet emissions reduction goals. These trends will continue and may increase, which will in effect decrease demand for natural gas and increase the demand for electricity. Approximately 1,537 new customers in the study area would require utility services (see Table 10-1) over the 20-year planning horizon. This increase would be the same as the customer increase under Alternative 4 and would be less than the customer increase under Alternative 3. Impacts on utilities services (including potable water, wastewater, stormwater, electricity, solid waste, and natural gas) under Alternative 3 were found to be less than significant, based on the thresholds of significance presented in Section 10.3.1, *Thresholds of Significance*; therefore, impacts on

utilities related to the No Action Alternative are expected to be **less than significant**.

10.3.4 Alternative 2

Alternative 2 would result in approximately 5,334 additional utilities customers in the study area over the 20-year planning horizon. This increase would be less than the customer increase under Alternative 3. Impacts on utilities services (including potable water, wastewater, stormwater, electricity, solid waste, and natural gas) under Alternative 3 were found to be less than significant, based on the thresholds of significance presented in Section 10.3.1, *Thresholds of Significance*; therefore, impact on utilities related to Alternative 2 are expected to be **less than significant**.

10.3.5 Alternative 3

Based on the current LOS for **potable water** of 115 gpd per capita, Tacoma Water would supply an additional 1.1 million gpd under Alternative 3 to meet demand in 2044, assuming full build-out of Alternative 3. This potential increase, which would occur incrementally and gradually over the 20-year planning horizon, represents 2% of Tacoma Water's average use (50 million gpd). With implementation of mitigation measures and regular periodic review and implementation of plans and policies, impacts from Alternative 3 on potable water would be **less than significant**, based on the thresholds of significance presented in Section 10.3.1, *Thresholds of Significance* (i.e., consistency with planned growth and capital plans, need for new or upgraded projects, and level of service standards).

Similarly, the City of Tacoma would provide **sanitary sewer service** to an additional 9,369 people, an increase of 10% compared to the existing service area population. Given the current LOS, this increase in service area population equates to 1.87 million gpd (maximum monthly flow) and 3.7 million gpd (peak hydraulic or peak instantaneous flow). The additional demand for service at peak flow represents less than 3% of existing treatment capacity during large storm events. With implementation of mitigation measures and regular periodic review and implementation of plans and policies, impacts from Alternative 3 on sanitary sewer service would be **less than significant**.

The City of Tacoma would provide stormwater management service to an additional 9,369 people, an increase of less than 3% compared to the existing service area population. Given that: (1) the majority of the study area is already covered in impervious surface, limiting the

increase in future demand for new stormwater management; (2) Subarea and Planned Action growth would be incremental over the 20-year planning horizon; and (3) mitigation measures and regular periodic review and implementation of plans, policies, and permit requirements would occur, impacts from Alternative 3 on stormwater management services would be **less than significant**.

Tacoma Power would provide **electricity service** to an additional 9,369 people, an increase of 5% over the 20-year planning horizon compared to its current service area population. According to Tacoma Power, the location and size of the increased load would dictate if, what, and where Tacoma Power would need to build to support the growth in demand. Tacoma Power would utilize its existing facilities until a specific location exceeded the capacity in that area; then, it would incrementally add new capacity. This might mean upgrading existing distribution lines or adding more transformation capability at substations (Nierenburg 2023). Given Tacoma Power's diversified energy supply portfolio, periodic updates to plans, and implementation of policies, including conservation programs, impacts from Alternative 3 on electricity would be **less than significant**.

Similarly for **natural gas**, PSE would provide natural gas service to an additional 9,369 people over the 20-year planning horizon of this Subarea Plan. This increase in customers represents a 1% increase in its service area population over 20 years. With periodic updates to plans, and implementation of policies, impacts from Alternative 3 on natural gas would be **less than significant**.

Alternative 3 would result in a 74% increase in the number of jobs or residents in the study area, over the planning horizon 2024 to 2044. Based on the LOS of 1.13 tons (2,260 pounds) of **solid waste service** per year per capita, Alternative 3 would result in an additional demand for processing of 10,587 tons of solid waste per year, an estimate that represents 16% of the total amount of solid waste that the City currently handles annually. This amount would add to current demand incrementally over the 20-year planning horizon, as Tideflats Subarea Plan development occurs.

