CITY OF PORT ORCHARD
Planning Commission
216 Prospect Street, Port Orchard, WA 98366
(360) 874-5533 planning@cityofportorchard.us

PLANNING COMMISSION MEETING AGENDA
Tuesday, February 7, 2023 – 6:00 pm

***** Attendees and Planning Commissioners may attend in person at City Hall or via Zoom*****

Join Zoom Meeting, Public Link: https://us02web.zoom.us/j/86180242823
Dial-in (phone audio) only: + 1 253 215 8782

Webinar ID: 861 8024 2823

Planning Commissioners please use individual webinar links.

1. **Call to Order: 6:00 p.m.**
   Pledge of allegiance**.**

2. **Welcome and Introduction.**
   Planning Commission and City Staff Introductions.

3. **Audience Comments:** Topics not listed for public hearing on tonight's agenda.
   Please limit comments to **3 minutes.**

4. **Approval of Minutes from December 6, 2022.** *(Attachment)* *(ACTION)*

5. **Business Items:**

   a) **DISCUSSION: LR23-PLAN-02 - 2023 Comprehensive Plan Amendments** *(Attachment)*
   In compliance with POMC 20.04.060(3), the Director is required to compile and maintain for public review a recommended final comprehensive plan amendment agenda (docket). The City initiated one amendment to the Comprehensive Plan by the deadline of January 31, 2023.

   Staff Contact: Jacob Miller, Associate Planner

   b) **DISCUSSION: LR23-CODE AMENDMENT-01 – Development Agreement and Sign Code** *(Attachment)*
   The City is considering the adoption of an ordinance amending the POMC 20.26.020 and 20.132.060 to include permanent signage as an eligible development standard for modification through a Development Agreement and Master Sign Plan.

   Staff Contact: Jim Fisk, Senior Planner

   c) **DISCUSSION: Housing Action Plan** *(Attachment)*
   Presentation of the existing conditions report.

Staff Contact: Jim Fisk, Senior Planner

d) DISCUSSION: LR23-PLAN-01 - City of Port Orchard Stormwater and Watersheds Comprehensive Plan 2023 *(Attachment)*

The City is considering the adoption of a Stormwater and Watersheds Comprehensive Plan to guide the management of surface water, stormwater and watersheds within the City.

Staff Contact: Zack Holt, Stormwater Program Manager

e) DISCUSSION: Director's Report

1. *Cell Tower Development Regulations*
2. *2022 Comprehensive Plan Amendments*
3. *Isolated Wetland Definition*
4. *Stormwater Code Revisions*
5. *Accessory Dwelling Units – Owner Occupancy*
6. *Accessory Structure Setbacks*
7. *Housekeeping Ord.*
8. *Subdivision Entry Signage*
9. *Public Participation Program, 2024 Comprehensive Plan Update*
10. *Comprehensive Plan 2024 Periodic Update - January 31, 2023 Open House Summary*

Staff Contact: Nick Bond, Community Development Director

f) DISCUSSION: Open Public Meetings Act (OPMA) and Public Records Act (PRA) Training

6. Adjourn

Next Planning Commission Meeting – March 7, 2023

CITY OF PORT ORCHARD
Planning Commission Minutes
216 Prospect Street, Port Orchard, WA 98366
Phone: (360) 874-5533 • Fax: (360) 876-4980

Planning Commission Meeting Minutes
December 6th, 2022
Hybrid Zoom Teleconference

COMMISSIONERS:
Present: Annette Stewart, Stephanie Bailey, Bek Ashby, Joe Morrison, and Dave Bernstein.
Absent: Tyler McKlosky, and Phil King.

STAFF:
Community Development Director Nick Bond, Senior Planner Jim Fisk, and Assistant Planner Josie Rademacher.

1. CALL TO ORDER: Chair Stewart called the meeting to order at 6:05 p.m. and led the Pledge of Allegiance.

2. WELCOME AND INTRODUCTION: Chair Stewart introduced the present Planning Commissioners, Vice Chair Ashby, Commissioner Bailey, Commissioner Morrison, Commissioner Bernstein and present City staff members, Community Development Director Nick Bond, Senior Planner Jim Fisk, and Assistant Planner Josie Rademacher.

3. PUBLIC COMMENTS: Public comment was open to any subject not related to the public hearing. Paul Fontenot, a Port Orchard resident, commented on the Festival of Lights event that happened the weekend prior and how he enjoyed the closing of Bay St created a thriving downtown pedestrian environment. Paul further commented on how Port Orchard is car dependent and hopes to see improvements in infrastructure to promote additional modes of transportation across the City.

4. APPROVAL OF MINUTES FROM NOVEMBER 1ST, 2022: Commissioner Bailey made a motion to approve the minutes as presented from the November 1st meeting. Commissioner Morrison seconded the motion. The motion passed unanimously.

5. BUSINESS ITEMS:

A. PUBLIC HEARING: 2024 COMPREHENSIVE PLAN UPDATE, PUBLIC PARTICIPATION PROGRAM

Senior Planner, Jim Fisk, stated that the first draft of the Public Participation Program for the 2024 Comprehensive Plan Update was introduced to the Planning Commission in November 1st's meeting. City Staff, and consultant team, AHBL, drafted the Public Participation Program presented. A Public Participation Program is required for the update and outlines all of the parameters for public outreach and opportunities to participate in the planning process. The draft Public Participation Program was made available on the City's website on October 27th. City Staff provided a variety of outreach methods including social media posts, and emails to interested individuals encouraging participation related to Program adoption multiple times before the public

hearing. The Community Development Department did not receive any comments regarding the Public Participation Program prior to the hearing.

Chair Stewart opened the public hearing.

There we no comments from the public.

Chair Stewart closed the public hearing.

Vice Chair Ashby made a motion to recommend the City Council to approve a resolution to adopt the 2024 Comprehensive Plan Update, Public Participation Program as presented. Commissioner Bailey seconded the motion. The motion passed unanimously.

B. DISCUSSION: POMC 20.132 TEMPORARY SIGNAGE

Per request of City Staff, and action from the Planning Commission, a motion to table discussion on POMC 20.132 Temporary Signage until an update is necessary was voted on and passed unanimously.

C. DISCUSSION: HOUSING ACTION PLAN SURVEY

Senior Planner, Jim Fisk, shared that City's Housing Action Plan is underway. As a part of the plan development, the City, is providing the Housing Action Plan Flyer (available in the packet), to City utility customers as a part of their bill for the November and December billing cycles. Staff also provided social media, and email notifications for the survey. Initial feedback from the survey includes:

- About 82% of respondents so far are homeowners, while approximately 60% of Port Orchard's population are homeowners.
- Income of survey respondents is pretty distributed, and
- Most respondents live in single-family homes.

Staff intends to update the Planning Commission once the survey has closed and received initial conditions reporting. An update to the Commission is likely in Winter 2023.

D. DISCUSSION: DEVELOPMENT ACTIVITY PRESENTATION

Community Development Director, Nick Bond, presented current development activity as requested from the Planning Commission at the November meeting.

E. DISCUSSION: CITY OF PORT ORCHARD STORMWATER AND WATERSHEDS COMPREHENSIVE PLAN 2023

Per request of City Staff, and action from the Planning Commission, a motion to table discussion on the City of Port Orchard Stormwater and Watersheds Comprehensive Plan 2023 until a later date was voted on and pass unanimously. Staff intends to introduce the item in two months when the item is complete.

ADJOURN: Chair Stewart adjourned the meeting at 7:01 pm.

_____

Annette Stewart, Chair

_____

Nick Bond, Community Development Director

CITY OF PORT ORCHARD
DEPARTMENT OF COMMUNITY DEVELOPMENT

216 Prospect Street, Port Orchard, WA 98366
Ph.: (360) 874-5533 • FAX: (360) 876-4980

PLANNING COMMISSION STAFF REPORT

Agenda Item No:	5(a)	**Meeting Date:**	February 7, 2023
Subject:	2023 Comprehensive Plan Amendments	**Prepared by:**	Nick Bond, Development Director

Summary: Consistent with the requirements of POMC 20.04.050(1), the City initiated one amendment to the Comprehensive Plan by the amendment deadline of January 31, 2023. The Community Development Director has compiled for public review a recommended final Comprehensive Plan Amendment Agenda consisting of:

City Initiated Comprehensive Map Amendment

- A Comprehensive Plan Map and Legislative Zoning Map amendment for the properties located along SE Meline Road. The amendment would change the Comprehensive Plan future land use map designation of Commercial (COM) to Low Density Residential (LDR) and would change the zoning designation of Commercial Mixed Use (CMU) to Residential 1 (R1).

SE Meline Road is an east-west oriented Local Access designated, dead-end street that is approximately a quarter mile in length. It is located south of the Sedgwick and State Highway 16 interchange, behind the Port Orchard Lowe's store. The current City of Port Orchard zoning designation along SE Meline is CMU – Commercial Mixed-Use that turns into Greenbelt as the road terminates to the west. The Comprehensive Plan Map designation is Commercial. The subject properties are developed with detached houses and single-family residential land uses. However, the CMU district does not permit detached houses as a building type nor permit single-family residential as a land use resulting in non-conforming uses and building types. Infrastructure in the area is insufficient to support land uses permitted in the CMU district without significant financial investment. Further, access to the properties likely reduces the feasibility or desirability of any commercial uses that may be permitted in CMU district.

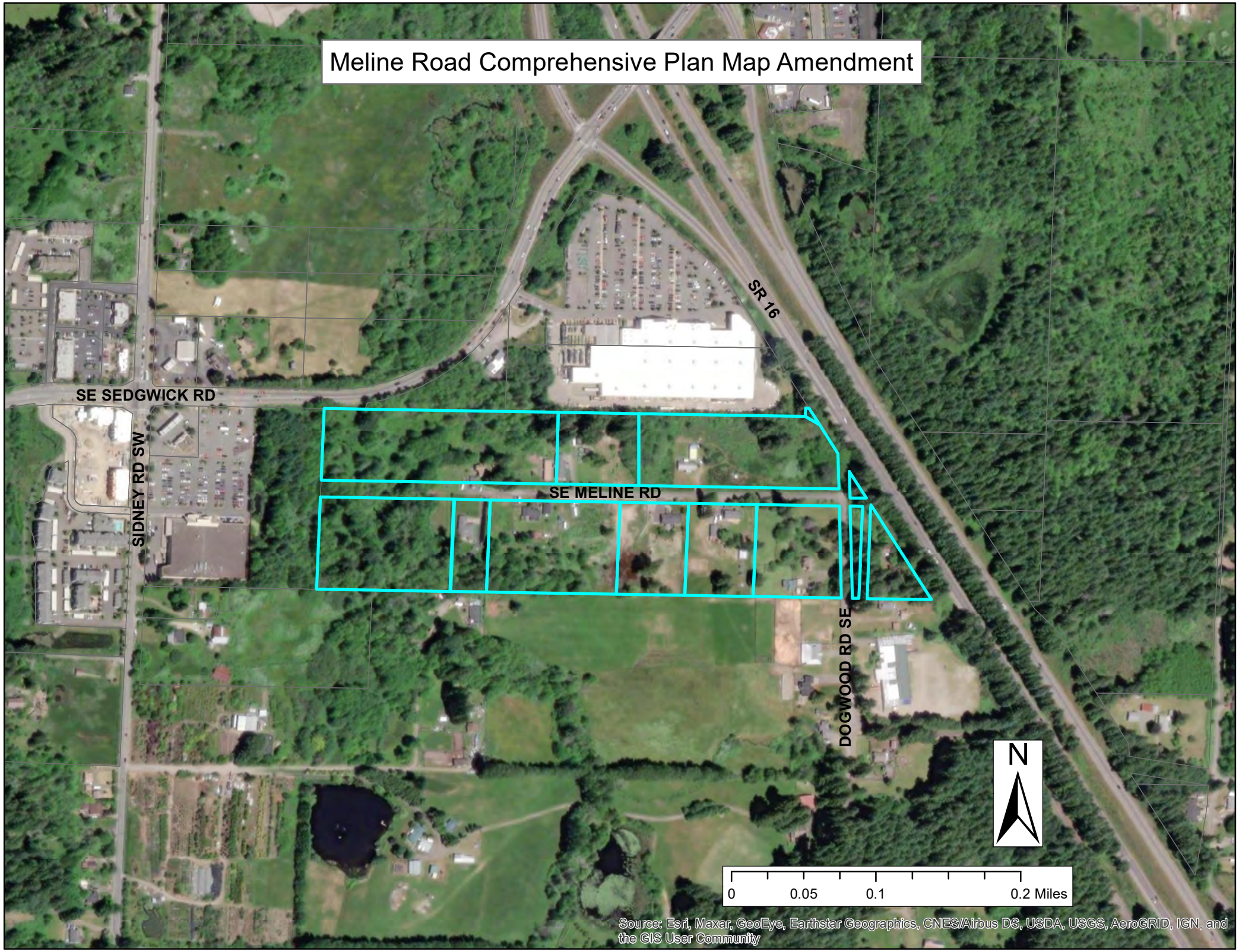
This amendment proposes a Low-Density Residential designation in the Comprehensive Plan Map and a Residential 1 designation in the Zoning Map. The R1 district is most compatible with the existing development and would rectify existing non-conforming uses and building types. This amendment would allow property owners to make improvements according to the development standards associated with the more compatible zoning designation of R1 and would preclude them from limitations set by POMC 20.54 Nonconformities. The Community Development Director, consistent with the requirements of POMC 20.04.060 will present the recommended Comprehensive Plan Amendment Docket for City Council's review and consideration at the February 14, 2023 City Council meeting. Upon adoption of the final docket by City Council, the Planning Commission should hold a public hearing for consideration of the proposed amendment.

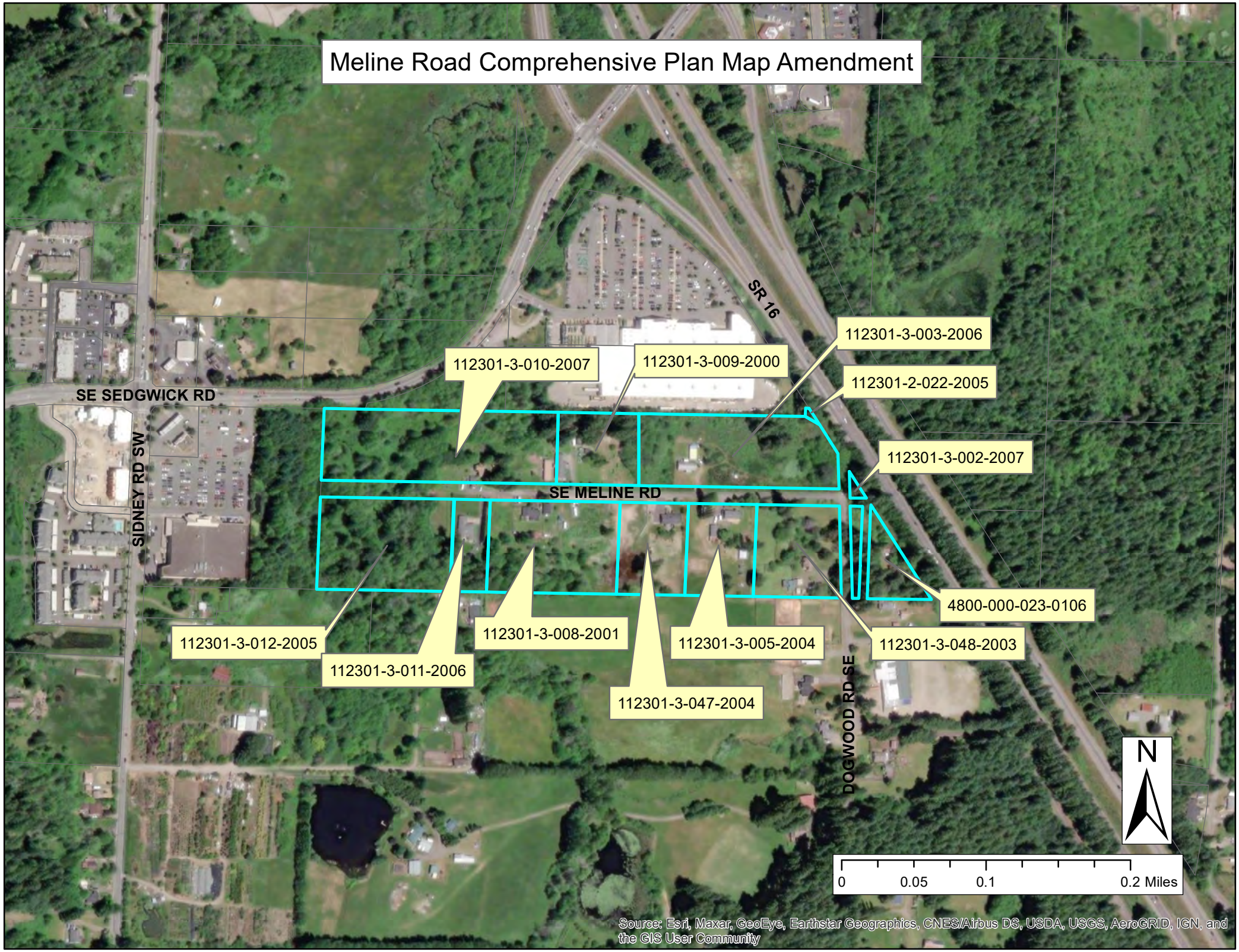
The Planning Commission is asked to hold a public hearing to discuss and make a recommendation to the City Council on the 2023 Annual Comprehensive Plan Amendments at the March 7, 2023 Planning Commission Meeting.

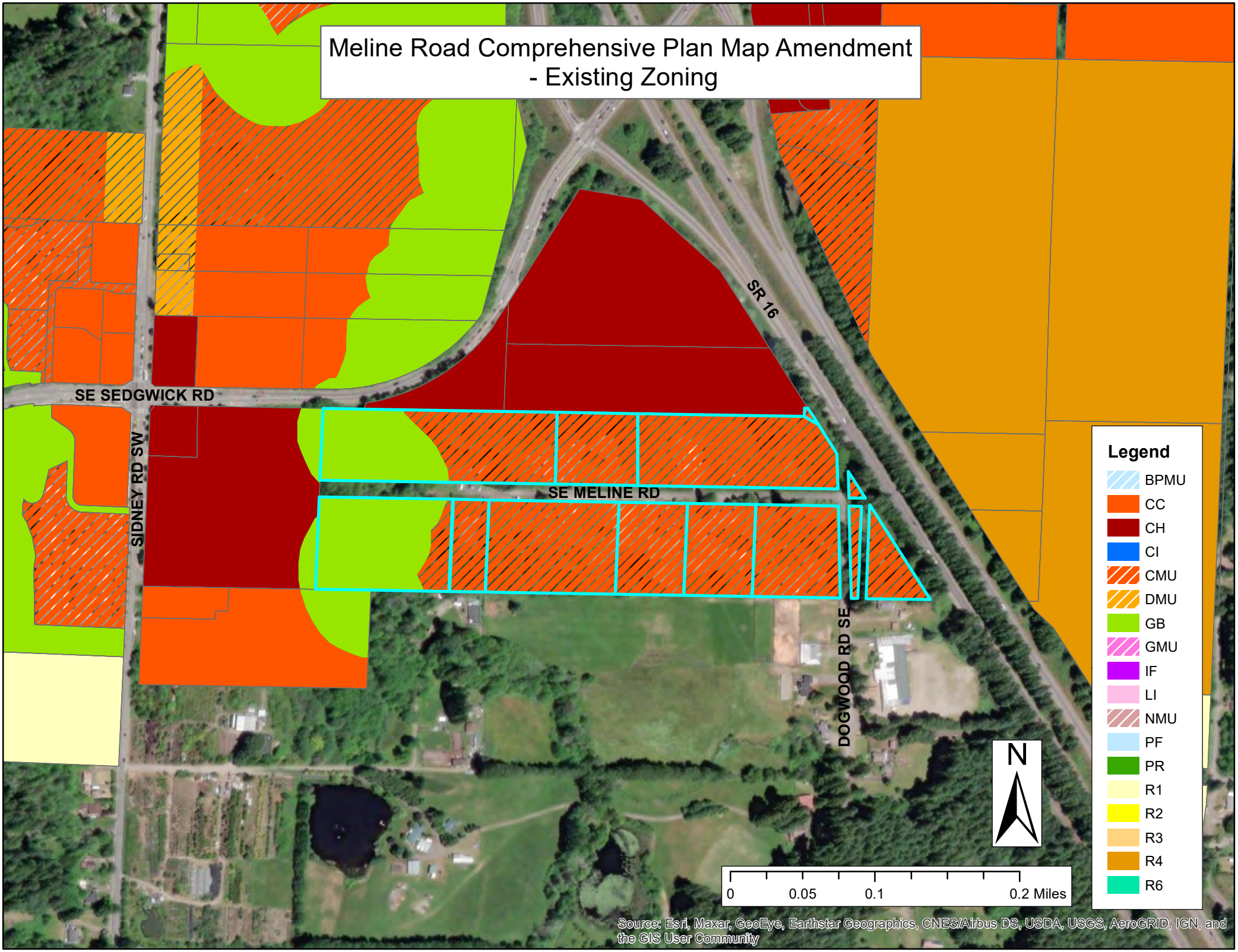
Relationship to Comprehensive Plan: Pursuant to RCW 36.70A.470 and 36.70A.106, the City may annually adopt amendments to the City's Comprehensive Plan.

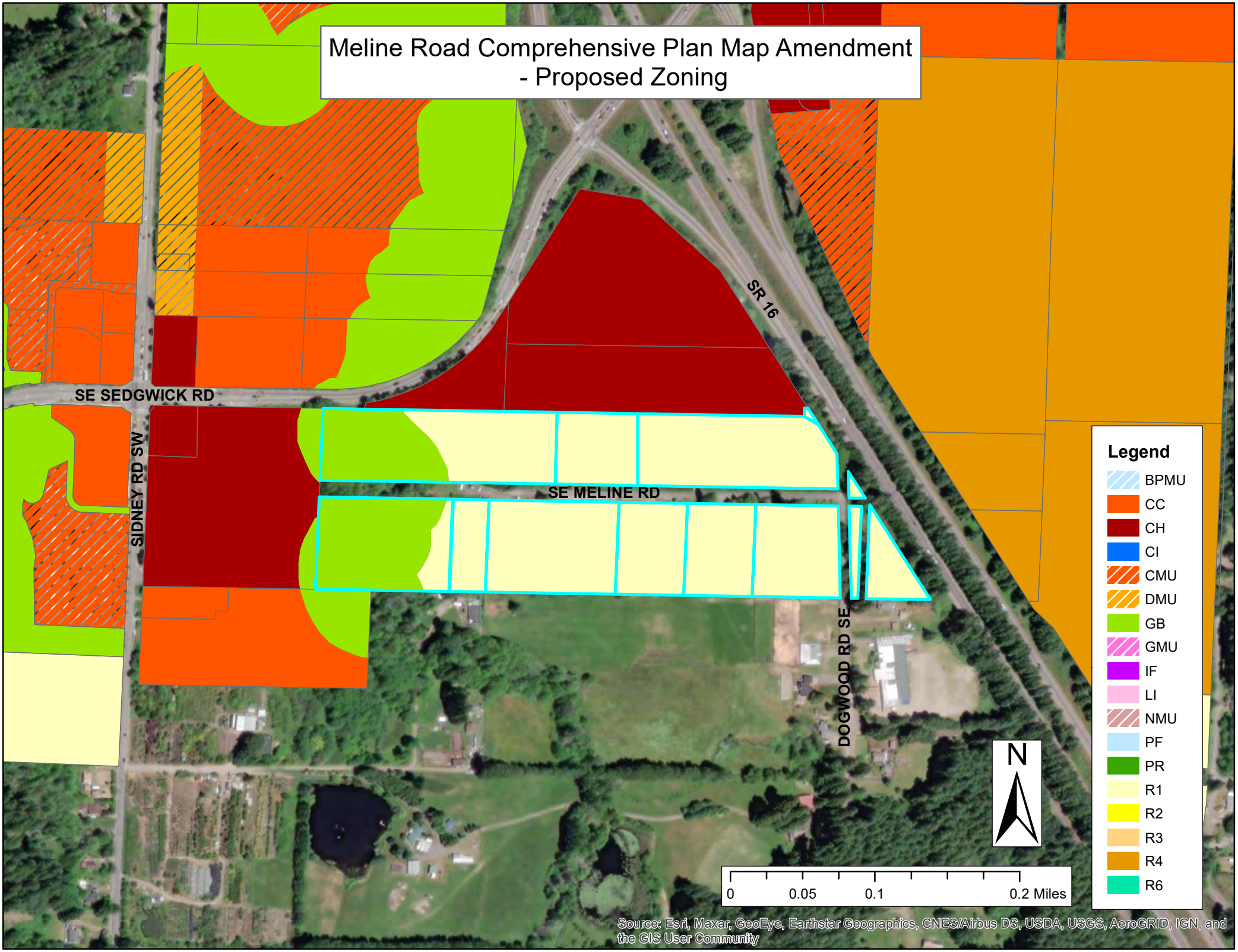
Recommendation: The Planning Commission should review the proposed amendments prior to scheduling a public hearing. Staff recommends that a public hearing be scheduled for March 7, 2023 on the proposed amendment.

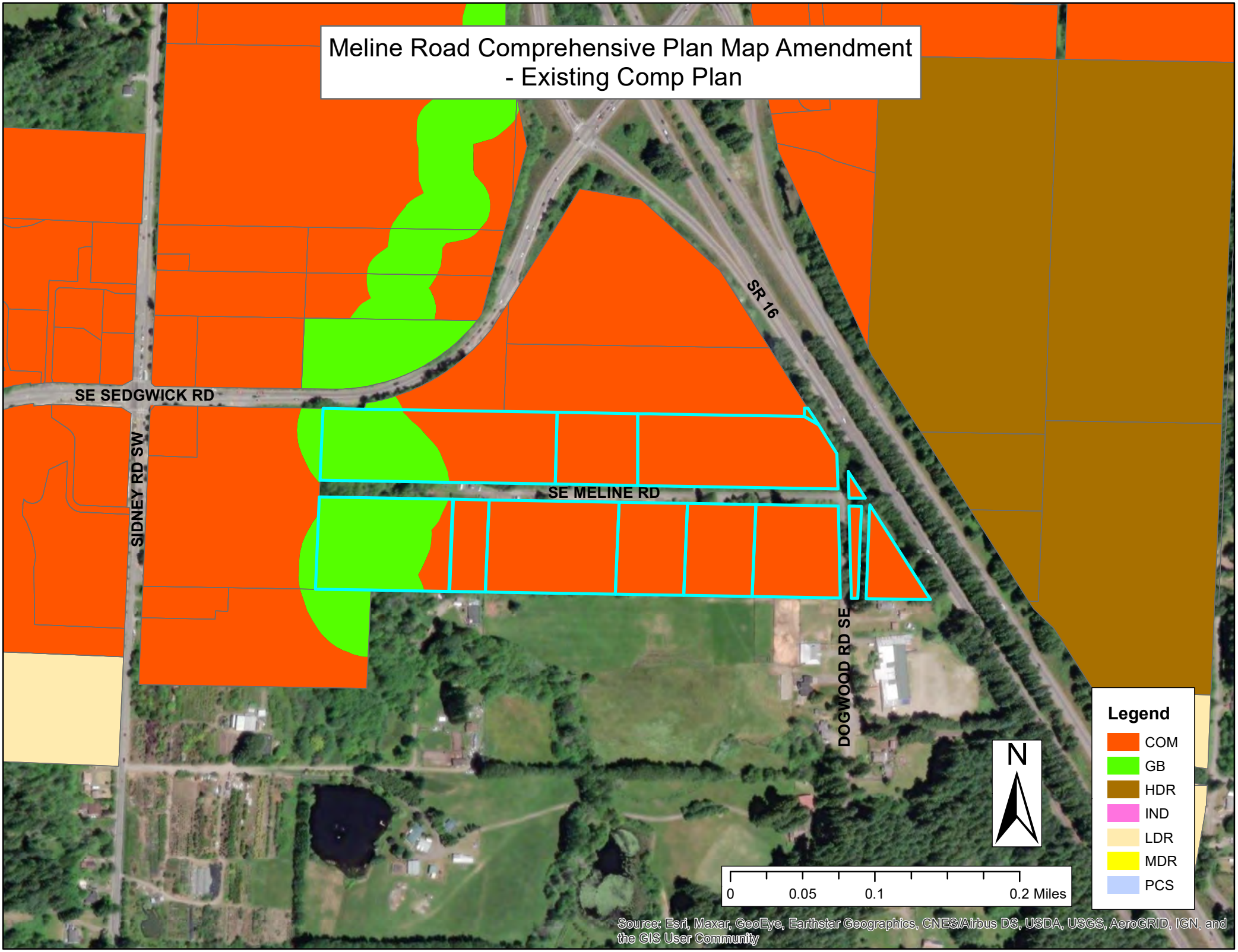
Attachments: Exhibit A - Maps

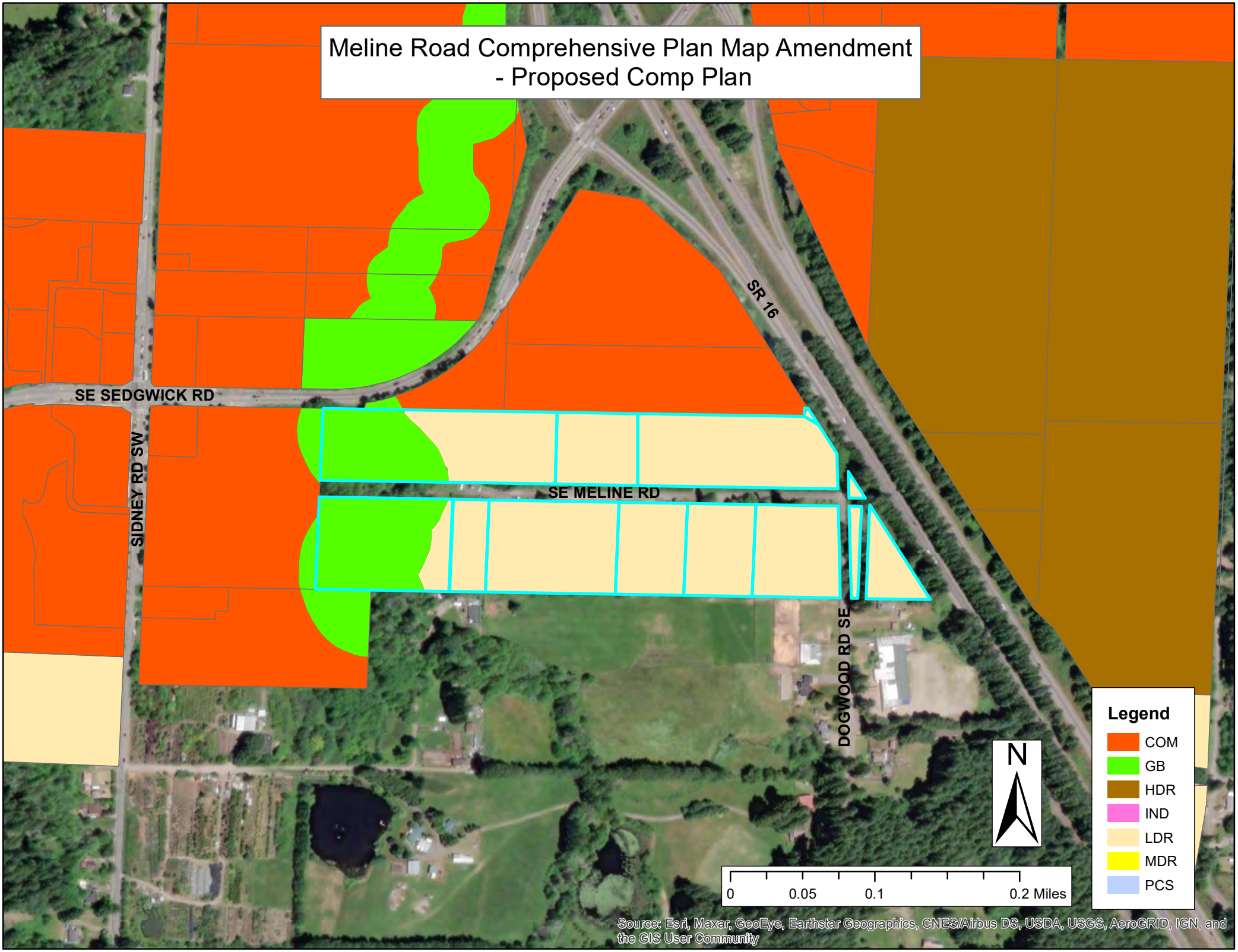

Meline Road Comprehensive Plan Map Amendment
SR 16
SE SEDGWICK RD
SIDNEY RD SW
SE MELINE RD
DOGWOOD RD SE
N
0
0.05
0.1
0.2 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Meline Road Comprehensive Plan Map Amendment
SR 16
SE SEDGWICK RD
SIDNEY RD SW
SE MELINE RD
DOGWOOD RD SE
112301-3-010-2007
112301-3-009-2000
112301-3-003-2006
112301-2-022-2005
112301-3-002-2007
4800-000-023-0106
112301-3-048-2003
112301-3-005-2004
112301-3-008-2001
112301-3-012-2005
112301-3-011-2006
112301-3-047-2004
N
0
0.05
0.1
0.2 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Meline Road Comprehensive Plan Map Amendment
- Existing Zoning
SR 16
SE SEDGWICK RD
SIDNEY RD SW
SE MELINE RD
DOGWOOD RD SE
Legend
BPMU
CC
CH
CI
CMU
DMU
GB
GMU
IF
LI
NMU
PF
PR
R1
R2
R3
R4
R6
N
0
0.05
0.1
0.2 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Meline Road Comprehensive Plan Map Amendment
- Proposed Zoning
SR 16
SE SEDGWICK RD
SIDNEY RD SW
SE MELINE RD
DOGWOOD RD SE
Legend
BPMU
CC
CH
CI
CMU
DMU
GB
GMU
IF
LI
NMU
PF
PR
R1
R2
R3
R4
R6
N
0
0.05
0.1
0.2 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Meline Road Comprehensive Plan Map Amendment
- Existing Comp Plan
SR 16
SE SEDGWICK RD
SIDNEY RD SW
SE MELINE RD
DOGWOOD RD SE
N
0
0.05
0.1
0.2 Miles
Legend
COM
GB
HDR
IND
LDR
MDR
PCS
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Meline Road Comprehensive Plan Map Amendment
- Proposed Comp Plan
SR 16
SE SEDGWICK RD
SIDNEY RD SW
SE MELINE RD
DOGWOOD RD SE
N
0
0.05
0.1
0.2 Miles
Legend
COM
GB
HDR
IND
LDR
MDR
PCS
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CITY OF PORT ORCHARD
DEPARTMENT OF COMMUNITY DEVELOPMENT

216 Prospect Street, Port Orchard, WA 98366
Ph.: (360) 874-5533 • FAX: (360) 876-4980

PLANNING COMMISSION STAFF REPORT

Agenda Item No:	5(b)	**Meeting Date:**	February 7, 2023
Subject:	Discussion Revisions to POMC 20.26.020and 20.132.060 – Development Agreements and the City Sign Code	**Prepared by:**	Nick Bond, Development Director

Issue: Port Orchard Municipal Code (POMC) Chapter 20.26 POMC contains standards and procedures governing the City's use of development agreements, which can be entered into between the City and applicants to provide flexibility in the application of development standards. In October 2020, the City Council amended POMC Chapter 20.26, clarifying the standards that may be addressed in a development agreement, providing more specificity on the application and processing requirements and the decision type, and to strengthen requirements for additional public benefit for development agreements.

Currently, POMC 20.26.020 omits the City sign code from those development standards which may be modified through a development agreement. City staff propose to amend POMC 20.26.020 and 20.132.060 to allow the approval of a Master Sign Plan utilizing alternative development standards through the use of a development agreement. Development Agreements can be advantageous to the City and to applicants in allowing flexibility in applying development standards that often lead to better project design and infrastructure improvements which benefit the public.

The current language in the code, and the proposed language in the ordinance, are presented for the Planning Commission's review. The Planning Commission is requested to hold a public hearing at the March 7, 2023, Planning Commission meeting.

Recommendation: The Planning Commission should review the proposed revisions to 20.26.020 and 20.132.060 prior to scheduling a public hearing. Staff recommends that a public hearing be scheduled for March 7, 2023, on the proposed amendment.

Attachments: Ordinance

ORDINANCE NO. XXX-23

AN ORDINANCE OF THE CITY OF PORT ORCHARD, WASHINGTON, RELATING TO THE CITY'S DEVELOPMENT CODE WITH REGARD TO DEVELOPMENT AGREEMENTS AND THE CITY SIGN CODE; AMENDING SECTION 20.26.020 OF THE PORT ORCHARD MUNICIPAL CODE TO ADD THE SIGN CODE CHAPTER 20.132 POMC TO THE LIST OF CODE PROVISIONS WHICH MAY BE MODIFIED BY A DEVELOPMENT AGREEMENT; AMENDING SECTION 20.132.060 OF THE PORT ORCHARD MUNICIPAL CODE TO PROVIDE THAT MASTER SIGN PLANS MAY BE APPROVED BY USE OF A DEVELOPMENT AGREEMENT; PROVIDING FOR CORRECTIONS AND SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, pursuant to RCW 36.70B.170, the City Council has the authority to review and enter into development agreements that govern the development and use of real property within the City; and

WHEREAS, such agreements are advantageous to both municipalities and applicants by facilitating certainty and stability in the land use permitting process, while also providing flexibility in the innovative application of local development standards, often leading to enhanced project design and infrastructure improvements for the public; and

WHEREAS, the City Council adopted standards and procedures governing the City's use of development agreements, codified at Chapter 20.26 of the Port Orchard Municipal Code (POMC) which was last updated by Ordinance No. 030-20; and

WHEREAS, when a project includes signage the City's sign code (Chapter 20.132 POMC) applies; and

WHEREAS, the Development Agreement section 20.26.020 that sets forth the code chapters that are subject to Development Agreements does not currently include the City sign code; and

WHEREAS, for mixed use developments, a master sign plan is required in accordance with POMC 20.132.060; and

WHEREAS, allowing master sign plans to be approved by Development Agreement may result in a better result for both project proponents and for the public at large;

WHEREAS, the City Council desires to adopt the amendments to those regulations set forth in this ordinance to enhance the City's ability to utilize development agreements for the benefit of the City and public; and

WHEREAS, this Ordinance was submitted to the Department of Commerce for review on DATE, 2023, and review was granted on DATE, 2023; and

WHEREAS, on DATE, 2023, the City's SEPA official issued a determination of nonsignificance for the proposed revisions, and there have been no appeals; and

WHEREAS, the Planning Commission conducted a public hearing on the substance of this Ordinance on DATE, 2023, and recommended adoption by the City Council; and

WHEREAS, the City Council, after careful consideration of the recommendation from the Planning Commission, all public comment, and the Ordinance, finds that this Ordinance is consistent with the City's Comprehensive Plan and development regulations, the Growth Management Act, Chapter 36.70A RCW, and that the amendments herein are in the best interests of the residents of the City and further advance the public health, safety and welfare; now, therefore,

THE CITY COUNCIL OF THE CITY OF PORT ORCHARD, WASHINGTON, DO ORDAIN AS FOLLOWS:

SECTION 1. Findings and Recitals. The recitals set forth above are hereby adopted and incorporated as findings in support of this Ordinance.

SECTION 2. Section 20.26.020 of the Port Orchard Municipal Code is hereby amended to read as follows:

20.26.020 Form of agreement, effect and general provisions.

(1) Form. A development agreement shall set forth the development standards and other provisions that apply to and govern and vest the development, use, and mitigation of the development of the real property for the duration specified in the agreement.

(a) For the purposes of this chapter, "development standards" may include, but are not limited to:

(i) Project elements such as residential densities, nonresidential densities and intensities or building sizes;

(ii) The amount and payment of impact fees imposed or agreed to in accordance with any applicable provisions of state law, any reimbursement provisions, other financial contributions by the property owner, inspection fees, or dedications;

(iii) Mitigation measures, development conditions, and other requirements under Chapter 43.21C RCW;

(iv) Design standards such as maximum heights, setbacks, landscaping, and other development features;

(v) Affordable housing;

(vi) Parks and open space preservation;

(vii) Phasing;

(viii) Review procedures and standards for implementing decisions;

(ix) A build-out or vesting period for applicable standards; and

(x) Any other development requirement or procedure deemed appropriate by the city council.

(b) In order to encourage innovative land use management and provide flexibility to achieve public benefits, a development agreement adopted pursuant to this chapter may impose development standards that differ from the following development regulations of this code; provided, that any development standards imposed by the development agreement shall be consistent with the comprehensive plan:

(i) Chapter 20.08 POMC, Vesting;

(ii) Chapter 20.12 POMC, Definitions;

(iii) Chapter 20.30 POMC, Introduction to Zoning, Land Uses, and Building Types;

(iv) Chapter 20.32 POMC, Building Types;

(v) Chapter 20.33 POMC, Greenbelt District;

(vi) Chapter 20.34 POMC, Residential Districts;

(vii) Chapter 20.35 POMC, Commercial and Mixed Use Districts;

(viii) Chapter 20.36 POMC, Industrial Districts;

(ix) Chapter 20.37 POMC, Civic and Open Space Districts;

(x) Chapter 20.38 POMC, Overlay Districts;

(xi) Chapter 20.39 POMC, Use Provisions;

(xii) Chapter 20.40 POMC, Site and Lot Dimensions;

(xiii) Chapter 20.41 POMC, Transfer of Development Rights Program;

(xiv) Chapter 20.54 POMC, Nonconformities;

(xv) Chapter 20.68 POMC, Accessory Dwelling Units;

(xvi) Chapter 20.80 POMC, Subdivisions – General Provisions;

(xvii) Chapter 20. 82 POMC, Administration and Enforcement;

(xviii) Chapter 20.84 POMC, Boundary Line Adjustments;

(xix) Chapter 20.86 POMC, Short Subdivisions;

(xx) Chapter 20.88 POMC, Subdivisions – Preliminary Plats;

(xxi) Chapter 20.90 POMC, Subdivisions – Final Plats;

(xxii) Chapter 20.94 POMC, Binding Site Plans;

(xxiii) Chapter 20.96 POMC, Vacation and Alteration of Final Plans and Short Plats;

(xxiv) Chapter 20.98 POMC, Improvements;

(xxv) Chapter 20.100 POMC, Development Standards – Subdivision Design;

(xxvi) Chapter 20.120 POMC, Development Standards – General Provisions;

(xxvii) Chapter 20.122 POMC, Building Elements;

(xxviii) Chapter 20.124 POMC, Development Standards – Parking and Circulation;

(xxix) Chapter 20.127 POMC, Design Standards;

(xxx) Chapter 20.128 POMC, Landscaping;

(xxxi) Chapter 20.129 POMC, Significant Trees;

(xxxii) Chapter 20.132 POMC, Sign Code;

(xxxiii) Chapter 20.139 POMC, Residential Design Standards;

(xxxiiiiv) Chapter 20.162 POMC, Critical Areas Regulations;

(xxxiv) Chapter 20.164 POMC, Shoreline Master Program;

(xxxvi) Chapter 20.182 POMC, Impact Fees.

(c) A development agreement shall not modify any provision of this code that is not identified in subsection (1)(b) of this section.

(d) A development agreement may modify the provisions of this code only if the city council determines that the requested modifications are necessary to provide flexibility to achieve public benefits and provide superior outcomes than those that would result from strict compliance with the other applicable development standards.

(e) Any approved development standards that differ from those other applicable development standards shall not require any further zoning reclassification, variance from city standards or other city approval apart from development agreement approval.

(f) Subsequently adopted standards which differ from those in the development agreement shall apply to the subject site where necessary to address a serious threat to public health and safety or where the development agreement specifies a time period or phase after which certain identified standards may be modified. Building permit applications shall be subject to the building and construction codes in effect when the building permit application is deemed complete.

(2) Decision Type. Development agreements are a Type V action and shall be reviewed and approved pursuant to the procedures in Chapter 20.22 POMC and this chapter, except that if the development agreement is consolidated with a new or pending Type I, II, III or IV project permit application as defined in RCW 36.70B.020, the city council's decision to approve, deny, or modify the development agreement may be appealed pursuant to Chapter 36.70C RCW.

(3) Effect. Development agreements are not project permit applications and are not subject to the permit processing procedures in Chapter 36.70B RCW or Chapter 20.24 POMC. A development agreement shall constitute a binding

contract between the city and the property owner and the subsequent owners of any later-acquired interests in the property identified in the development agreement. A development agreement governs the project identified in the development agreement during the term of the development agreement, or for all or that part of the build-out period specified in the development agreement, and may not be subject to an amendment to a zoning ordinance or development standard adopted after the effective date of the agreement, except as set forth in this chapter. A permit or approval issued/granted by the city after execution of a valid development agreement must be consistent with the development agreement.

(4) Limitations.

(a) A development agreement shall be limited to a 20-year term if any provision of the agreement requires the city to:

(i) Refrain from exercising any authority that it would have otherwise been able to exercise in the absence of the development agreement;

(ii) Defer application to the subject property of any newly adopted development regulations that would otherwise apply to the property identified in the agreement; or

(iii) Allow vesting beyond the applicable deadlines for a phased development.

(b) The development agreement shall also contain a proviso that the city may, without incurring any liability, engage in action that would otherwise be a breach if the city makes a determination on the record that the action is necessary to avoid a serious threat to public health and safety, or if the action is required by federal or state law.

(c) The full costs of drafting and processing the development agreement shall be reimbursed by the owner or applicant prior to final city council action on the agreement to the extent such costs exceed the initial application fee.

(5) Developer's Compliance. The development agreement shall include a clause stating that the city's duties under the agreement are expressly conditioned upon the property owner's substantial compliance with each and every term, condition, provision and/or covenant in the development agreement, all applicable federal, state, and local laws and regulations and the property owner's obligations as identified in any approval or project permit for the property identified in the development agreement.

(6) No Third Party Rights. Except as otherwise provided in the development agreement, the development agreement shall create no rights enforceable by any party who/which is not a party to the development agreement.

(7) Liability. The development agreement shall include a clause providing that any breach of the development agreement by the city shall give right only to damages under state contract law and shall not give rise to any liability under

Chapter 64.40 RCW, the Fifth and Fourteenth Amendments to the U.S. Constitution, or similar state constitutional provisions.

(8) Termination, Modification and Extension. Every development agreement shall have an identified, specific termination date. Upon termination, any further development of the property shall conform to the development regulations applicable to the property at the time of permit application. The city shall not modify any development agreement by extending the termination date unless the city council makes legislative findings that the additional benefits to the city provided by the developer in exchange for such extension of the development agreement outweigh the impacts from the development authorized by the extension. In no case shall an extension include the extension of provisions that are inconsistent with state or federal law at the time of such extension. Any request for a modification shall be consistent with the city's development regulations applicable to the property at the time of the request, not the original execution date of the development agreement. Any extensions granted shall be for no more than a length of 10 years. No more than two extensions of up to 10 years shall be granted. Extensions may not be granted unless an application for an extension is made no later than 180 days prior to the termination date in the development agreement or prior to the termination of any extension of a development agreement.