The City of Tacoma ES has stated that solid waste services are primarily staffing and equipment, which would be increased to match growth in demand. ES has also stated that the intermodal facility described in Section 10.1.7, *Solid Waste*, could be constructed in the Tideflats study area. To accommodate future increases in demand for solid waste service in the Tideflats study area, ES could construct centralized

compactors or shared garbage and recycling facilities for high-density commercial or residential customers. New development, through the permitting process, would ensure space for solid waste management, by individual property or shared among properties. ES does not anticipate a concern related to providing solid waste services to the study area with the adoption of the Tideflats Subarea Plan (Griffith 2023). With periodic updates to plans and implementation of policies, impacts from Alternative 3 on solid waste would be **less than significant**.

10.3.6 Alternative 4

With Alternative 4, approximately 1,537 new customers in the study area would require utility services, similar to Alternative 1. This increase would be less than the customer increase under Alternative 3, utilities impacts from which were found to be less than significant. Impacts on utilities related to Alternative 4 would be **less than significant**.

10.4 Avoidance, Minimization, and Mitigation Measures

Through the capital facilities planning process, the City of Tacoma ES, Tacoma Power, Tacoma Water, PSE, and private providers would continue to address changing demand for utilities services associated with development and how utility infrastructure can respond to maintain level of service standards. Growth in the Tideflats Subarea would be incremental, and periodic updates and improvements to plans and policies would minimize the probability that utilities providers would struggle to meet demand in future years.

Proposed utility infrastructure projects are generally evaluated on a site-specific basis as individual projects are developed and permits are issued. If projects meet the criteria for a Planned Action as defined in this EIS, those projects would not require SEPA evaluation because they would be already covered by this SEPA EIS. All new proposals, including those that are considered part of this Planned Action, will need to be evaluated for compliance with the goals and policies within the One Tacoma: Comprehensive Plan, Public Facilities and Services Element, including impacts on existing levels of service.

10.4.1 Mitigation Measures Common to All Alternatives

- Concentrate growth in areas with adequate potable water, stormwater, and sewer infrastructure.
- Build additional population density into upcoming plan or service updates such as periodic IRPs, conservation plans, and other future utility planning documents.
- Invest in building new facilities for water, wastewater, and stormwater services.
- Work with City and non-city utility providers to plan for new or improved facilities to meet future demand, including ensuring infrastructure currently exists for planned development or that upgrades needed to support the development alternatives are not prohibitive. In some cases, working with the providers to upgrade services prior to development may be a way to facilitate the City's goals for growth within the Tacoma Tideflats area.
- Require potable water, wastewater, and stormwater connections for all new development, unless otherwise allowed by state, county, or city regulations.
- Reduce vulnerability to surcharging during rainstorms by running the sewer model using forecast climate change rainfall amounts, expected to increase at highest percentages. The results will identify where retrofits may be required, but also where new development and redevelopment can mitigate for the future by installing pipes that carry a larger capacity.
- Consider including the equity issues of provision of utilities in future updates to utilities plans to ensure all members of the community are provided safe means of handling wastewater.
- Encourage sponsors of future corridor improvement projects to coordinate with utilities to identify joint opportunities. Even if there is not a demand for buried communications infrastructure, there may be benefits in laying conduit as part of a "Dig Once" strategy.
- Consider updates to the Port of Tacoma Strategic Plan when evaluating utility needs within the Tacoma Tideflats area.
- Coordinate with climate change planners to anticipate infrastructure improvements or adaptation techniques to minimize damage to infrastructure or disruption to utility service related to future sea level rise or other climate-related effects to the community. For example, the Climate Vulnerability Assessment for the Tideflats Subarea (see Appendix G) recommends the following:
 - Account for up to 2 feet relative sea level rise (RSLR) in the short-term design and 5 feet RSLR in the long-term planning of

high-risk resources: Major, high-risk infrastructure and major utilities that cannot tolerate flooding should consider the potential for severe, low-probability RSLR scenarios at long-term time horizons to avoid potential future loss of key services and minimize the need for costly adaptation measures at a later date. Given these potential consequences, planning for up to 5 feet RSLR may be appropriate for resources with 50+ year design lives.