SECTION 3. Section 20.132.060 of the Port Orchard Municipal Code is hereby amended to read as follows:

20.132.060 Master sign plans.

(1) Approval Required. Before the city will issue any sign permit relating to space in a proposed new mixed use, nonresidential, multitenant building(s), or multitenant site development, the city must first approve a master sign plan for the building(s) and/or site development. In addition, a master sign plan may be voluntarily developed and maintained by the owner or agent of any new or existing nonresidential use. As an alternative to the procedures included in this section, an applicant may apply for approval under the development agreement procedures under chapter 20.26 POMC. If a development agreement is utilized, then the development agreement procedures shall replace the procedures in this section, provided, however, that the applicant will still provide the information listed in subsection 3 below as part of the review under the development agreement procedures.

(2) Review Procedures. A master sign plan is a Type I permit per POMC 20.22.030. The community development director shall make the decision on the master sign plan without a hearing. Refer to Chapter 20.24 POMC for application, review and approval procedures.

(3) Application Requirements. A complete master sign plan application shall consist of the following:

(a) A complete master sign plan application, including the applicant's name, address, phone number and email address. If the applicant is not the property owner(s), then the property owner(s) must be identified and the application must include an affidavit from the property owner(s), verifying that the property owner(s) has given permission to the applicant for the submission of the master sign plan application. No sign may be placed upon real property without the consent of the real property owner(s);

(b) A site plan drawn to legible scale, indicating the location of all buildings, driveways and pavement areas, landscape areas, abutting streets and proposed freestanding signs on the site;

(c) Elevation drawings of each building on a site that indicates proposed sign locations on each of the buildings;

(d) Maximum allowable signage on each elevation based upon a five percent calculation of all facades;

(e) The master sign plan application shall identify the sign features and sign types proposed to be used on each building and the proposed location. In addition, a statement shall be included which describes the manner in which the building or site owner wishes to allocate allowable signage among tenants and where specific tenant signage shall be located;

(f) A narrative description of the development to demonstrate that the master sign plan meets the required design standards of this chapter; and

(g) Fees. Payment of the appropriate fee for a master sign plan.

(4) Criteria for Approval. All signs in the master sign plan must meet the criteria for approval in POMC 20.132.050, Sign permits. In addition, all of the signs in the master sign plan:

(a) Shall be architecturally similar and visually related to each other through the incorporation of common design elements. Up to two sign types may be used on any one building. All sign cabinets, trim caps and all sign supports such as poles and braces shall be of a common color;

(b) Shall be architecturally integrated with the buildings included in the master sign plan; and

(c) Must not obscure the view of other signs which are consistent with this chapter.

(5) Notice of Final Decision. See POMC 20.132.050, Sign permits.

(6) Expiration of Master Sign Plan. Once a master sign plan is approved, the signs depicted in the approved plan must be installed within 180 days or the master sign plan will expire. The director may grant a 180-day extension to the master sign plan if such a request is made in writing prior to the expiration of the master sign plan and provided that the sign plan remains consistent with the sign

regulations. Building permits and street use permits for any signs shown in the master sign plan shall expire in accordance with other applicable code provisions. No sign may be erected under an expired master sign plan, even if the associated sign permit, building permit or street use permit has not expired.

(7) Amendment to Master Sign Plan. An application for an amendment to an approved master sign plan may be made at any time, subject to the same limitations, requirements and procedures as those that apply to an original application in this section. Tenants whose signs are included in the amendment application need the property owner's consent to file such application. In order to approve any such amendment, the director shall consider the existing signs on the building(s) subject to the approved plan when determining whether the application meets the criteria for approval in subsection (4) of this section.

SECTION 4. Severability. If any sentence, section, provision, or clause of this Ordinance or its application to any person, entity or circumstance is for any reason held invalid or unconstitutional, the remainder of the Ordinance, or the application of the provision to other persons, entities, or circumstances is not affected.

SECTION 5. **Corrections.** Upon the approval of the city attorney, the city clerk and/or code publisher is authorized to make any necessary technical corrections to this Ordinance, including but not limited to the correction of scrivener's/clerical errors, references, Ordinance numbering, section/subsection numbers, and any reference thereto.

SECTION 6. Publication and Effective Date. This Ordinance shall be in full force and effect five (5) days after posting and publication as required by law. A summary of this Ordinance may be published in lieu of the entire Ordinance, as authorized by state law.

PASSED by the City Council of the City of Port Orchard, **APPROVED** by the Mayor and attested by the Clerk in authentication of such passage this ***th day of *** 2023.

_____
Robert Putaansuu, Mayor

ATTEST:

_____
Brandy Wallace, MMC, City Clerk

APPROVED AS TO FORM: Sponsored by:

Charlotte A. Archer, City Attorney

, Councilmember

PUBLISHED:
EFFECTIVE DATE:

CITY OF PORT ORCHARD
DEPARTMENT OF COMMUNITY DEVELOPMENT

216 Prospect Street, Port Orchard, WA 98366
Ph.: (360) 874-5533 • FAX: (360) 876-4980

PLANNING COMMISSION STAFF REPORT

Agenda Item No:	5c	**Meeting Date:**	February 7, 2023
Subject:	Housing Action Plan – Existing Conditions Report Presentation	**Prepared by:**	Nick Bond, AICP, Development Director

Issue: The City of Port Orchard is currently developing a Housing Action Plan (HAP) to identify strategies, actions, and policy tools to create enough housing options to meet community needs. A Housing Action Plan is a policy document with a set of steps for the City to support and encourage new housing production that meets local housing needs for residents of all income levels. The HAP uses an equity lens to develop clear, actionable strategies to meet current and future housing needs. Port Orchard received a grant from the Washington State Department of Commerce to develop this HAP to address current and future housing needs.

The Existing Conditions Report reveals that housing production in Port Orchard falls short of what is needed, putting pressure on housing prices, rents and limiting housing options for Port Orchard's lowest-income households. The current housing inventory is mostly comprised of single-family housing units, which may not match the needs of the community, but recent permitting activity shows gains in multifamily development. Housing costs are rising more quickly than incomes, so households across income levels are impacted by the lack of diverse and affordable housing options.

Recommendation: N/A.

Suggested Motion: N/A

Attachments: City of Port Orchard Housing Action Plan Existing Conditions Report.

Port Orchard Housing Action Plan

Existing Conditions and Housing Needs Analysis Report

January 9, 2023

Introduction

The Port Orchard Housing Action Plan (HAP) defines strategies and implementing actions that promote greater housing diversity, affordability, and access to opportunity for residents of all income levels. The process to develop the HAP included a review of Port Orchard's system of policies, programs, and regulations which shape opportunities for housing development.

The purpose of this effort is to define strategies and actions that promote greater housing diversity, affordability, and access to opportunity for residents of all income levels.

The HAP is intended to inform updates to the Port Orchard Comprehensive Plan (most notably the Land Use and Housing elements) and to guide implementation strategies such as development regulations, housing programs, fee structures, and infrastructure spending priorities.

Table of Contents

Abbreviations

ACS. American Community Survey, an annual product of the U.S. Census Bureau.

AMI. Area median income.

BIPOC. Black, Indigenous, (and) People of Color.

CHAS. Comprehensive Housing Affordability Strategy, a product of the U.S. Department of Housing and Urban Development.

GIS. Geographic Information System.

HAP. Housing Action Plan.

HUD. U.S. Department of Housing and Urban Development.

LEHD. Longitudinal Employer-Household Dynamics, a product of the U.S. Census Bureau.

MFI. Medium family income.

MFTE. Multifamily tax exemption program.

MHI. Medium household income.

MSA. Metropolitan Statistical Area.

POMC. Port Orchard Municipal Code (city law).

OFM. Washington State Office of Financial Management.

RCW. Revised Code of Washington (state law).

Section 1 – Community Profile

The Community Profile discusses Port Orchard's current and future population and the age, race, and ethnicity of residents. It also discusses the size, income, and characteristics of the City's households, as well as households with specific needs and risks such as cost-burdened households, older adults, and adults with disabilities. These demographic and household characteristics provide background and context for the types of housing required to better serve all of Port Orchard's residents.

Population and Demographics

Historic and Future Population

Port Orchard's population in 2020 was 15,587 according to the U.S. Census. The Washington Office of Financial Management Postcensal 2022 population estimate for the city is 16,400. Figure 1 shows the city's population trends since 1960, average annual growth rates by decade, and the latest Port Orchard 2044 population target of 26,087 residents as detailed in the Kitsap County Countywide Planning Policy Update.

Port Orchard is a fast-growing community that has historically grown more rapidly than national and statewide averages. The city grew at an average annual rate of about 2.8 percent since 1960, but growth accelerated around 2000. Since 2000 the city has grown on average 4.0 percent annually, an increase of 9,442 residents. By comparison, Kitsap County grew at a rate of 0.9 percent per year over the same period and national population growth was 0.7 percent in the 2000-2020 period. The 2020 census and 2044 population target represent an expected annual growth rate of 2.2 percent per year, though recent trends have suggested higher growth rates closer to 3 percent indicating that Port Orchard may exceed its planning target.

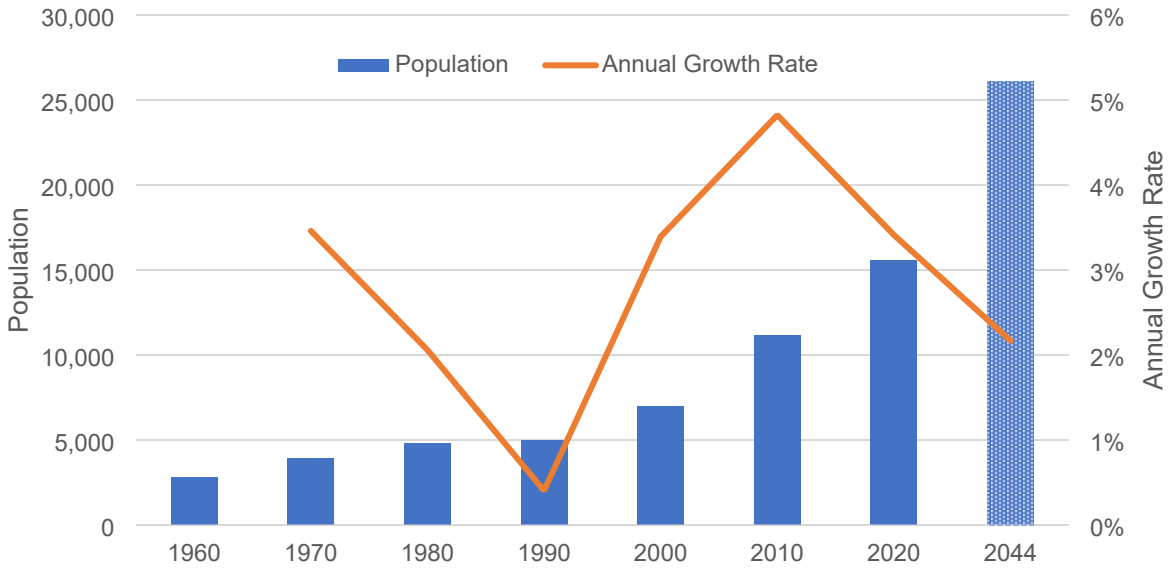


Figure 1. Port Orchard Population, Historic Through 2020 and Projected Through 2044 with Annual Growth Rates. Sources: WA OFM (Historic Population), Kitsap County Countywide Planning Policy Update 10/4/2022 (Projections)

The City of Port Orchard annexed a large amount of acreage between 2010 and 2012, which contributed to the comparatively rapid population growth in the 2010s. During this period, the City annexed 1,400 acres comprising 515 parcels. Together, the newly annexed areas make up 19.5% of Port Orchard's total acreage. Without granular population numbers at a parcel level, it is difficult to assess exactly how many new residents are represented by this area, but these annexations have certainly affected the rapid growth rates seen over the past 20 years.

Age, Race/Ethnicity, and Language

Figure 2 shows the racial and ethnic breakdown of the Port Orchard and Kitsap County populations. Port Orchard is about 67 percent White, compared with 76 percent in Kitsap County. The city has a higher share of Hispanic/Latino and mixed-race residents than the county and similar shares of Asian and Black/African-American residents.

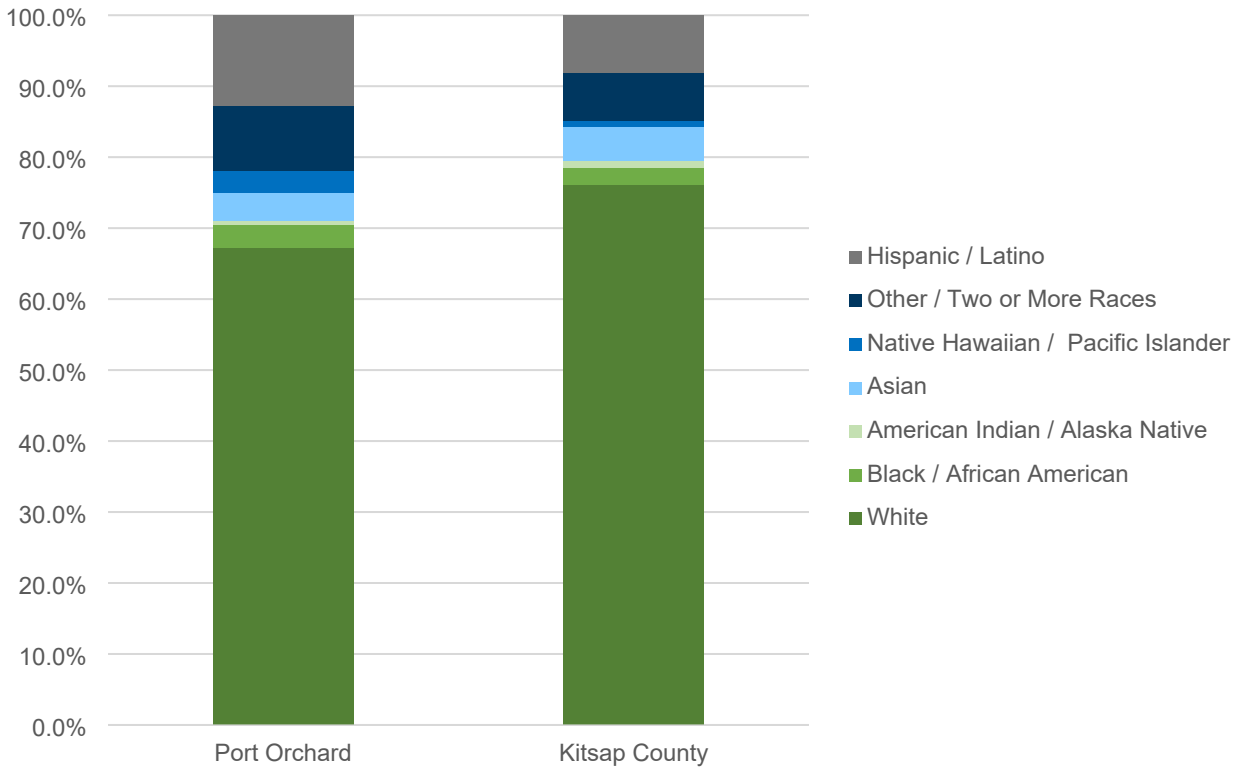


Figure 2. Racial and Ethnic Distribution in Port Orchard and Kitsap County, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table DP05

The Port Orchard population is somewhat younger than regional and statewide populations, as shown in Figure 3. Over half the population is under 35 years old, and 14 percent of residents are over 65, compared with 18 percent countywide. This younger population suggests a current need for smaller or more affordable housing units, and the potential for larger units as younger residents age and form households in coming decades.

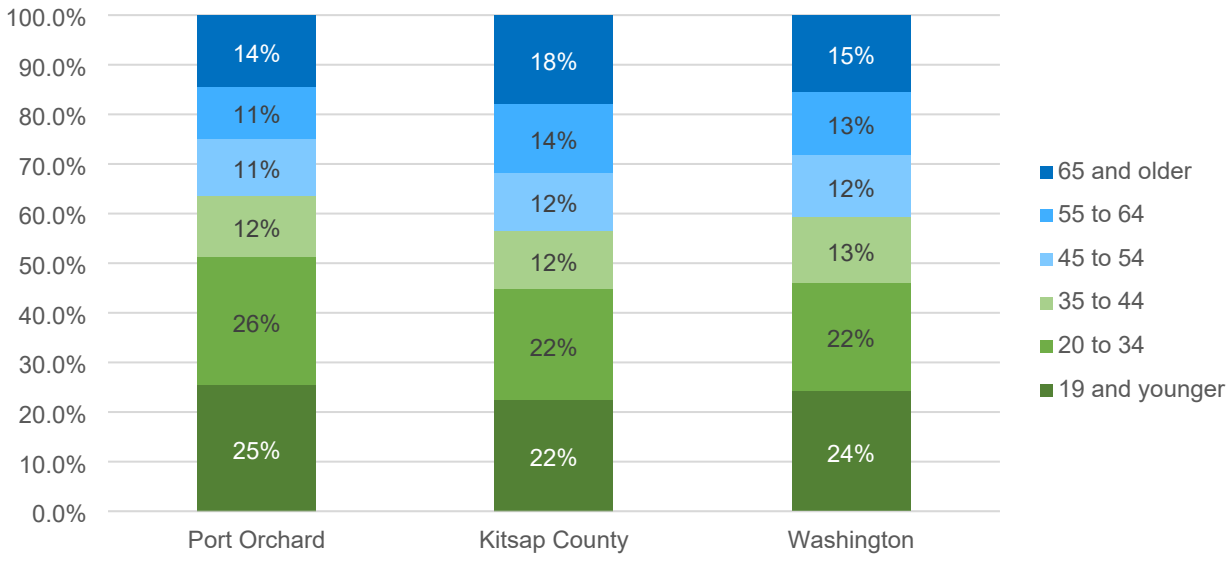


Figure 3. Age Distribution in Port Orchard and Kitsap County, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table DP05

The chart below shows the age distribution of Port Orchard residents by sex. Generally, there are more males in the 25 to 54 age group and more females in older age cohorts.

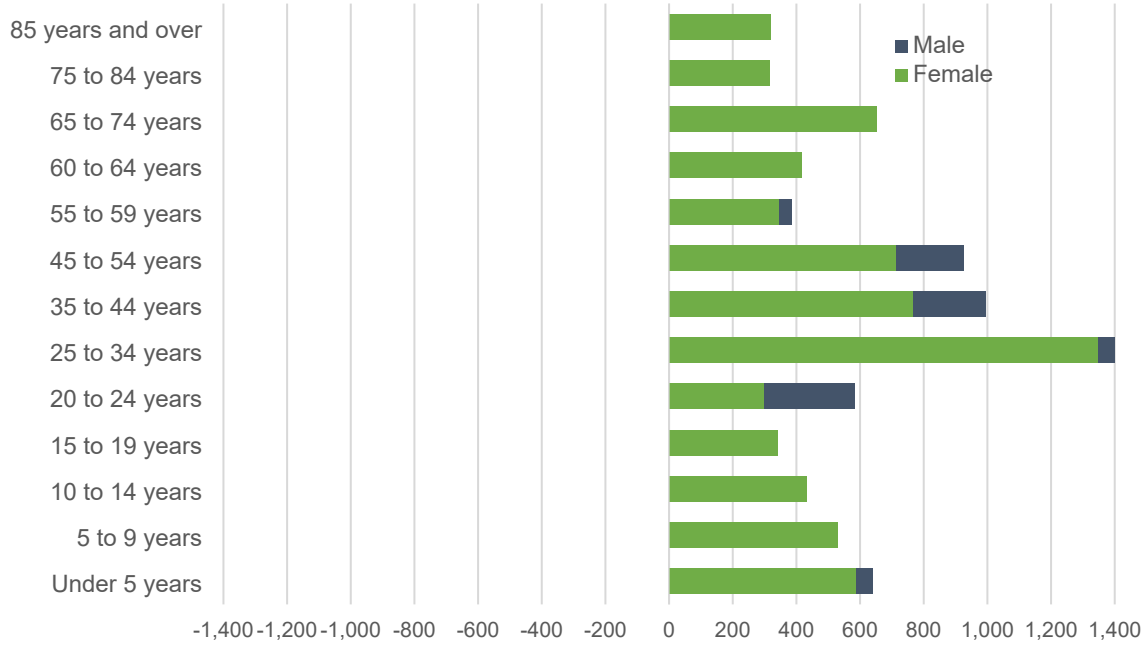


Figure 4. Age Distribution by Sex in Port Orchard and Kitsap County, 2020. Source: 2020 American Community Survey, Table S0101

Most Port Orchard residents are citizens born in the United States. About a third of Port Orchard's residents were born in the state of Washington. About half were born in another state (including U.S. territories). Almost five percent were born in Asia, with small numbers born in other regions of the world, as seen in Figure 5.

Place of Birth	Percent	Total
USA (same state)	37.0%	5,292
USA (other state)	52.3%	7,480
Europe	0.6%	79
Asia	4.8%	685
Africa	0.0%	0
Oceania	0.1%	20
Latin America	1.3%	188
Northern America	0.4%	59

Figure 5. Port Orchard Residents Place of Birth, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table CP02

Most Port Orchard households speak English as a first language. Almost six percent, or 815 households, speak an Asian or Pacific Island language, and about two percent, or 272 households, speak Spanish at home.

Census data on English language proficiency is not available at the geographic scale of Port Orchard, but across all of Kitsap County, about 29 percent of Spanish speakers and 39 percent of Asian or Pacific Island language speakers do not speak English "very well." Limited English proficiency can have implications for housing security if materials are not translated or there is confusion over contracts, expectations, or tenant rights.

Language	Percent	Total
English	91.8%	13,130
Spanish	1.9%	272
Indo-European languages	0.6%	86
Asian/ Pacific Island languages	5.7%	815
Other languages	0.1%	14

Figure 6. Language Spoken at Home, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table S1601

Household Characteristics

Household Size, Type, and Tenure

The U.S. Census Bureau defines a household as "all the people who occupy a housing unit." Households can be comprised of any combination of related family members, unrelated people, or individuals.[1] The 2020 American Community Survey estimated about 5,517 total households in Port Orchard, up from about 4,316 households in 2010—an increase of about 28 percent, or 2.5 percent per year. Figure 7 shows total households, occupied households, and the vacancy rate over the past decade.

The vacancy rate compares the total number of occupied versus unoccupied units. This accounts for all "natural vacancies" due to units on the market being available for sale or rent, second homes and seasonal homes, vacation rentals, and any other type of unoccupied housing. See Section 2 for more information on market-based vacancy rates.

[1] U.S. Census Bureau: Subject Definitions.

The vacancy rate has fluctuated from seven percent in 2010 to as high as 14 percent in 2015 but has decreased to 5.6 percent in 2020.This decreasing vacancy rate suggests increased demand for housing in the city.

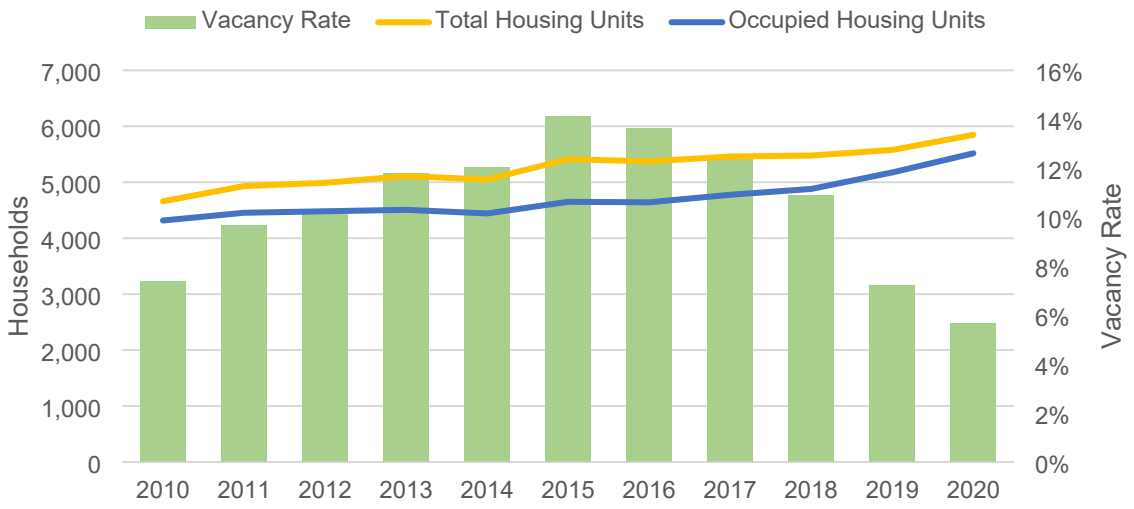


Figure 7. Vacancy Rates and Housing Unit Occupancy, 2010-2020. Source: 2010-2020 American Community Survey 5-Year Estimates, Table B25002

The following table shows household composition in Port Orchard and Kitsap County. Overall, the shares of family and non-family households are very similar to county averages, with nearly 70 percent of households classified as family households, about half of which are married couples. Twenty-two percent of Port Orchard residents live alone, and about half of those residents are over 65 years old. Household composition data can provide insight into the various types and sizes of housing to best meet the needs of the city's residents.

	Port Orchard		Kitsap County	
Household Type	**Total**	**Percent**	**Total**	**Percent**
Total Households	**5,517**	**100%**	**105,758**	**100%**
Family households	3,819	69%	71,415	68%
Married-couple family	2,995	54%	56,388	53%
Other family	824	15%	15,027	14%
Nonfamily households	1,698	31%	34.343	32%
Householder living alone	1,214	22%	25,787	24%
Householder 65 years and over	601	11%	11,396	11%

Figure 8. Household Composition in Port Orchard, 2020. Source: 2020 American Community Survey (ACS) 5-Year Estimates, Table S2501

Figure 9 shows tenure in Port Orchard. About 60 percent of households are homeowners and 40 percent are renters. This is broadly similar to statewide averages though a higher share of renter households than in Kitsap County, likely owing to the large number of apartments in Port Orchard compared to the rest of the county.

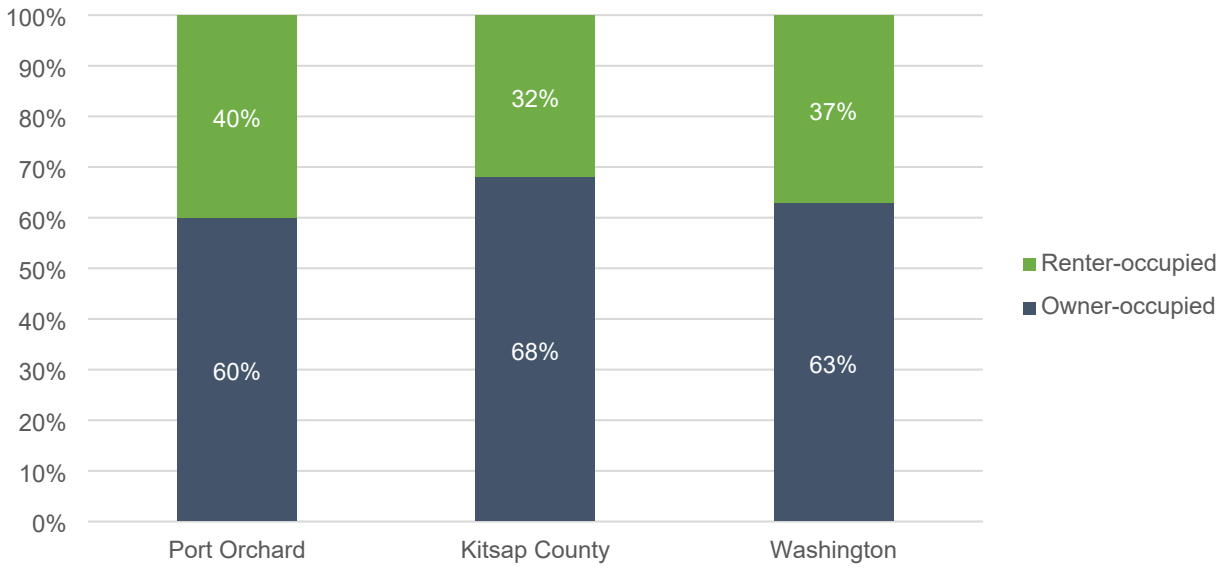


Figure 9. Tenure in Port Orchard, 2020. Source: 2020 American Community Survey (ACS) 5-Year Estimates, Table S2501

Renters can face increased housing instability due to evictions and rent increases not faced by homeowners. In addition, renters are more likely to be BIPOC and lower-income households, compounding the effects of these housing challenges. As shown below in Figure 11, about 86 percent of ownership households in Port Orchard have a householder who identifies as White, compared with 64 percent of renter households. Nationally, Black households had the highest renter rate in 2022 at 55 percent, and Hispanic households were at 51 percent, compared to 26 percent for white households.[2] Additionally, as discussed below under "Income" and shown in Figure 14, renters in Port Orchard earn less than homeowners, with a median household income for renter households of $46,209 in 2020 compared to $97,504 for ownership households.

Race of Householder	Ownership Households	Renter Households
One Race		
White	89.4%	71.5%
Black or African-American	2.2%	4.5%
American Indian or Alaska Native	0.3%	0.0%
Asian	3.0%	4.3%
Native Hawaiian or Pacific Islander	0.8%	8.8%
Some Other Race	0.5%	3.2%
Two or More Races	**3.8%**	**7.8%**
Hispanic or Latino Origin	**6.2%**	**12.9%**
White alone, not Hispanic or Latino	**86.4%**	**64.4%**
All Households	**60.1%**	**39.9%**

Figure 10. Tenure by Race in Port Orchard, 2020. Source: 2020 American Community Survey (ACS) 5-Year Estimates, Table S2502

[2] Harvard University Joint Center for Housing Studies, "The State of the Nation's Housing 2022"

Figure 11 shows the breakdown of Port Orchard's households by tenure and household size. About 34 percent of households are two-person households, and 27 percent have four or more members. Renters make up a slightly larger share of smaller households, although 11 percent of four-or-more-person households are also renters.

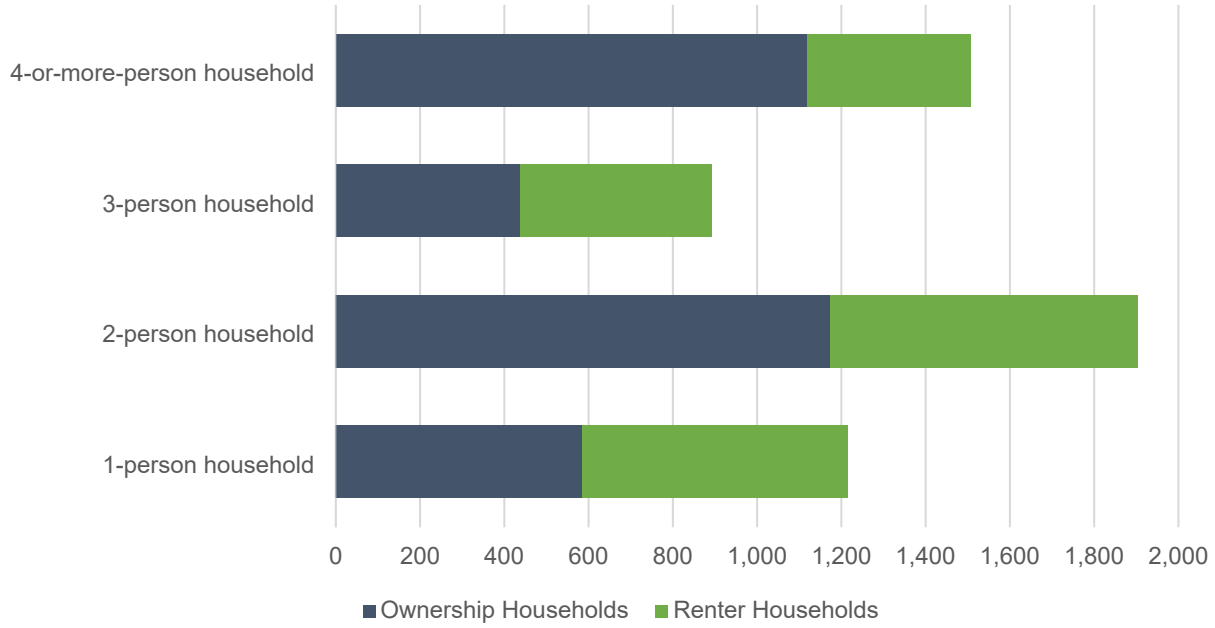


Figure 11. Port Orchard Tenure by Household Size, 2020. Source: 2020 American Community Survey (ACS) 5-Year Estimates, Table S2501

The average household size in Port Orchard is 2.4 people per household[3].

There is a mismatch between housing size and household size in Port Orchard. Fifty-six percent of households are made up of one or two people, whereas only 37 percent of housing units are studio, one- or two-bedroom units, as shown below in Figure 12. Although smaller households may prefer to live in larger units, this type of mismatch can cause housing affordability issues if smaller households are forced to rent more expensive larger units due to supply constraints.

[3] 2020 American Community Survey 5-Year Estimates, Table DP04

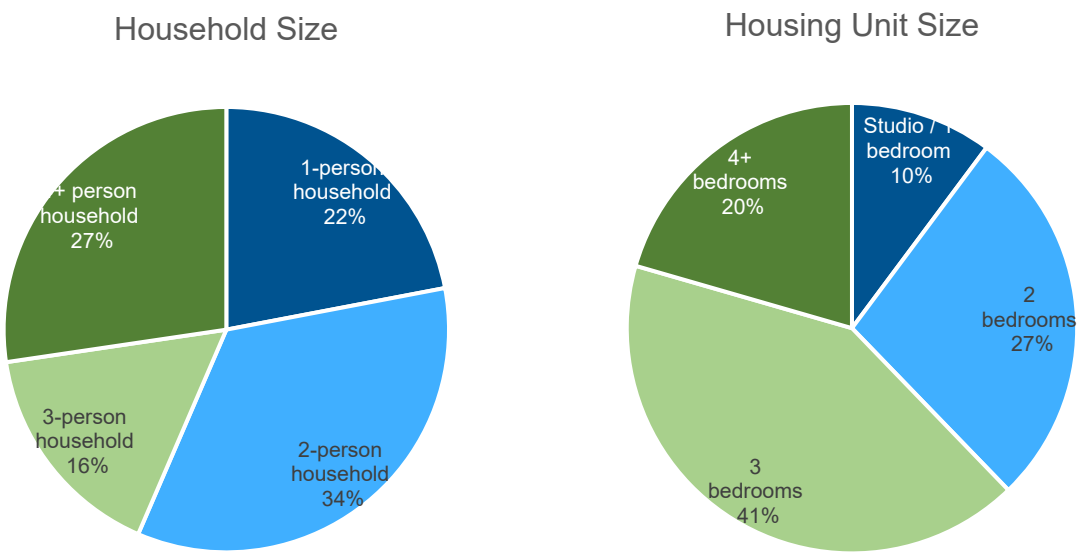


Figure 12. Household Size and Housing Unit Size in Port Orchard, 2020. Source: 2020 American Community Survey 5-Year Estimates, Tables S2501, DP04

When analyzed by tenure, there are more significant disparities in household size and housing unit size for homeowners, as shown below in Figure 13. Only 2 percent of ownership housing units are studio or one-bedroom units, whereas 53 percent of ownership households are one- or two-person households. The rental housing stock is more closely matched with renters' household sizes in the city. This shows that residents in smaller households seeking to purchase housing may face difficulties and higher costs due to lack of availability of small ownership units.

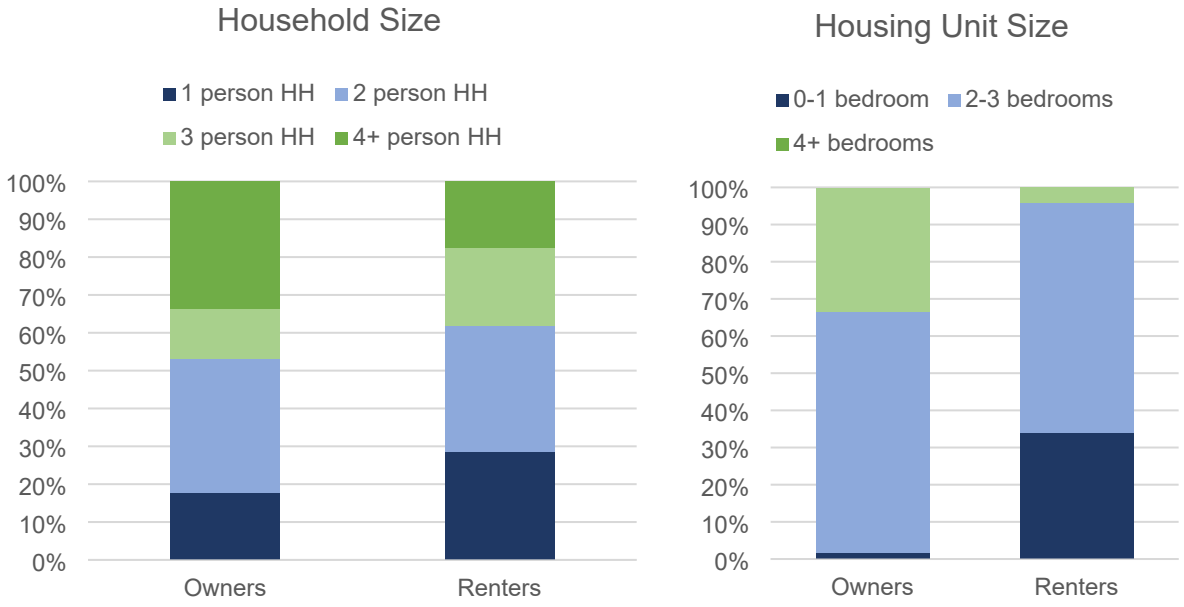


Figure 13. Household Size and Housing Unit Size by Tenure in Port Orchard, 2020. Source: 2020 American Community Survey 5-Year Estimates, Tables S2501, S2504

Income

The median household income (MHI) in Port Orchard was $71,719 in 2020, $7,250 less than the Kitsap County MHI and $5,287 less than the statewide average. The Port Orchard MFI increased 21 percent since 2010, when adjusted for inflation. This is significantly higher than the 12 percent increase in Kitsap County and 14 percent increase across Washington during the same timeframe, as shown in Figure 14.

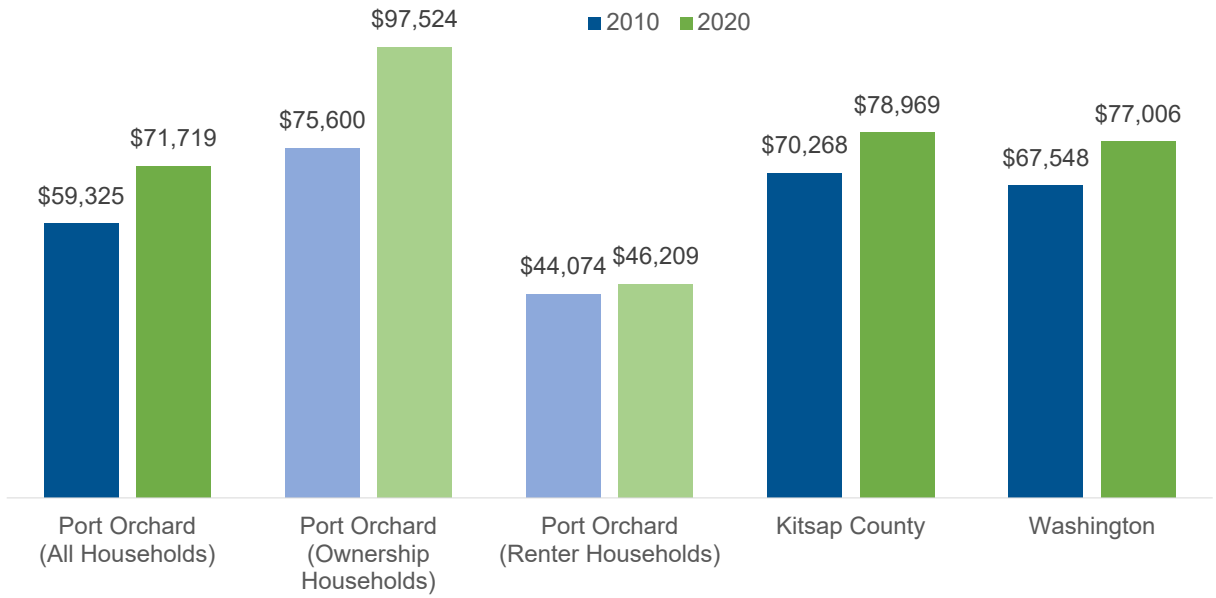


Figure 14. Inflation-Adjusted Median Household Income in Port Orchard and Region, 2010-2020. Source: 2010-2020 American Community Survey 5-Year Estimates, Table S2503, CPI Inflation Index

Renters in Port Orchard earn considerably less than homeowners. In 2020, the MHI for ownership households was $97,524, compared to only $46,209 for renter households. In addition, renters in Port Orchard have seen only a five percent increase in incomes between 2010 and 2020, compared to a 29 percent increase in incomes of ownership households, when adjusted for inflation. Rental households' lower incomes and slower income growth compared with ownership households raises concerns over the ability of renters to keep up with rising housing costs or to move into homeownership, particularly given that wealthier ownership households may be able to pay more for housing.

For the Bremerton-Silverdale Metropolitan Statistical Area (MSA), the 2022 median family income (MFI) is $102,500 and the 2020 MFI was $91,700.

Median family income (MFI) is used by the U.S. Department of Housing and Urban Development to set income limits for subsidized affordable housing. Data in this report about cost-burdened households and affordable housing thresholds is based on the MFI measurement.

MFI is based on Census-reported family incomes and based on a household of four people. As a result, MFI is typically higher than the **median household income (MHI)**, which is an average from all households regardless of size.

When broken down across income levels, the largest share of Port Orchard households earn between $75,000 and $100,000 per year, as shown in Figure 15. Port Orchard has smaller shares of high-income earners making over $150,000 per year than Kitsap County, and a much larger share of the lowest-income households earning less than $10,000 per year than countywide averages. This shows a high level of need for subsidized affordable housing, discussed further in Section 2 under “Affordable Housing.”

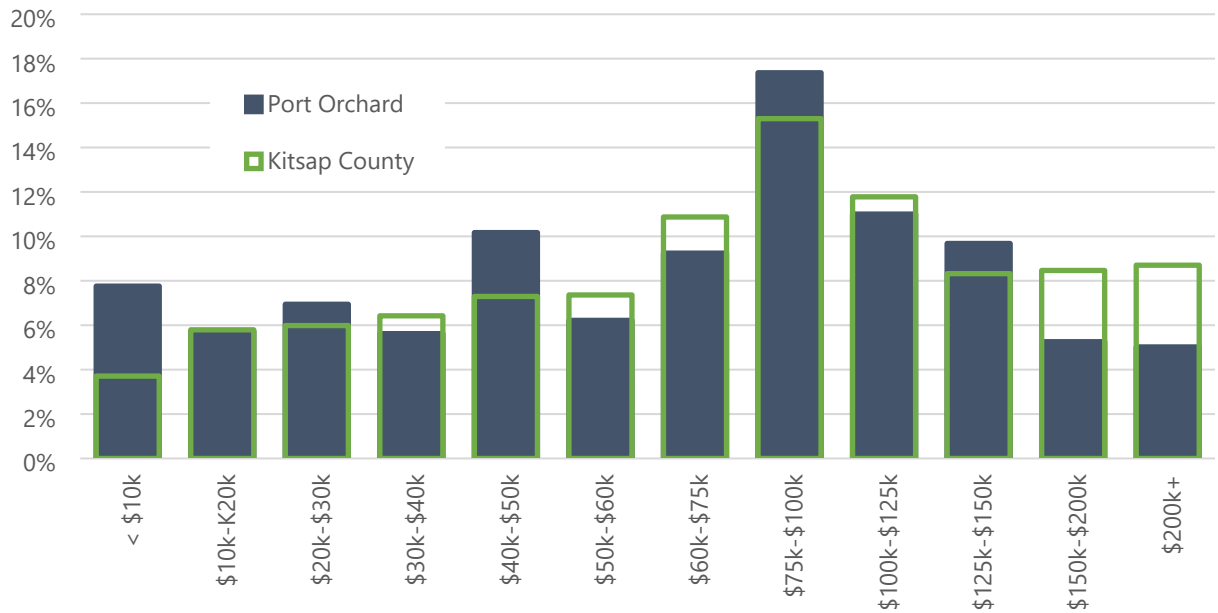


Figure 15. Household Income in the Past 12 Months, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table B19001

Figure 16 below is from HUD Comprehensive Housing Affordability Strategy (CHAS) data[4] for 2019 and shows a breakdown of Port Orchard’s households by income level and tenure. Almost half of Port Orchard residents (46 percent) earn less than 80 percent of the AMI, a common threshold for subsidized housing eligibility. About 69 percent of renter-occupied households earn less than 80 percent AMI, while 30 percent of owner-occupied households earn less than 80 percent AMI.

Area median income (AMI) is another data point often used by local governments to set income limits for subsidized affordable housing. It is the household income for the median/'middle' household in a given region.

Additionally, over a quarter (28 percent) of renters earn under 30 percent of the AMI, or $27,500 for a family of four, demonstrating the need for more subsidized affordable housing in Port Orchard, which is typically the only type of housing that can meet these deep affordability levels. Stakeholders described over 1,000 people are on the waiting list for housing vouchers at the Kitsap Housing Authority, which manages vouchers in both Bremerton and Port Orchard.

[4] Comprehensive Housing Affordability Strategy, a HUD dataset based on calculations from the American Community Survey 5-Year Estimates that provides a series of tables demonstrating housing problems and needs.

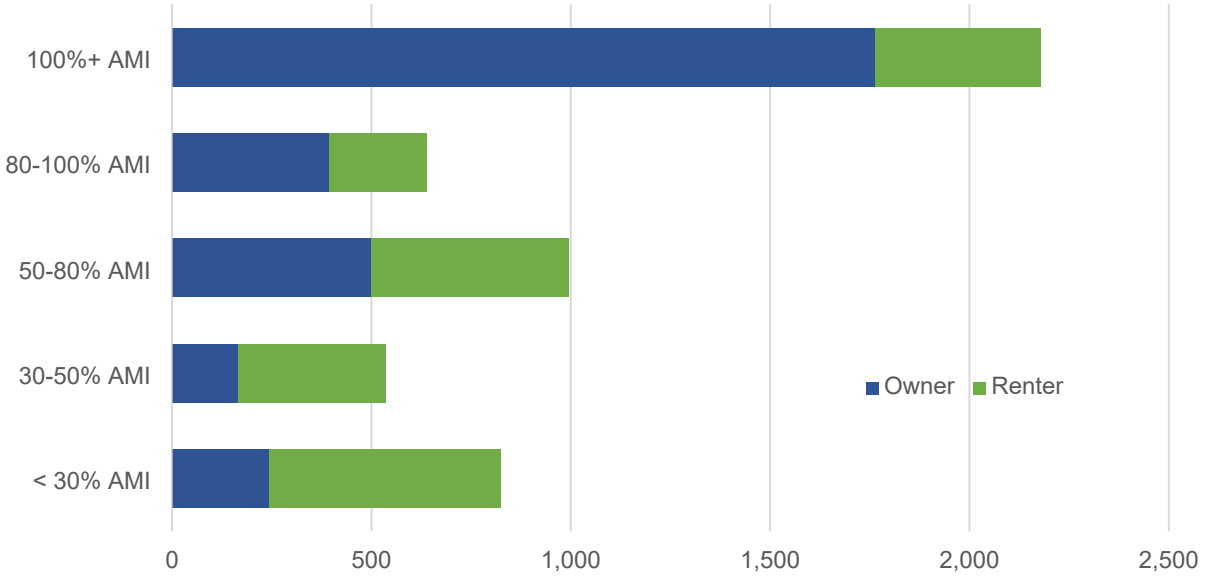


Figure 16. Port Orchard Households by Income Level and Tenure. Source: 2015-2019 HUD CHAS data.