- Maintain flexibility in sea level rise adaptation strategies: New or redeveloped infrastructure and short-term RSLR adaptation measures should be designed in a manner that does not preclude implementation of future adaptation strategies to address more severe RSLR scenarios. This can be accomplished in a number of ways, such as maintaining a buffer area between the shoreline and critical infrastructure.

10.4.2 No Action Alternative

See *Mitigation Measures Common to All Alternatives*.

Alternative 1 assumes that mitigation, if required, would be implemented project by project, and permit by permit rather than included under the proposed Planned Action. Mitigation for proposed utility projects would therefore need to be coordinated to ensure that overall demand and level of service standards are being met and will be met in the future. Less new development and fewer land use transitions would occur in the study area. Therefore, the demand for utility services would not increase as fast compared to Alternatives 2 and 3.

10.4.3 Alternative 2

See *Mitigation Measures Common to All Alternatives*.

Alternative 2 would allow for coordinated approvals and permitting under the Planned Action, resulting in the ability to coordinate meeting overall utility demand and adopt adaptation measures for utility facilities. Due to the increase in jobs in the study area, measures in Section 10.4.1, *Mitigation Measures Common to All Alternatives*, would need to be implemented earlier and more frequently compared to Alternatives 1 and 4.

10.4.4 Alternative 3

See *Mitigation Measures Common to All Alternatives*.

Alternative 3 has the highest planned employment and the highest amount of housing compared to other alternatives. It provides the most

job growth in a smaller footprint; it also allows for more non-industrial uses in Transition Areas. Alternative 3 would allow for coordinated approvals and permitting under the Planned Action, resulting in the ability to coordinate meeting overall utility demand and adopt adaptation measures for utility facilities. Due to the increase in employment and housing activity and land use conversion, measures in Section 10.4.1, *Mitigation Measures Common to All Alternatives*, would need to be implemented earlier and more frequently compared to Alternatives 1, 2, and 4.

10.4.5 Alternative 4

See Section 10.4.1, *Mitigation Measures Common to All Alternatives*.

Alternative 4 is similar to Alternative 1, except that Alternative 4 would allow for coordinated approvals and permitting under the Planned Action, resulting in the ability to coordinate meeting overall utility demand and adopt adaptation measures for utility facilities.

10.5 Significant Unavoidable Adverse Impacts

Increases in demand for utility services would occur gradually under all alternatives, as they all presume ongoing development within the Tideflats study area. Incremental development under the selected alternative will be planned for as required and through the capital facilities planning processes, updated system plans, and application of codes and standards. With implementation of mitigation measures and regular periodic review and implementation of plans and policies, **no significant unavoidable adverse impacts on utilities are expected.**

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CHAPTER 12 Distribution List

The Draft EIS has been issued with a notice of availability, consistent with WAC 197-11-510, including distribution to the following:

Tribal and Federal Agencies

- Confederated Tribes and Bands of the Yakama Nation
- Environmental Protection Agency
- Joint Base Lewis-McChord
- Muckleshoot Indian Tribe
- Nisqually Indian Tribe
- Puyallup Tribe of Indians

Regional and County Agencies

- King County
- Northwest Seaport Alliance
- Pierce Conservation District
- Pierce County
- Pierce Transit
- Port of Tacoma
- Puget Sound Clean Air Agency
- Puget Sound Regional Council
- Sound Transit
- Tacoma Public Schools
- Thurston County

State of Washington

- Department of Archaeology and Historic Preservation
- Department of Commerce
- Department of Ecology
- Department of Fish and Wildlife
- Department of Health
- Department of Natural Resources
- Department of Social and Health Services
- Department of Transportation
- Parks and Recreation Commission
- Puget Sound Partnership

City of Tacoma, Tacoma Service Providers, Adjacent Cities

- City of Federal Way Planning Manager
- City of Federal Way Community Development Director
- City of Fife
- City of Lakewood
- City of Puyallup
- City of Sumner
- City of Tacoma Planning and Development Services
- City of Tacoma Neighborhood Councils
- City of Tacoma Business Districts
- City of University Place
- Metro Parks Tacoma
- Tacoma-Pierce County Health Department

The Draft EIS has also been made available at cityoftacoma.org/tideflats, and a notice of availability was sent to all commentors during the public scoping process and the interested parties contact list.