Vehicle Ownership

Figure 17 shows number of vehicles available to Port Orchard households by the tenure of unit. Owner-occupied units are more likely to have two or three vehicles, while renter-occupied units are more likely to have one to two vehicles. Also of note, 14 percent of renter households have no access to a vehicle. These vehicle ownership ratios are similar to statewide averages, although ownership households are slightly more likely to have two vehicles in Port Orchard than statewide.

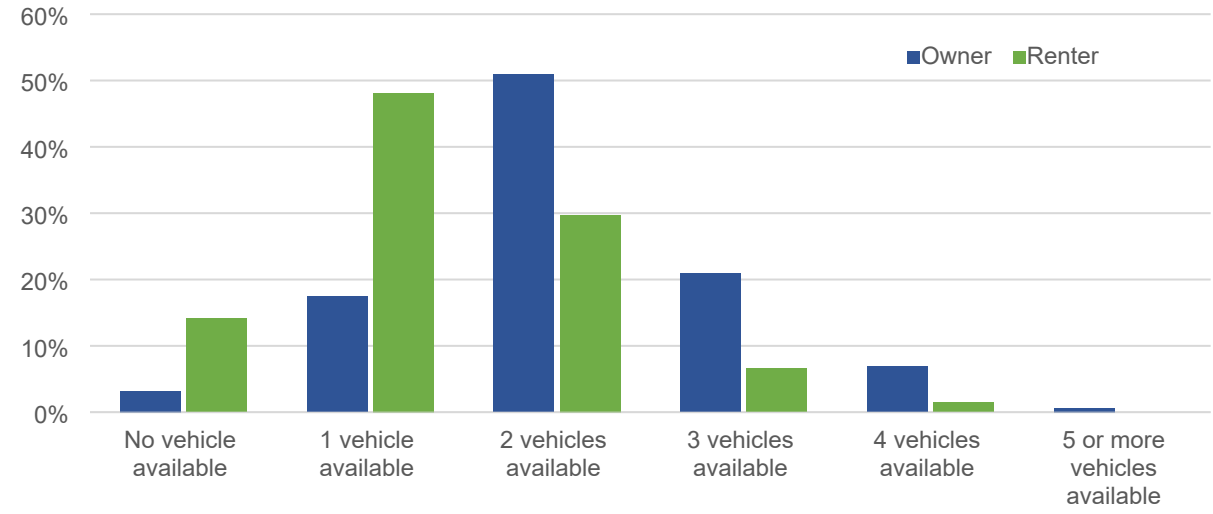


Figure 17. Vehicle Ownership by Tenure of Unit, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table B25044

Employment Trends

Understanding workforce and employment trends is essential for housing planning. A growing, shrinking, or shifting economy can affect residents' ability to afford housing and limit or expand their housing choices. Strong economies in nearby communities can also affect commuting and residential patterns.

Figure 18 shows changes in Port Orchard's top employment sectors from 2009 to 2019, the year of the most recent Census employment data. Retail jobs have increased significantly, and health care and food service jobs have also seen growth since the 2008 recession. The large number of public administration jobs reflect county offices within Port Orchard, the county seat.

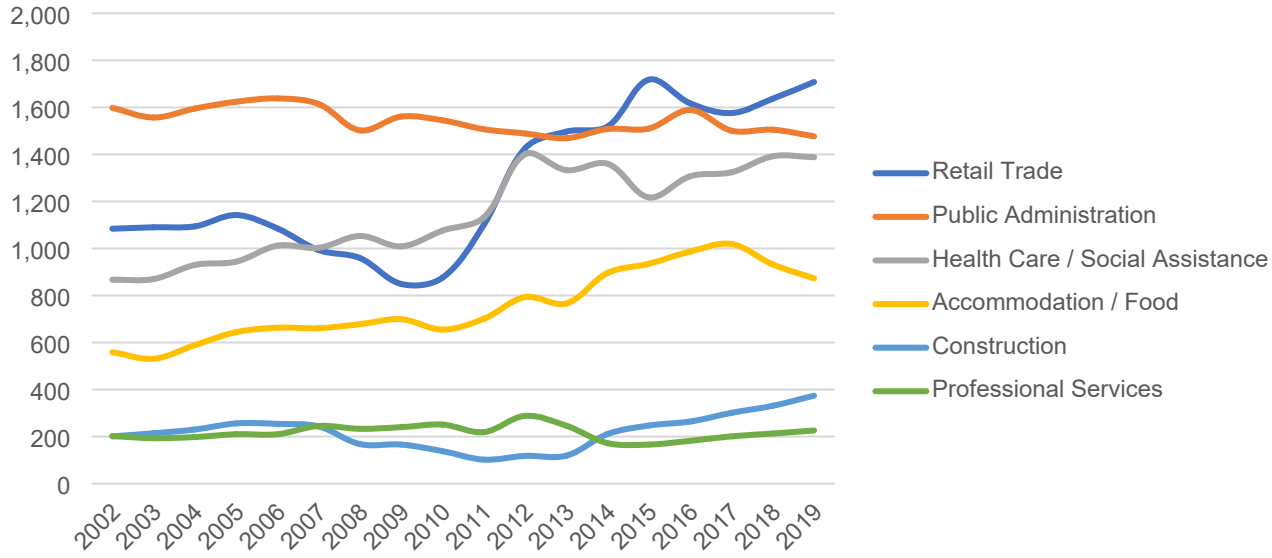


Figure 18. Job Trends by Top Sectors in Port Orchard, 2009-2019. Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) via Census OnTheMap

Figure 19 shows the top job sectors in the city and the top job sectors worked by Port Orchard residents. Many of the employees in the top sectors, particularly retail and public administration, are not Port Orchard residents. On the other hand, there are larger shares of residents who work in professional services, education, and manufacturing than jobs in the city. This reflects a variety of scenarios, including technology/knowledge workers employed in Seattle, regional educators at schools in nearby cities, and industrial employees in surrounding areas, potentially connected to the Naval shipyard in Bremerton.

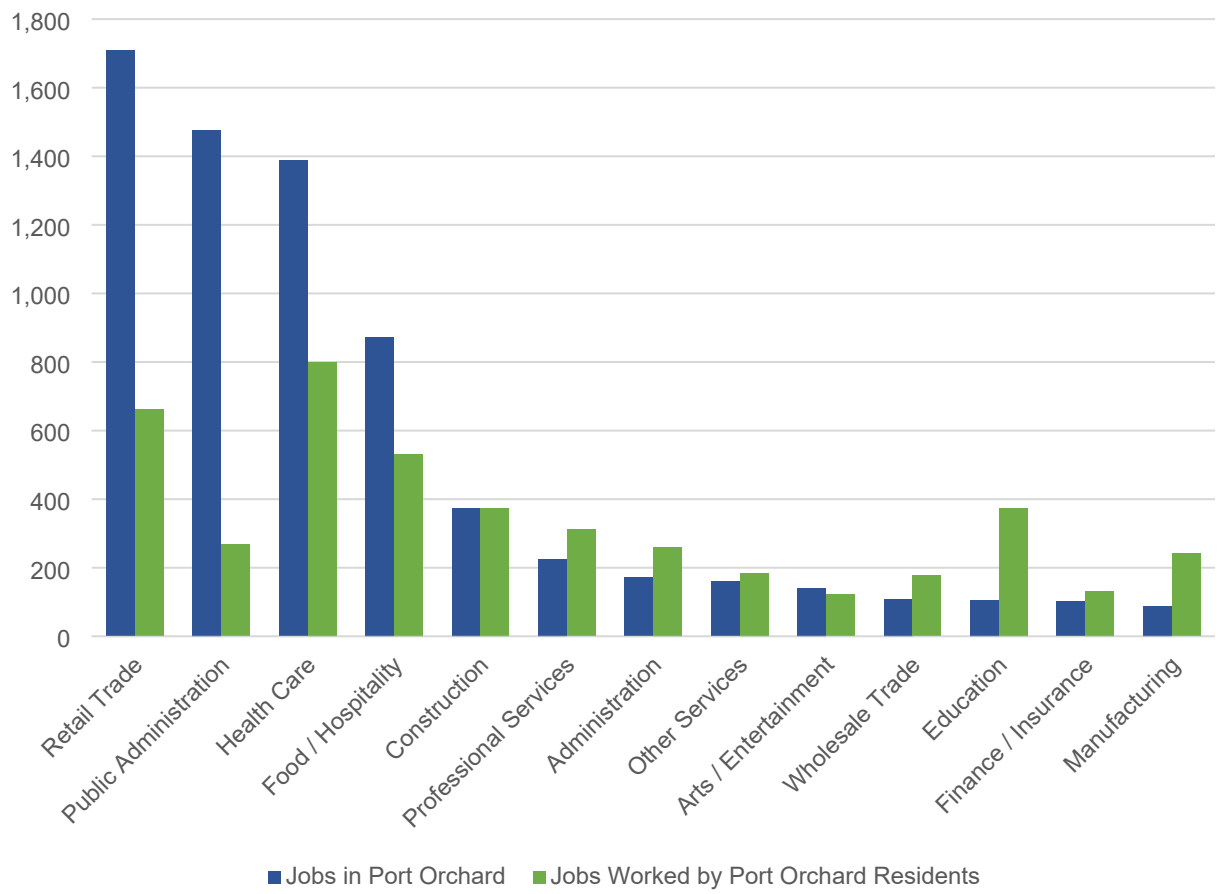


Figure 19. Top Job Sectors in Port Orchard and Jobs Worked by Port Orchard Residents, 2019. Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) via Census OnTheMap

The map below shows commuting patterns of Port Orchard workers as of 2019, the year of the most recent Census commuter data. About 585 workers, or 11.7 percent of Port Orchard employees, both lived and worked in the city. 6,540 workers lived outside of the city and commute in for work, and 4,396 workers lived in the city but commuted to work elsewhere.

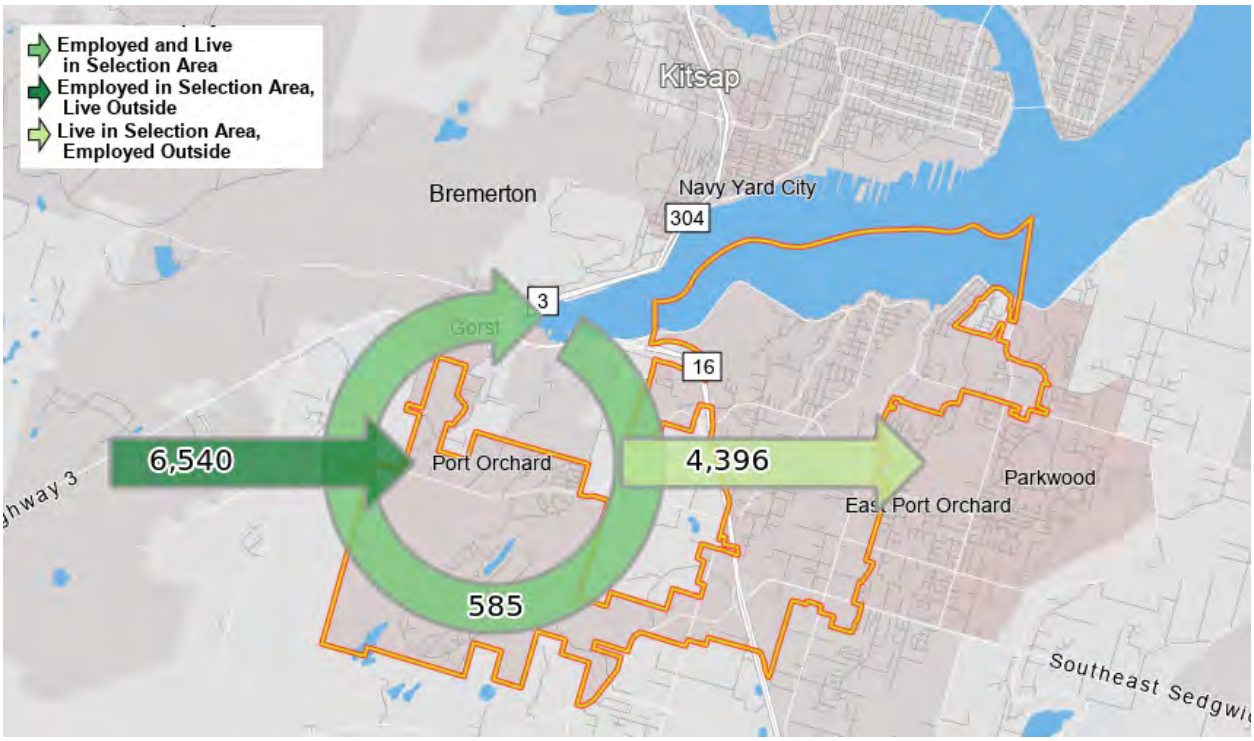


Figure 20. Port Orchard Commuting Inflow and Outflow, 2019. Source: U.S. Census Bureau LEHD (Longitudial Employer-Household Dynamics) via Census OnTheMap tool.

As shown below in Figure 21, a similar amount of Port Orchard residents were working in Seattle, Port Orchard, and Bremerton in 2019. Smaller shares of residents were working in other nearby locales, including unincorporated East Port Orchard. This data is not yet available for more recent years but monitoring these commuting trends will be important due to the changes in workplace dynamics and remote work since the COVID-19 pandemic that began in 2020.

Work Location	Percent
Seattle city, WA	12.3%
Port Orchard city, WA	11.7%
Bremerton city, WA	10.8%
Silverdale CDP, WA	5.0%
East Port Orchard CDP, WA	4.7%
Tacoma city, WA	4.3%
Gig Harbor city, WA	4.0%
Bellevue city, WA	2.2%
Kent city, WA	1.7%
Poulsbo city, WA	1.5%
All Other Locations	41.6%

Figure 21. Port Orchard Commuting Locations, 2019. Source: U.S. Census Bureau LEHD (Longitudial Employer-Household Dynamics) via Census OnTheMap tool.

Section 2 – Housing Inventory and Production Trends

This section discusses the type and age of Port Orchard's existing housing stock and current and future housing production. It also identifies special housing types in Port Orchard such as subsidized affordable units and senior housing. An inventory of existing housing creates a baseline for future housing planning and identifies market trends.

Total Housing Units

Port Orchard's 5,577 housing units account for approximately five percent of Kitsap County's housing units. The breakdown of unit types is shown below in Figure 22. Sixty-three percent of units are single-family detached units, somewhat less than the county. Port Orchard has a noticeably higher share of buildings with 5-19 units than the county, and an overall higher share of multifamily units.

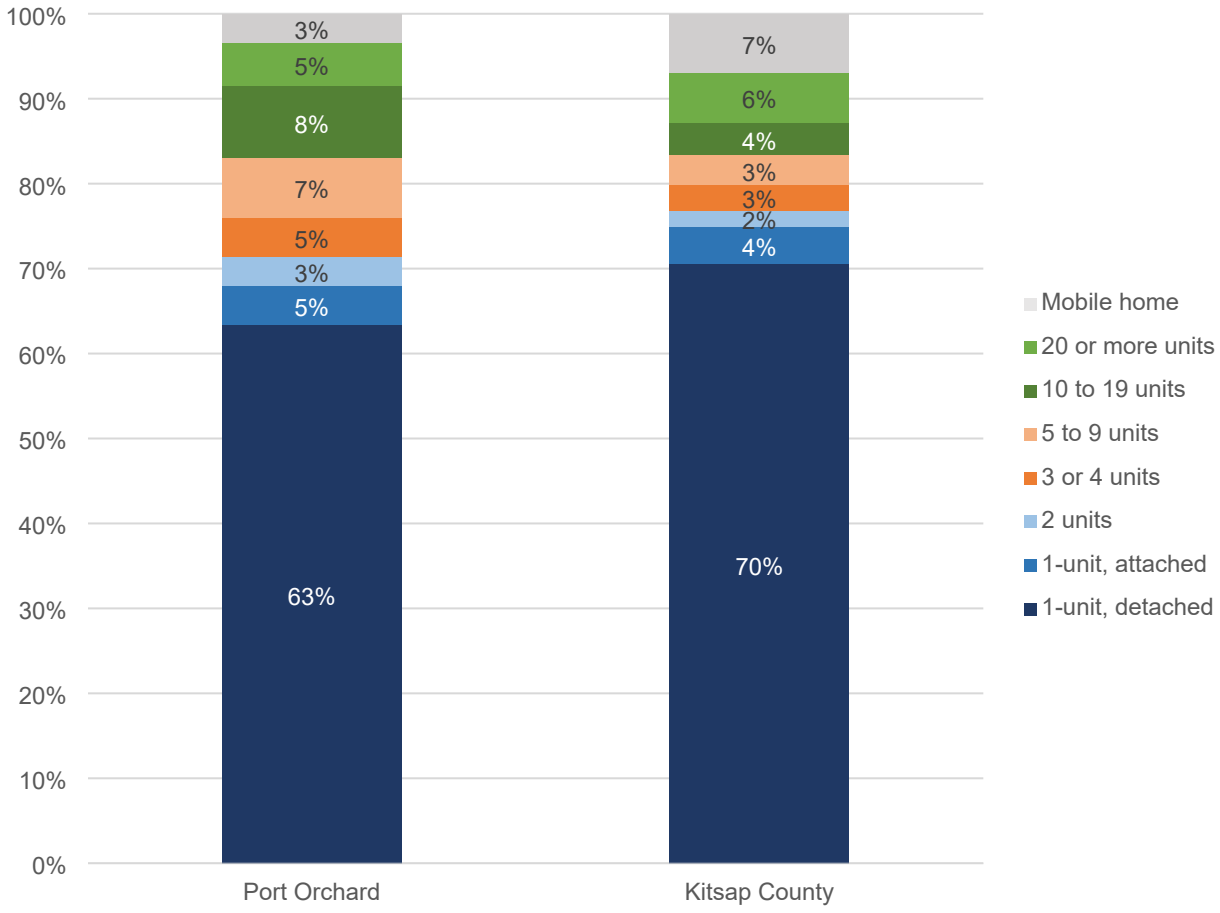


Figure 22. Housing Unit Type in Port Orchard and Kitsap County, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table DP04.

Housing Age and Production

Figure 23 shows the age of housing stock in Port Orchard as of 2020. The city has a considerably younger housing stock than Kitsap County overall, with 57 percent of housing built since 1990, compared with 40 percent countywide. However, Port Orchard also contains a slightly larger share of older buildings constructed before 1950 than the county, at 23 percent.

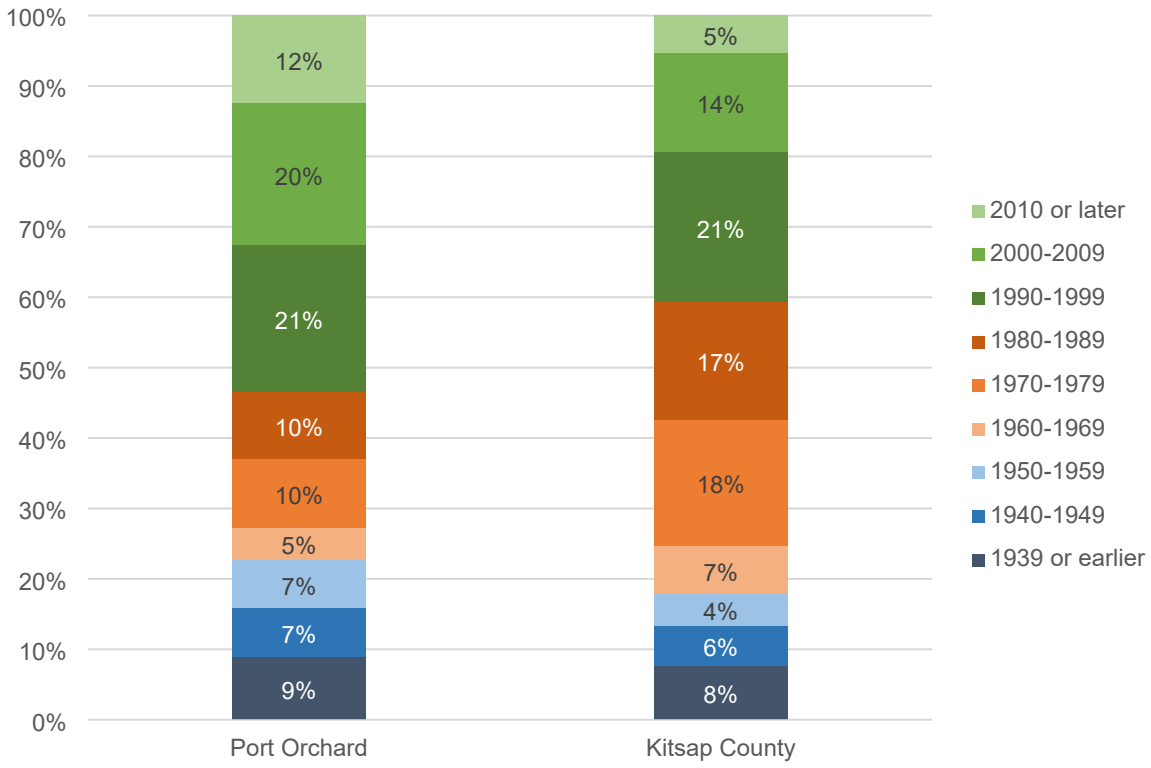


Figure 23. Age of Housing in Port Orchard and Kitsap County, 2020. Source: 2020 American Community Survey 5-Year Estimates, Table DP04.

Building permit issuance data shown below in Figure 20 corroberates this data on housing age. A significant number of multifamily housing permits were issued in the 1990s, and multifamily permitting has accelerated in the past decade, as have single-family housing permits. This data shows issued permits, not completions, so much of the housing shown in the past several years has not yet been occupied but is in the pipeline.

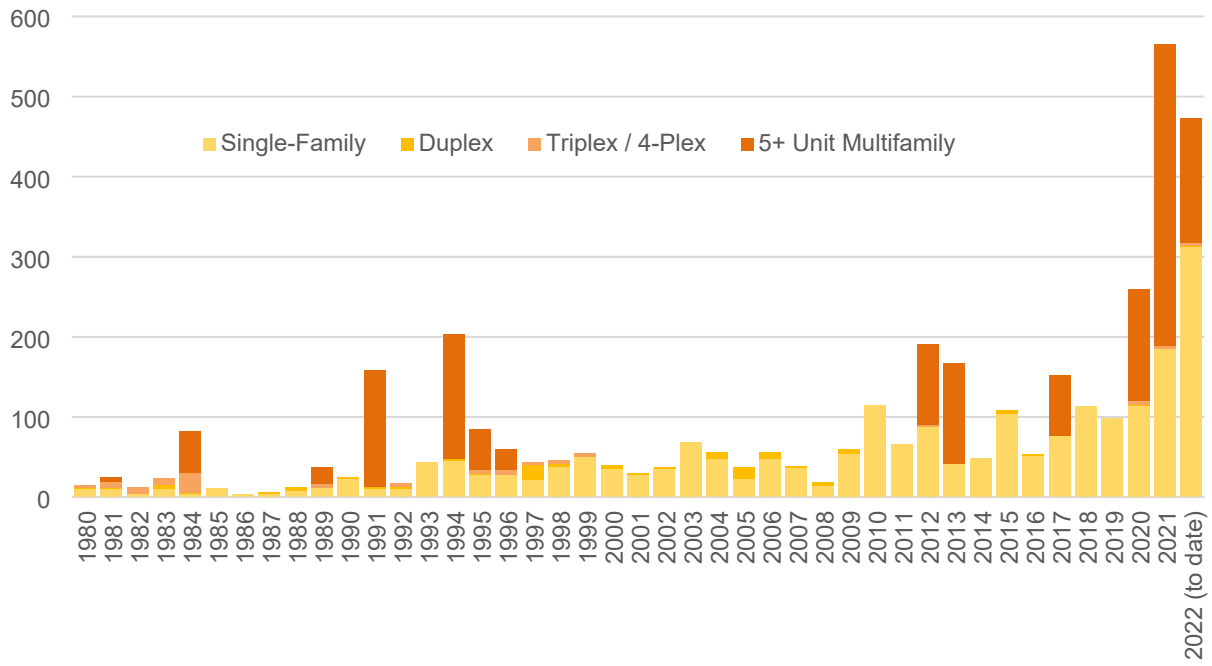


Figure 24. Port Orchard Building Permits Issued by Unit Type, 1980-2022 (to date). Source: HUD State of the Cities Data Systems (SOCDS)

Figure 25 shows expected dates when certificates of occupancy will be granted for permitted housing in the pipeline. In total, 5,198 units are permitted and expected to be completed in Port Orchard in the coming years, and 2,482 of those units are planned to be completed between 2022 and 2024, of which 45 percent will be multifamily units. This high rate of housing production will nearly double the city's housing inventory within the next several years.

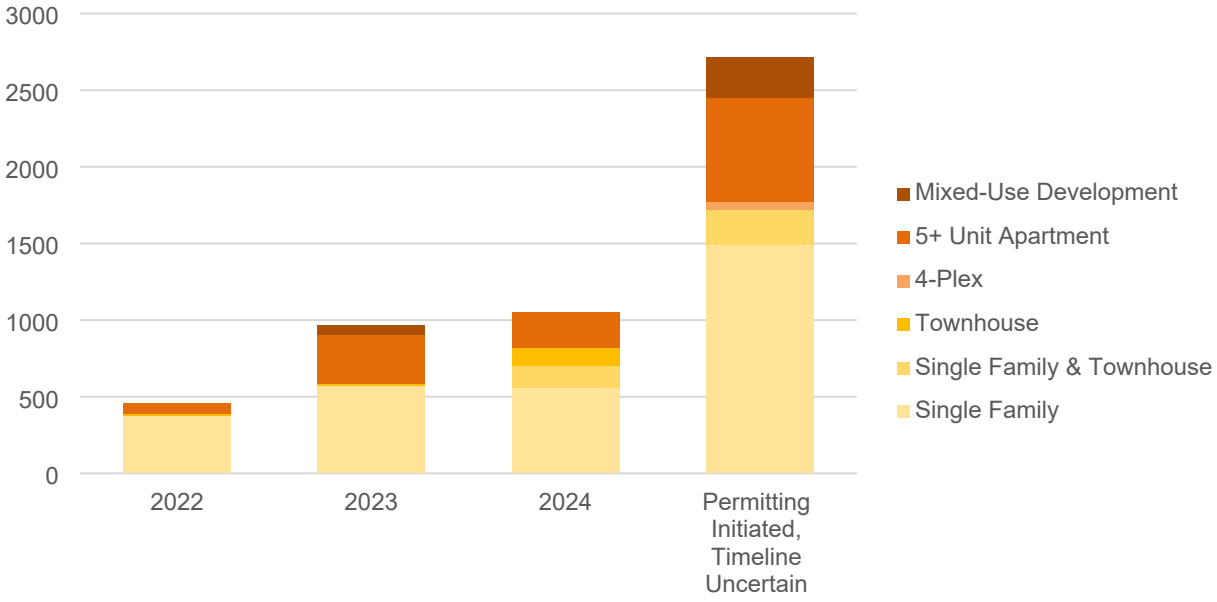


Figure 25. Number of Units Permitted with Certificates of Occupancy Expected 2022 and Later by Unit Type. Source: City of Port Orchard.

Interviews with developers and stakeholders conducted by the project team in summer 2022 confirmed a large amount of single-family and apartment construction both underway and planned. In particular, the McCormick Woods development, a large master planned community in the western part of the city, has been in development since the 1980s and will significantly increase the city's housing stock, as well as representing a portion of the newly annexed land previously discussed. City permitting data indicates 2,729 units at McCormick Woods either permitted or currently in the permitting process.

The multifamily developments built in Port Orchard to date have been walk-up apartments. Some developers indicated that there may be a market for denser podium-style development in the 10-20 year time horizon, and at least one such project has recently been proposed (see the project spotlights later in this section).

Vacancy Rates

Port Orchard's vacancy rates for rental and ownership properties are shown in Figure 26. In 2020, the Census-reported rental vacancy rate was 5.8 percent and the ownership vacancy rate was 1.4 percent. Both vacancy rates have decreased over the past decade as shown below, and the 5.8 percent rental vacancy rate reflects the large amount of rental apartment construction which has taken place in Port Orchard in recent years.

Note that this vacancy rate is based only on dwelling units that are available on the market for sale or rent. It is different from the total number of unoccupied units discussed in Section 1.

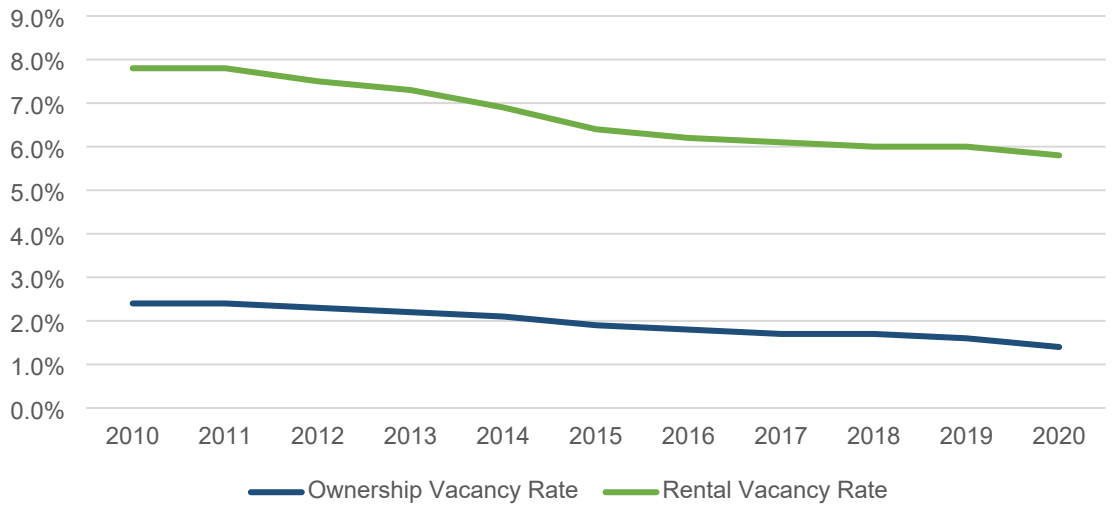


Figure 26. Vacancy Rates in Port Orchard, 2010-2020. Source: American Community Survey 5-Year Estimates, Table DP04

In contrast with the relatively high census-reported rental vacancy rates shown above, CoStar, a commercial real estate database, estimates vacancy rates for multifamily apartments in Port orchard at about 3.5 percent as of mid-2022, as shown below in Figure 27, which shows the stabilized (accounting for new development coming onto the market) vacancy rates in the city over the past decade. This lower vacancy rate reported by the real estate industry may be more representative of the strong demand for apartments in the city.

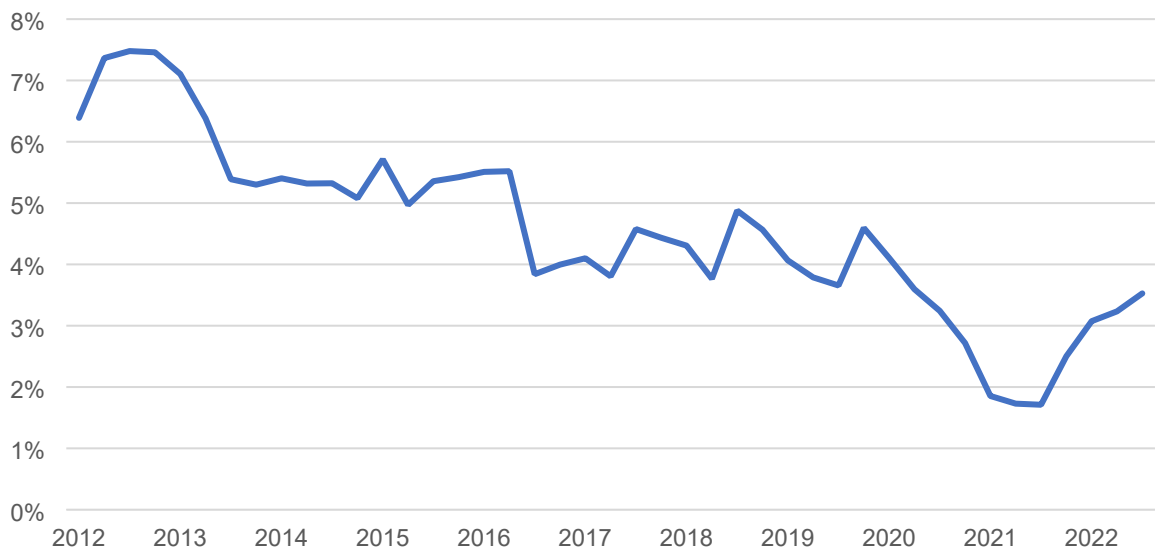


Figure 27. Multifamily Rental Vacancy Rate in Port Orchard, 2012-2022. Source: Costar

Vacation Housing

Census data shows there are zero seasonal and recreational housing units in Port Orchard.

Short-Term Rentals

Short-term rentals, also known as vacation rentals, are considered stays of 30 days or less in a residential dwelling. Looking at listings on Airbnb, VRBO, and Vacasa for the December to January 2022/2023 holiday season, there are 15 short-term rentals in Port Orchard.

Most of the short-term rentals are in the downtown area, with proximity to the water and Bay Street. Rentals range from a private room up to five bedrooms. The average cost per night for a private room or one bedroom is $114, $194 per night for two- and three-bedroom listings, and $292 per night for four- and five-bedroom listings. City staff report that many short-term rentals are not paying the required lodging tax.

Affordable Housing

Affordable housing is housing reserved for people earning below a certain income and who cannot afford market-rate costs (other interrelated terms include low-income housing, subsidized housing, public housing, or rent-restricted housing). Affordable housing properties may be reserved for people meeting other criteria such as families with children, seniors, people with physical or intellectual disabilities, or people with substance abuse disorders.

Affordable housing is important to support community members who face barriers in the private housing market, especially those who are on the edge of or transitioning out of homelessness. This type housing is subsidized and mostly operated by government or non-profit organizations.

The main affordable housing provider in Port Orchard is Housing Kitsap, a government agency that provides housing assistance for families who need affordable alternatives to the private market. Housing Kitsap operates countywide. In and near Port Orchard, Housing Kitsap's portfolio includes 375 units across six properties and 109 "Section 8" vouchers (which pays rents for voucher recipients).

In addition, Housing Kitsap has a Mutual Self-Help Housing program where homeowners put in sweat equity to build their home and purchase it at an affordable price point. Housing Kitsap also has a Home Rehabilitation Program that assists with home repairs. According to Housing Kitsap staff, approximately 500 homes in Port Orchard have benefited from the two programs since the 1970's.

Under Port Orchard's multifamily tax exemption program, 20 privately-owned units are being rented at affordable rates. See more information under Section 5.

Property Name	Zone	Units	Housing Type	Resident Criteria
Housing Kitsap Rental Housing				
Heritage Apartments	R3	56	Multifamily	Section 8; families or people with disabilities
Orchard Bluff	R2	89	Mobile Home Park	Low income & head of household 55 or older
Port Orchard Vista	R4	42	Multifamily (senior)	Low income & 62 or older
Conifer Woods Apartments *(outside city limits)*	UGA	72	Multifamily	Low income
Viewmont East Apartments *(outside city limits)*	UGA	76	Multifamily	Section 8; families or people with disabilities
Madrona Manor *(outside city limits)*	UGA	40	Multifamily (senior)	Low income & head of household 55 or older
Housing Kitsap Homeownership Mutual Self-Help Housing				
Sherman Ridge	R2	27	Single-family	80% AMI or less
Riverstone	R3 & R2	39	Single-family	80% AMI or less
Multifamily Tax Exemption Sites (Private Rental Housing)				
The Overlook	R3	8 affordable (39 total)	Multifamily	MFTE Type I (12 year affordability)
Plisko Apartments	CMU	12 affordable (58 total)	Multifamily	MFTE Type I (12 year affordability)

Figure 28. Port Orchard affordable housing inventory (Housing Kitsap and City of Port Orchard)

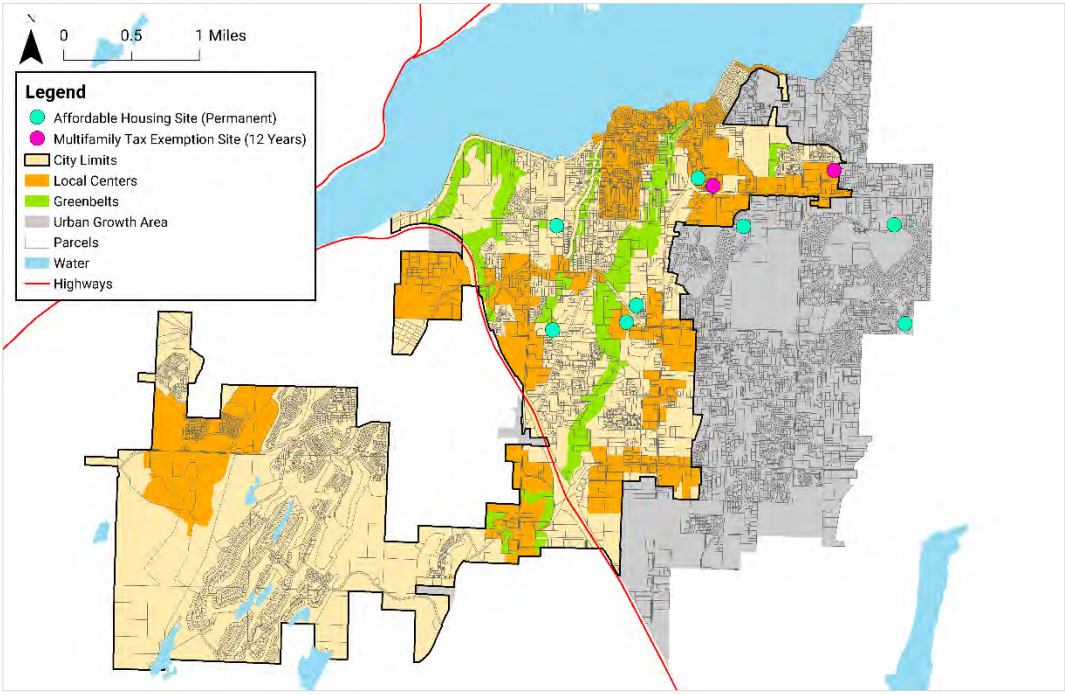


Figure 29. Affordable housing sites in Port Orchard

Public Land

Surplus public land is sometimes used for affordable housing. State law enacted in 2018 (RCW 39.33.015) allows local governments to transfer, lease, or dispose of surplus property at low or no cost to developers for affordable housing projects. Port Orchard has a large number of City-owned lands, and most are actively used for utility purposes or other public works, parks, and administrative functions. Some lands are also in greenbelts, wetlands, or ravines which are undevelopable.

Discussion with City staff yielded the following sites to consider in the Housing Action Plan. Other public lands (such as those owned by Kitsap County, the Port of Bremerton, and other agencies) could be reviewed in the future.

Map Key	Parcel #	Zoning	Area	Considerations
1	342401-4-016-2001 & 342401-4-015-2002	CMU	1.0 acres	Surplus property from the construction of the roundabout at Tremont/Pottery. Considerable size and has appropriate zoning for affordable housing.
2	252401-3-045-2009	R4	1.7 acres	Sloped site near the high school on Mitchell Avenue. Considerable size, ideally located, and has appropriate zoning for affordable housing.
3	4062-003-005-0006	R1	0.86	Vacant parcel owned by the water utility; it would need to be purchased from the enterprise fund. Considerable size and good location. Would likely need to be rezoned.
4	4650-009-006-0208	DMU	0.25 acres	640 Bay Street (see Project Spotlights). This site is planned for a housing project by a private developer.
5	4538-009-007-0007	UGA	0.21 acres	Vacant property just outside city limits in the Annapolis neighborhood.
6	4537-014-001-0004	UGA	0.15 acres	Vacant property just outside city limits in the Annapolis neighborhood.

Figure 30. Table of surplus or vacant public land to consider for housing opportunities. Source: City of Port Orchard

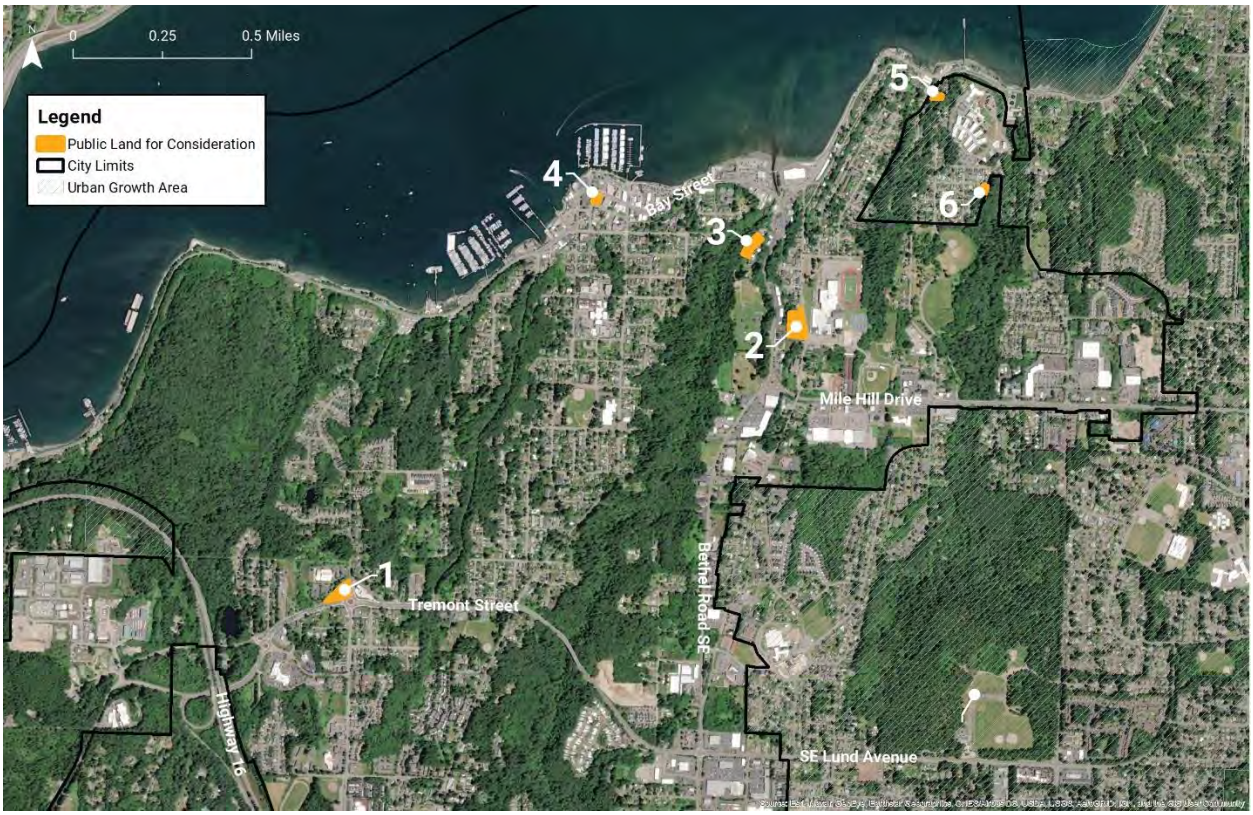


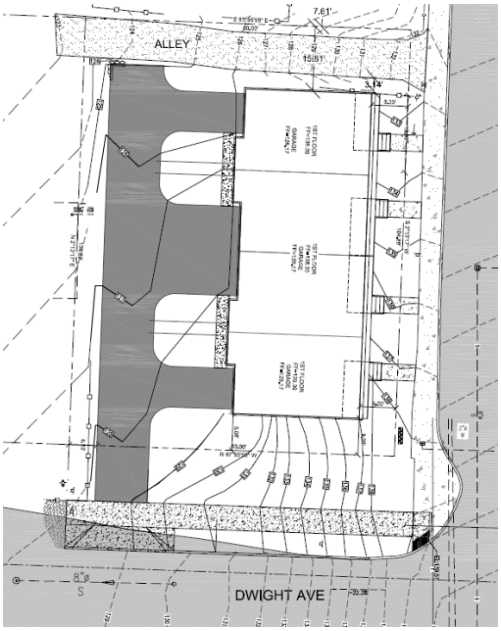
Figure 31. Map of surplus or vacant public land to consider for housing opportunities. Source: City of Port Orchard

Project Spotlights

This section provides detailed case studies of recent and ongoing housing developments in Port Orchard. It includes a cross-section of housing types. The spotlights are intended to provide insights on housing cost and design trends.

Valley Quadplex

This a recently completed fourplex development at the corner of Mitchell Avenue and Dwight Street. The site is zoned R3 and is within the Downtown Countywide Center. The site is on a block with single-family homes, to the south is a small multifamily complex, and to the east is South Kitsap High School.



Each of the four units is 3 bed/2.5 bath with about 1,450 square feet of living area. The lot is 8,276 square feet lot (0.19 acres), so the density is 21 units per acre.

The building is three-stories and steps down a slope, with one-car garages located in a daylight basement in the rear of each unit. The site incorporates a rear shared access drive connected to a private alley. Residential open space is provided on the east and south sides of the building.

Staff report the development fits the neighborhood well and it is a good example of infill. The developer suggested more friendly paperwork and inspection scheduling (the City just recently launched online scheduling and permitting). The fourplex was as intimidating and laborious to permit as an apartment building, possibly due to the required environmental review and the use of the commercial building code (as opposed to the residential building code).

The developer was interested in but unable to participate in the multifamily tax exemption (MFTE) program due to the local minimum threshold of 10 dwelling units (under updated state law a four-unit development is the minimum).

The land cost was about $93,000 and the total construction cost (before sales tax) was about $200 per square foot. The units are each renting for $2,300 to $2,500 per month.

Haven Apartments

This is a nearly complete garden apartment development in southern Port Orchard located off Pottery Avenue and within the Ruby Creek subarea. The site is zoned Commercial Mixed Use and is within the Ruby Creek Overlay District. This is a semi-rural area quickly transitioning into a low-density neighborhood center.

Adjacent to the site to the south is Ruby Creek and a single-family property, to the west is additional vacant land where the Haven Townhome project is planned by the same developer, to the north is a church and car dealership, and to the east is a wooded wetland.

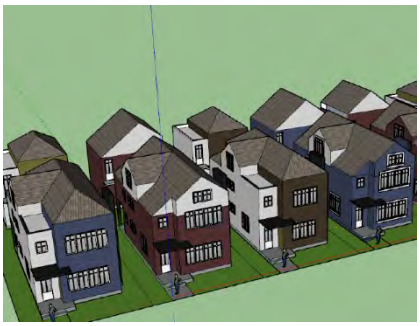
Only about half of the 18-acre parcel is developable due to the wetland and stream buffers; after subtracting those, the development's net density is about 24 units per acre. The development has 216 total units spread across 10 three-story buildings. About 36% of units are 1-bedrooms, 52% are 2-bedrooms, and 11% are 3-bedrooms. An average of 1.65 parking spaces per unit are provided.

This development offers more amenities than typical multifamily projects in Port Orchard. With units renting slightly above $2.00 per square foot (e.g. at least $2,100/month for a two-bedroom unit), the project will serve the mid-high end of the Port Orchard rental market. This is partly due to the developer's intentional positioning and the site amenities, including a 6,000 square feet clubhouse with a swimming pool.

Higher rents are also partly due to the high construction costs that need to be recouped. Hard construction costs, not including land, were about $170 per square foot. Impact fees totaled about $28,000 per unit ($6 million total). Through a development agreement, the developer is receiving sewer general facility fee credits to help offset the cost of a new $2.5 million sewer lift station constructed at the developer's expense. The developer is also receiving transportation and park impact fee credits for constructed improvements constructed and land dedication.

McCormick Village

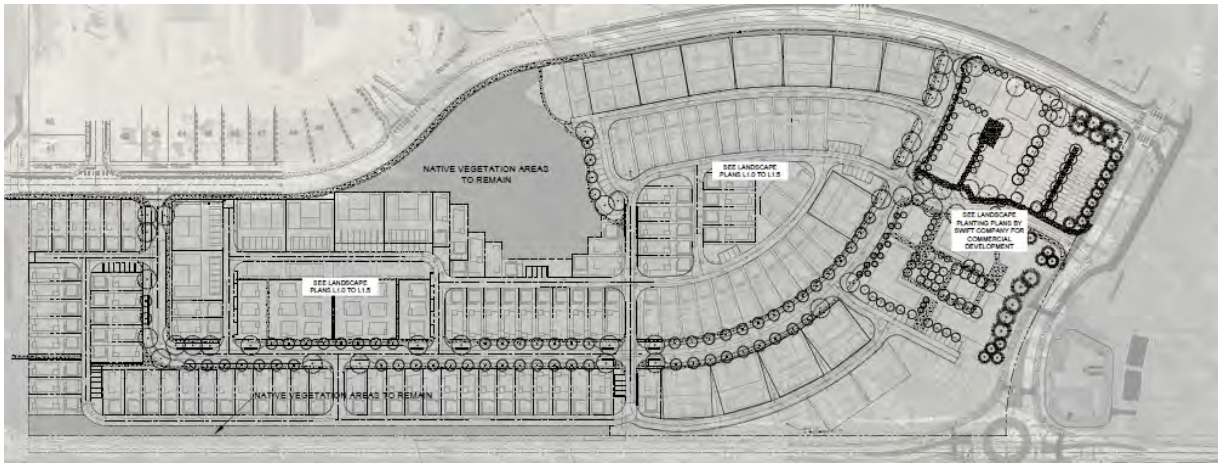
This is a planned mixed-use subdivision that is a small part of the large master planned McCormick Woods area, which has been under development since the 1980's and was annexed to Port Orchard in 2009. This particular site is about 23 acres and located on the north side of Clifton Road. The area is currently forested vacant land, with a large church to the southwest of the site, single-family subdivisions planned or under construction in the vicinity, and new public schools planned just west of the site.



The site has a mix of zoning: Residential 3, Neighborhood Mixed Use, and Commercial Mixed Use. It also has a special McCormick Village Overlay (MVOD) with subtle changes to the residential lot standards. The City developed the MVOD regulations to implement the McCormick Village Subarea Plan and worked closely with the landowner. The overlay provides some nuances such as additional allowed building types, revised minimum/maximum setbacks, and a prohibition on parking in the front of lots.

The residential preliminary plat shows up to 153 lots and all lots having alley access. A variety of housing types are illustrated, with the majority being 30-feet wide lots with detached homes and above-garage accessory dwelling units (uniquely, all such units will start as rentals). One version of the plat also shows paseo houses (similar to cottage housing, but with less common open space) and two-story forecourt apartment buildings (with 6-8 units per site). The total unit count is not yet known, but based on one drawing provided to the City, the site could have up to 320 units (including ADU's). The gross density (including ADU's and excluding the commercial area) would be about 20 units per acre.

The separately permitted commercial village is at the northeast corner of the site. This would be Port Orchard's first retail development west of State Route 16. Preliminary plans show pads for about 10 small commercial buildings served by surface parking and woonerf-style drive aisles.



The Ramsey

This is an ongoing mixed-use development in southern Port Orchard located at the northeast corner of Sedgwick Road and Ramsey Road. It is zoned Commercial Mixed Use, located within the Sedgwick-Bethel SR-16 center, and within the soon-to-be master planned Bethel Sedgwick Countywide Center. This is a semi-developed suburban area characterized by a mixture of small and large auto-oriented commercial uses.

This site is located uphill from the area's major intersection. Adjacent to the site to the east is a gas station, to the south are single-family homes and a home-based auto detailing shop, to the west is a fitness center, and to the north is vacant forested land.

The development is occurring on a relatively compact and sloping 2.5-acre site. It consists of three buildings, one of which is small drive-through coffee stand. The other two buildings are three stories and, combined, contain commercial space and 99 apartments on the upper floors. The gross density is about 40 units per acre.

The development is one of the few participating in the multifamily tax exemption (MFTE) program since the program was started in 2016. The developer is currently applying for a "Type 3" 8-year property tax exemption in exchange for incorporating structured parking and a shopfront design (commercial retail space).

This is the first large private development in Port Orchard to incorporate structured parking. The project is located far from Downtown Port Orchard, and yet the land value and market economics appear to be enabling this unconventional hybrid between suburban and urban land use intensity. While it is was assisted by the MFTE program, this project may be representative of an early transition in the Port Orchard real estate market where more dense, mixed-use development is becoming economically viable.

Downtown Mixed Use Projects

Several residential-commercial mixed-use projects have been proposed in Downtown Port Orchard in recent years. None have broken ground as of this writing, though one is now permitted. Conceptual designs show urban features like structured parking, storefronts, rooftop open space, and being at least four stories in height. This swell may be signaling a shift in the local real estate economy where compact infill and redevelopment is on the verge of being more feasible due to a combination of land values and market rents.

Project	Description
Bay Street Apartments (429 Bay Street) 	This project has been permitted on the site of the old Lighthouse Restaurant and will develop 39 units and 500 square feet of commercial on four levels. It is located on a 1.35 acre waterfront site. The project will have a single level of structured parking on the ground floor. The developer requested a reduction of 66 parking spaces to 41 spaces. The residential density is 29 units per acre.
Heronsview (100 Bethel Avenue) 	The conceptual plans have a total of 106 units on four levels; 55% of units are studios, 23% are 1-bedrooms, 15% are 2-bedrooms, and 7% are live/work units. Proposed on a 1.08 acre site, the development's residential density would be 98 units per acre. About 6,000 square feet of commercial space are shown in conceptual drawings. At least 143 parking spaces would be required if no on-street parking is available. Parking would be provided in a two-level garage, with the roof used as a residential open space.
1626-1636 Bay Street 	This concept includes 71 units on five levels, including two levels of structured parking. Proposed on a 0.51 acre site, the residential density would be 139 units per acre. The site and development concept is currently for sale for about $6 million.
640 Bay Street 	This a City-owned property that was intended to be sold to a private developer, though the project has been on hold for at least four years. This early concept proposed to include 44 units on five levels and about 12,000 square feet of commercial space. Parking is proposed off-site. It would include a rooftop garden and a vacation of Fredrick Street which would be developed as a landscaped public space and hill climb. The potential residential density is 159 units per acre.

Section 3 – Cost Trends

Housing Cost Trends

Housing costs in Port Orchard have been increasing steadily over the last decade, for both renters and homeowners, as shown in Figure 32 below. As of mid-2022, Zillow reports an average home value of $511,600 and an average rent of $1,638 per unit in the city, a yearly increase of five percent for ownership units and nine percent for rentals over the past decade. Notably, both ownership and rental housing costs have increased more rapidly since the onset of the COVID-19 pandemic, a pattern seen across the greater Puget Sound region, and particularly in smaller and moderate-sized jurisdictions when compared with larger cities such as Seattle.

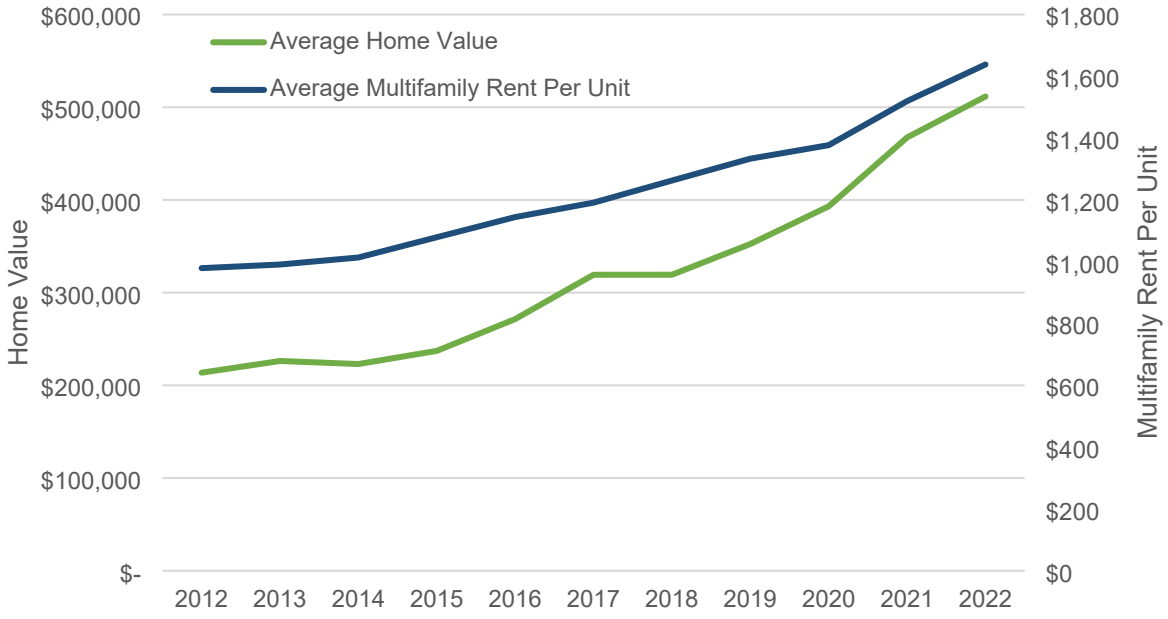


Figure 32. Housing Costs in Port Orchard, 2012-2022. Source: Zillow, CoStar.

Figure 33 shows the change in Port Orchard's housing prices compared with the change in incomes from 2010-2020. After a drop in home prices between 2010 and 2012, incomes and housing prices increased similarly between 2012 and 2015, after which home prices began to increase significantly faster than incomes. Rental prices, which had been stable from 2013-2017, also began a steep increase in 2017, also outpacing incomes. The gap has continued to worsen over the past few years, with a 28 percent increase in rents and 56 percent increase in home values from 2015-2020, compared to only a 15 percent increase in incomes over the same period. This shows that housing has become more difficult to afford for the average Port Orchard resident in recent years, a trend also seen across the country.

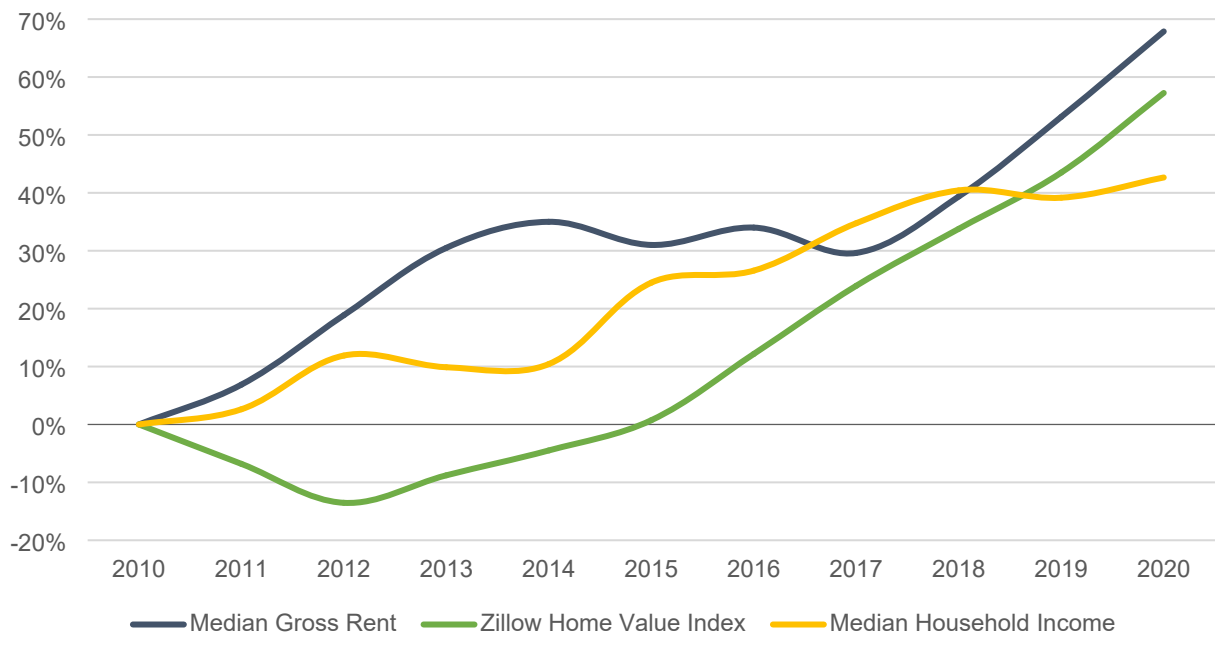


Figure 33. Change in Home Prices, Rents, and Incomes in Port Orchard, 2010-2020. Source: Zillow, American Community Survey 2020 5-Year Estimates, Table S2503, DP04, Leland Consulting Group

Figure 34 shows the relationship between what the typical Port Orchard household earns in a year and the amount they would need to earn to afford the typical home in the city, based on 2020 census and home price data. The income needed to afford the median home in the city is about $50,585 more than the median household currently earns, or to put it another way, the typical Port Orchard household could afford a home worth about $303,012, but the typical home in the city in 2020 was worth 1.5 times as much, $468,702.

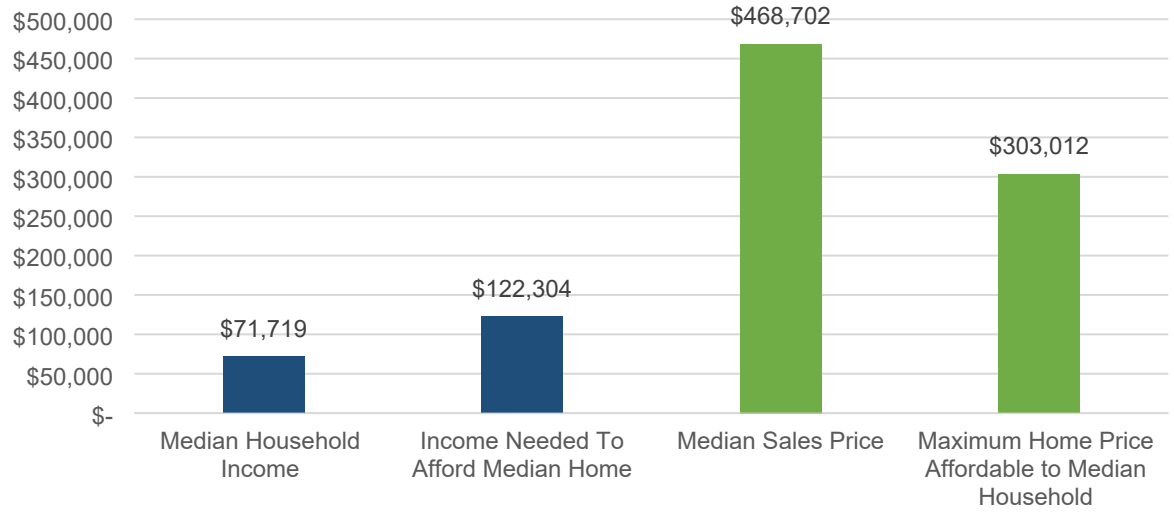


Figure 34. Ownership Housing Affordability in Port Orchard. Source: Zillow, Freddie Mac, 2020 American Community Survey 5-Year Estimates, Leland Consulting Group

A housing affordability chart illustrating home prices which would be affordable to a variety of income levels is shown below in Figure 35. Port Orchard's median incomes and sales prices are both shown. This data illustrates the degree to which ownership housing has become out of reach for many Port Orchard residents, even those earning more than the city's median household income.

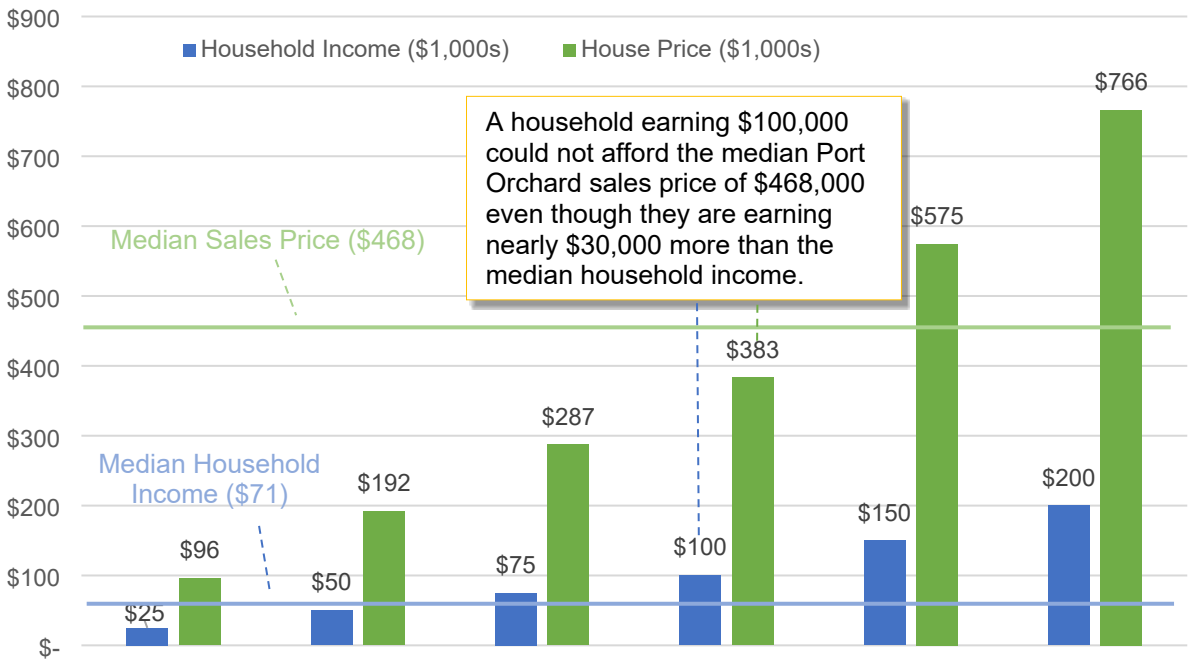


Figure 35. Housing Prices Affordable to Various Incomes with Port Orchard Median Income and Sales Price, 2021. Source: Zillow, Freddie Mac, 2020 American Community Survey 5-Year Estimates, Leland Consulting Group

Construction Costs

The cost of construction for all housing types has been increasing for decades, although the past few years have seen unprecedented increases. These costs have a major impact on development feasibility. Higher development costs ultimately drive up the sales price of finished housing and can lead to reduced housing production when the market cannot support those higher housing prices.

The following chart provides construction price indexes[5] for multifamily housing units under construction, single-family houses sold, and for single-family houses under construction. Recent data from the U.S. Census Bureau shows construction costs went up by 17.5% year-over-year from 2020 to 2021, the largest spike in this data from year to year since 1970. Costs in 2021 were also more than 23% higher than pre-pandemic 2019. Preliminary data for 2022 indicates an even greater jump in construction costs, largely due to supply chain issues, inflation, and labor shortages.

[5] The houses sold index incorporates the value of the land and is available quarterly at the national level and annually by region. The indexes for houses under construction are available monthly at the national level. The indexes are based on data from the Survey of Construction (SOC).

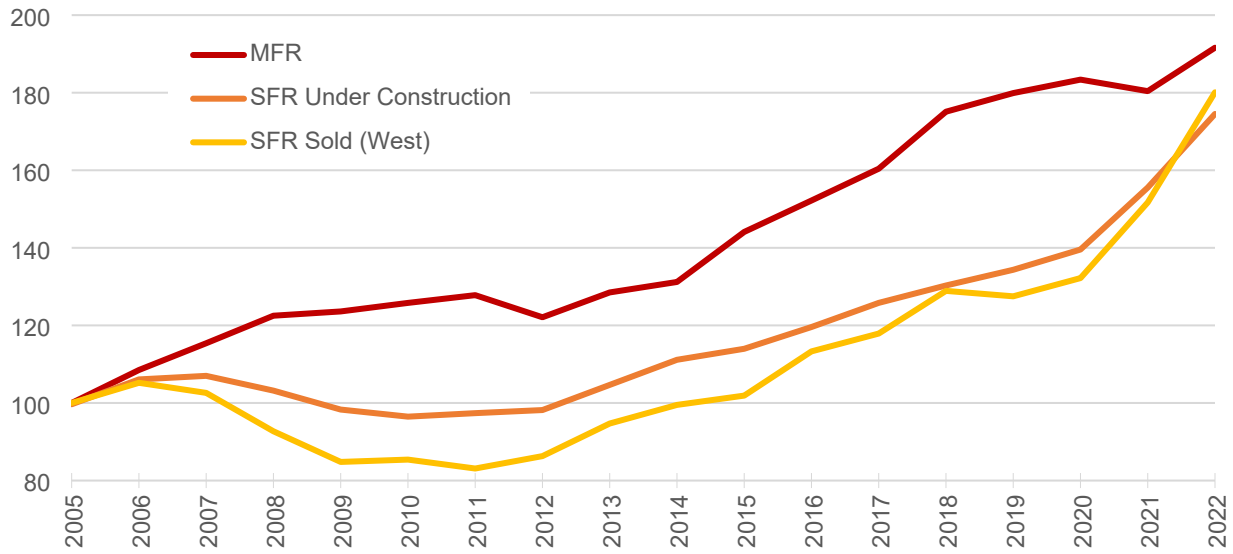


Figure 36. Construction Price Indexes. Source: U.S. Census Bureau Construction Price Indexes

Developers interviewed by the project team in summer 2022 indicated concerns over construction costs in the region. They described as many as ten material cost adjustments per year, compared to one to two price changes per year in the past. Developers generally agreed that lumber prices were likely to begin decreasing and stabilize in the coming years, though they expressed less optimism about short-term decreases in other material costs.

Impact Fees

Impact fees are a one-time fee required by local governments for new development to help pay for a portion of the expected costs of providing increased public services. The topic arose in stakeholder interviews and so an analysis compared Port Orchard's impact fees to other Kitsap County jurisdictions. Determining impact fee by building type (housing type) also provides information about how the fees are affecting the variety of housing being built.

The table below a table shows total impact fees (combining fees for roads, parks, and schools) by housing type. Roads impact fee schedules typically have the most detailed housing types and thus was used as the basis for housing type comparison. The breakdown of impact fees by type of impact fee can be seen in Appendix A. Port Orchard has a fee for all three categories, which is not the case for some of the other jurisdictions. Bremerton currently does not collect impact fees but may start collecting them in the near future.

The comparison finds that Port Orchard does have some of the highest impact fees in Kitsap County, but these fees may be closer to the median when making wider regional comparisons. For example, Sammamish impact fees total at least $14,000 per unit (as of 2019). Judging by the large volume of permitted developments in Port Orchard, the fees are having little negative effect on total development.

However, the fees may be a minor factor for the variety of housing products being produced. Duplexes, triplexes, fourplexes, townhouses, and ADU's have notably high fees for the lower resource impacts and land area they require compared to single-family homes. This may partially be because the school and park impact fees do not provide a high level of distinction among building types due to those fees being based more on persons per household.

	Single-Family	Duplex	Triplex & Fourplex	Townhouse	Multifamily 1-2 floors	Multifamily 3+ floors	Multifamily Mixed Use	ADU
Port Orchard	$10,856.52	$9,156.34	$6,835.28 – $9,096.34	$9,156.34 – 10,347.34	$6,820.28	$6,189.29	$5,768.63	$4,677.97 - $6,150.28
Kitsap County	$6,428.60	$3,496.75	$3,496.75	$3,766.74	$3,496.75	$2,956.77	$2,821.78	$3,766.74
Bremerton	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Poulsbo	$7,969.18	$6,163.29	$6,163.29	$6,163.29	$6,163.29	$5,102.97	$5,102.97	$5,323.48
Bainbridge Island	$1,811.82	$1,123.33	$1,123.33	$1,413.22	$1,123.33	$1,123.33	$1,123.33	$1,123.33
Gig Harbor	$11,350.00	$9,764.00	$9,764.00	$9,764.00	$9,764.00	$9,764.00	$9,764.00	$11,715.00

Figure 37. Impact Fees per Unit by Housing Type. Source: Kitsap County and Municipalities of Kitsap County

Some cities exempt ADU's from impact fees since they are not a primary unit and because the fees can be insurmountable for low- and moderate-income homeowners. Also, under RCW 82.02.060, cities may reduce impact fees by up 80% for affordable housing. Under POMC 20.182, the City has not adopted any impact fee exemptions or reductions, though the idea is supported by Comprehensive Plan policy HS-6.

Section 4 – Housing and Service Needs

This section offers information about the needs for households in the City of Port Orchard.

Market Rate Housing

The chart below shows projected demand for new housing units through 2044 by income in Port Orchard based on the Kitsap County target of 5,291 new housing units in Port Orchard by 2044.[6] The allocation of housing units by income is shown using three projection methodologies. The Washington State Department of Commerce (Commerce) has recently released a draft calculator which uses two methodologies to calculate future housing needs by income by county, city, and UGA. Method "A" shown below allocates future housing needs by projected household income (as a share of AMI) evenly across all municipalities in Kitsap County. This shows a particularly high 2044 need of over 1,400 units affordable to the lowest-income households earning less than 30% AMI – which would need to be provided by subsidized affordable units. Commerce Method "B" allocates housing across all jurisdictions in the County after taking into account their *existing* housing unit breakdown by income level. Because Port Orchard already provides some subsidized units (and a larger share than some other Kitsap County municipalities), this method shows a need for fewer units for households earning under 30 percent AMI and between 30 and 50 percent AMI, but allocates more units for higher-income households earning more than 120 percent AMI.

The third methodology shown is Leland Consulting Group's model which allocates future housing units based on Port Orchard's current income breakdown. This methodology shows a strong housing need for the lowest-income residents of the City but also reflects the need for "workforce" housing for the significant share of Port Orchard's population earning between 50 and 100 percent of the AMI.

Overall, these three methodologies show that the largest housing needs by income in Port Orchard in the next two decades will be for the lowest-income households, which can only be met through regulated affordable (i.e. subsidized) housing, to a lesser degree for "workforce" housing for residents earning less than 100% AMI, which can be provided through a variety of channels including subsidized units, vouchers, other incentive programs such as MFTE, and filtering of existing units as new housing stock is built. Finally, there will remain a demand for between 1,200 and 1,800 market rate housing units targeting households earning more than 120 percent AMI over the next 20 years.

Although the Commerce methodologies are still in draft form, all three sets of results are presented here to demonstrate the various calculations and considerations underlying future housing needs and targets regionally. The Kitsap County Regional Coordinating Council will decide on a final target number of new units by income level for all jurisdictions in the County in 2023, and that final target breakdown will be integrated into the 2024-2044 Port Orchard Comprehensive Plan.

[6] This housing unit target and the Kitsap County population target for Port Orchard (10,500 new residents by 2044) would yield an average household size of 1.98 people per household. This is significantly less than the current Port Orchard household size of 2.44 people per household. This discrepancy may need to be addressed by Commerce.

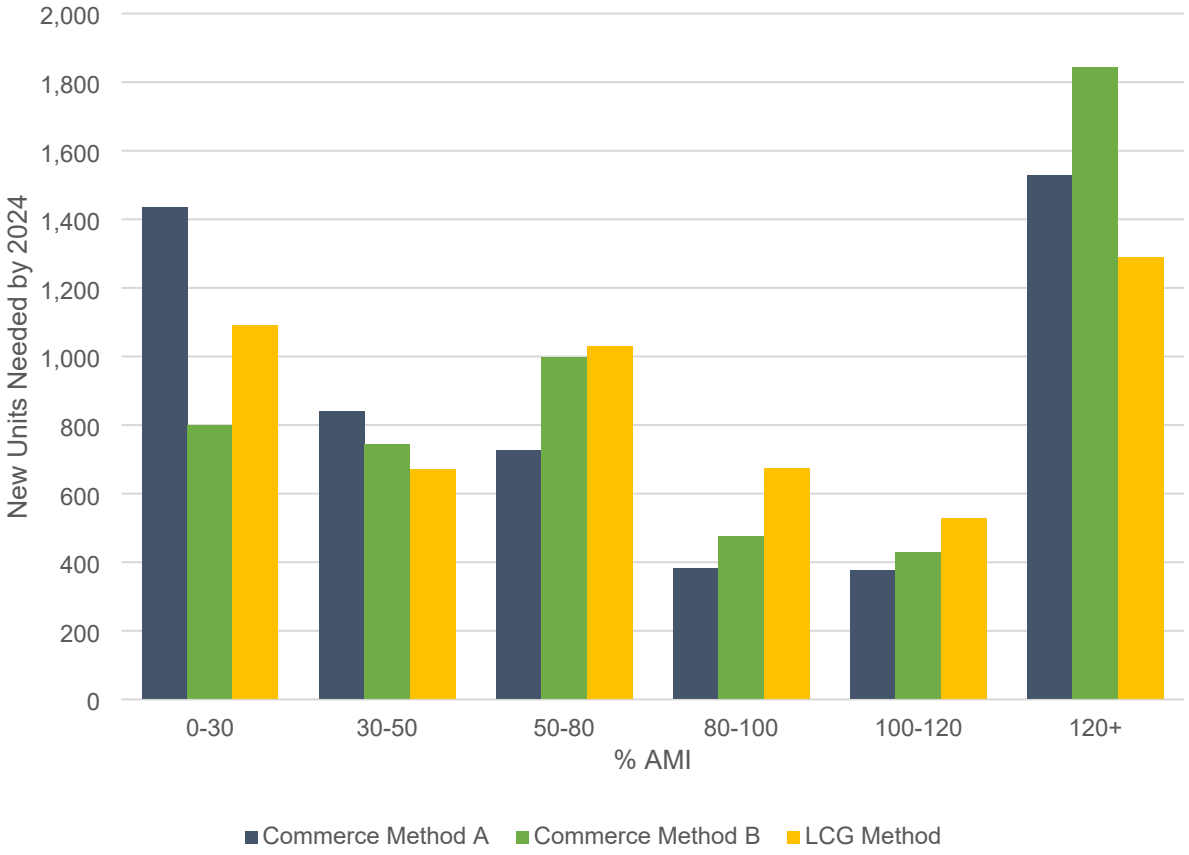


Figure 38. Housing Demand Projections for Port Orchard, 2022-2044 Source: Washington Department of Commerce Draft Projected Housing Needs Methodologies, Leland Consulting Group

Low-Income and Cost-Burdened Households

HUD sets income limits that determine eligibility for assisted housing programs.[7] The 2022 Area Median Income (AMI) for the Bremerton-Silverdale Metropolitan Statistical Area (MSA) is $102,500. The following table outlines the 2022 Bremerton-Silverdale MSA HUD income limits for low, very low, and extremely low-income households making 80 percent, 50 percent, and 30 percent of the Area Median Income (AMI), respectively.

Household Size	1	2	3	4	5	6	7	8
Extremely Low (30%)	21,600	24,700	27,800	30,850	33,350	37,190	41,910	46,630
Very Low Income (50%)	36,050	41,200	46,350	51,450	55,600	59,700	63,800	67,950
Low Income (80%)	57,650	65,850	74,100	82,300	88,900	95,500	102,100	108,650

Figure 39. HUD FY 2022 Income Limits ($), Bremerton-Silverdale, WA MSA. Source: HUD

In addition to income, HUD uses a measurement of "cost burden" to further determine which subset of a community's residents are most in need of housing support or most at risk of displacement or housing hardship.

A household is considered to be "cost-burdened" if they are spending more than 30% of monthly income on housing costs (including rent/mortgage and utilities).

A "severely cost-burdened" household spends more than 50% of their monthly income on housing costs.

Figure 40 shows a breakdown of Port Orchard's households by tenure and cost burden status. Overall, about 35 percent of Port Orchard's households are considered cost-burdened. Half of all renter-occupied households are considered cost-burdened, while one quarter of owner-occupied households are considered cost-burdened.

As is the case nationwide, renters are significantly more at risk of economic hardship and displacement than homeowners. With rental rates increasing dramatically in recent years and income growth failing to keep up, it appears that renters are suffering the consequences in terms of cost burden. There is a clear need for more rental housing that is affordable to all income levels.

[7] Including the Public Housing, Section 8 project-based, Section 8 Housing Choice Voucher, Section 202 housing for the elderly, and Section 811 housing for persons with disabilities programs HUD develops income limits based on median family income estimates and fair market rent area definitions.

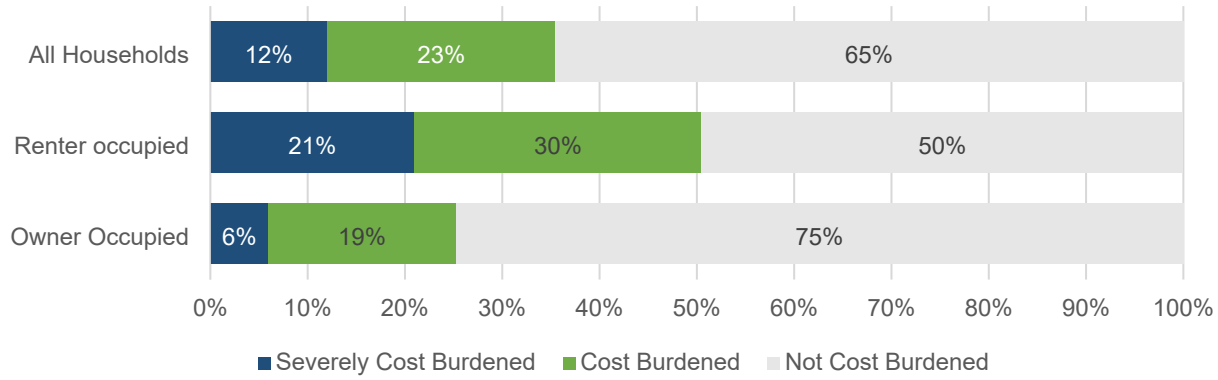


Figure 40. Household Tenure by Cost Burden in the City of Port Orchard, 2020. Source: HUD CHAS 2015-2019.

The following chart shows cost burden status by household income level for households earning less than the area median income (AMI). The lowest-income households earning 30 percent AMI or less have by far the highest cost burden, with 615 of the 715 households in this income bracket spending more than 30 percent of their income on housing costs, and 495 households, or 70 percent of households in the income bracket, spending more than half their income on housing costs. Similarly, 75 percent of households earning between 30 and 50 percent of the AMI also spend more than a third of their income on housing costs. However, there are still a substantial number of households earning between 30 and 80 percent AMI which are also housing cost-burdened, as well as a quarter of households earning between 80 and 100 percent AMI.

This data shows a need for subsidized affordable housing at various income levels, but particularly for households earning less than 50 percent AMI.

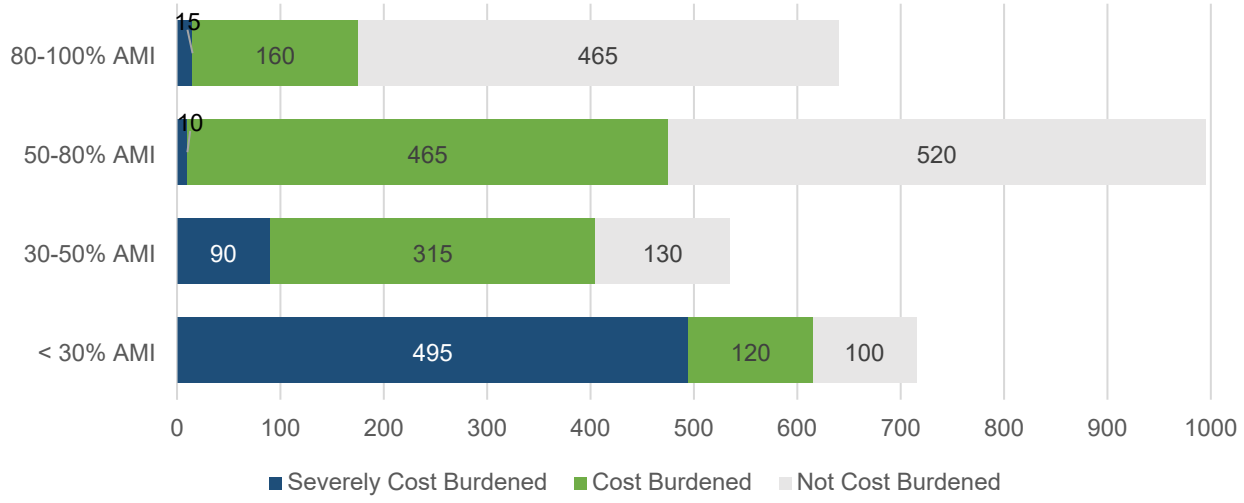


Figure 41. Cost Burden Status by Household Income Level in Port Orchard. Source: HUD CHAS 2015-2019.

Special Needs Housing

Figure 42 shows the number of households in Port Orchard with a disabled resident by disability status and income. Most households with a disabled resident earn more than 80 percent of AMI, though particularly for residents with an ambulatory limitation (generally meaning they are unable to walk), there is a significant number of households earning less than 30 percent AMI. In addition to ambulatory limitations, hearing or vision impairments are the most common disability reported in Port Orchard households.

Disability Status (any household member)	Extremely Low Income (≤ 30% AMI)	Very Low Income (30-50% AMI)	Low Income (50-80% AMI)	Moderate Income or Higher (>80% AMI)	Total Households
Cognitive limitation	90	80	70	225	**460**
Hearing or vision impairment	90	115	105	445	**755**
Self-care/ind. living limitation	60	185	125	215	**585**
Ambulatory limitation	215	115	65	310	**710**

Figure 42. Households by Disability Status and Income in Port Orchard. Source: HUD CHAS 2015-2019

People Facing Homelessness

Kitsap County conducts a Point in Time Count of people experiencing homelessness countywide each year, typically in January. In 2022, the count was conducted in February instead. The count encompasses both sheltered and unsheltered people and is conducted during one 24-hour period each year. Therefore, the number is generally considered to be an undercount of the true population experiencing homelessness. In February 2022, 563 individuals were experiencing homelessness countywide, of which 136 were in transitional housing, 244 in emergency shelters, and 183 unsheltered. This was an 8 percent decrease from 2020[8] though a 7 percent increase from the previous four-year average. Of the 183 unsheltered residents surveyed, 23 percent, or 42 people, were in Port Orchard. Countywide, 67 percent of those surveyed reported becoming homeless due to health or mental health issues, 58 percent due to job loss, 40 percent due to loss of housing, 35 percent due to family conflict, and 25 percent due to substance use.[9]

A 2020 report by the U.S. Government Accountability Office finds that every $100 increase in median rent is associated with a nine percent increase in the estimated homelessness population, even after accounting for demographic and economic characteristics. This formula is considered at a national level but may be helpful context for the current trend in local rent increases.

[8] The count of unsheltered individuals was not completed in 2021 due to the COVID-19 pandemic.
[9] Kitsap County Point In Time Count. https://www.kitsapgov.com/hs/Pages/HH-Point-in-Time.aspx

Transit

Under definitions of the Washington State Department of Transportation, Port Orchard mostly has Level 4 transit service.[10] Higher levels of service (Levels 1-3) are considered to be more attractive to the general population (e.g. choice riders), more conducive to reducing solo driving, and more able justify reduced parking (and therefore reduced housing costs) at residential developments. The lack of regular bus service on Sundays and between Port Orchard and Bremerton is particularly notable.

Kitsap Transit operates public bus and passenger ferry service in Port Orchard. Two ferry docks have service to the Bremerton ferry terminal where riders can catch auto ferries or fast passenger ferries to Seattle. There are six fixed-route bus lines operating within the central and eastern part of the city, generally running at frequencies of 30 to 60 minutes. Buses stop operating in the early evening. On Saturdays, buses run between 10am and 5pm.

Western Port Orchard area is a served by an on-demand, weekday-only service called SK Ride which connects residents to some regular bus routes. Other services include worker/driver buses for Navy facility commuters, door-to-door Access buses for seniors and people with disabilities (runs 8am to 4pm on weekdays and Sundays), and vanpools/carpools.

Figure 43. Kitsap Transit fixed-route bus lines in the Port Orchard area.

[10] "Frequent Transit Service Study." December 2022. Washington State Department of Transportation. https://engage.wsdot.wa.gov/frequent-transit-service-study/

Section 5 – Housing Funding and Monetary Tools

Existing Funding

Port Orchard does not have currently any funding streams directly funding affordable housing development or preservation.

In January 2022, Kitsap County imposed a 0.1% affordable housing sales tax as allowed under RCW 82.14.530. The revenue must be used for constructing or maintaining affordable housing. It is expected to generate about $5 million per year.[11] This sales tax option would have been available to Port Orchard (generating about $850,000 per year per .1% , based on 2021 revenue), but state law stipulates that after a county adopts the tax cities in the county may no longer implement their own tax.[12] Poulsbo and Bainbridge Island implemented affordable housing sales taxes before the county did and so their taxes remain effective in addition the county's.

Other Funding Options

The Municipal Research Service Center provides a list of other funding sources for Washington cities and affordable housing developers. These include:

- Property tax levy of up to $0.50 per $1,000 assessed valuation for up to 10 years to fund very low-income housing (RCW 84.52.105)
- Real estate excise tax of up to 0.25% to fund affordable housing through 2026 (RCW 82.46.035)
- Mandatory inclusionary zoning requirements that require residential developments to either provide affordable housing on-site or to pay into a housing fund for city governments to fund housing elsewhere (generally this tool must be paired with large upzones to avoid regulatory takings claims)
- Lodging taxes, which may be used to fund a variety of government programs (as noted under the short-term rental discussion, Port Orchard already has a lodging tax)
- Loans and grants from the Washington State Housing Trust Fund (administered by the Washington State Department of Commerce)
- State law under RCW 43.185C.080 allows cities to receive grants from the Washington homeless housing account. A prerequisite is adoption of a local homeless housing plan or adopting by reference a county homeless housing plan that has a specific strategy for the city. Grant value is tied to the real estate document recording fees generated within the local jurisdiction.
- Low-income housing tax credits which investors in housing projects can apply to (administered by the Washington State Housing Finance Commission)

[11] "Commissioners vote to impose 1/10th of 1% sales tax for affordable housing." January 2022. Kitsap Daily News. https://www.kitsapdailynews.com/news/commissioners-vote-to-impose-1-10th-of-1-sales-tax-for-affordable-housing/
[12] Funding Local Affordable Housing Efforts. August 2022. Municipal Research Service Center. https://mrsc.org/Home/Stay-Informed/MRSC-Insight/August-2022/Options-for-Funding-Local-Affordable-Housing-Effor.aspx

Multifamily Tax Exemption

Overview

The multifamily tax exemption (MFTE) is a program authorized by the state, starting in 1995 (RCW 84.14). Cities can grant one or more of the following programs for new buildings or existing buildings:

- 8-year exemption for any type of multifamily development
- 12-year exemption for multifamily developments that reserve at least 20 percent of units for low- and moderate-income households
- A 20-year exemption for multifamily developments that reserve at least 25 percent of units for sale as permanently affordable to households earning 80% AMI or less, and the development must be sponsored by a non-profit or governmental entity (this option was added by the Legislature in 2021[13]). Port Orchard meets the threshold of 15,000 population to unlock this option.

Land, existing site improvements, and non-residential improvements are not exempt and are subject to normal property taxes. At the local government's discretion, the exemption's basis may be limited to the value of affordable units or other criteria. The local government has latitude in many other aspects. It can require certain public benefits, change what types of development apply, and can map specific areas where the exemption is available. Cities can also set lower maximum rent prices than the statute allows.

MFTE programs require ongoing monitoring, especially for any buildings with affordable units, to ensure that rental rates and resident incomes are meeting the criteria.

A 2019 statewide audit found that local MFTE programs are frequently used to improve the financial performance of private developments but it is unclear if they result in a net increase in housing production. For 2018 the audit found average annual local and state property tax savings of $10,651 per affordable unit and $2,096 per market-rate unit, with wide variations depending on the location, land value, and local property tax rates. Seattle has the most MFTE units in the state and likely skews the average tax savings high. Participating properties in Bremerton see average annual property tax savings of $6,123 per affordable unit $1,413 per market-rate unit (data was not available for Port Orchard).

Port Orchard MFTE Review

Port Orchard has had an MFTE program in place since 2016, which is codified under Chapter 3.48 POMC. It goes beyond the basic framework of state law and provides three types of exemptions.

The "Type 1" program is a 12-year tax exemption available to properties zoned for multifamily or mixed-use development within one-half mile of a transit route or ferry terminal. At least 20 percent of units must be rented at least 10 percent below fair market rent to tenants with the following incomes:

[13] "Overview of 2021 Changes to the Multifamily Housing Tax Exemption Program." Washington State Department of Commerce. https://deptofcommerce.box.com/shared/static/7k5p88yv41m8ot882gbtzafwzlofkf05.pdf

- At or below 40 percent of median family income, for housing units in congregate residences or small efficiency dwelling units
- At or below 65 percent of median family income for one-bedroom units
- At or below 75 percent of median family income for two-bedroom units
- At or below 80 percent of median family income for three-bedroom and larger units.

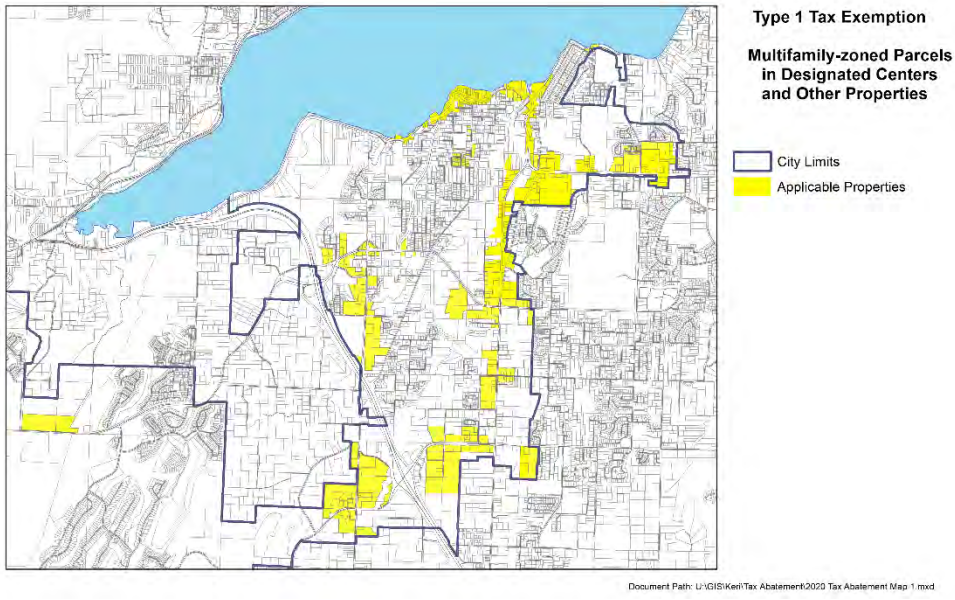


Figure 44. Parcels eligible for the Type 1 MFTE program

The “Type 2” program is an 8-year tax exemption available to properties within local centers of importance (as identified in the Comprehensive Plan) and which are encouraged to redevelop and may require rezoning. Properties must meet at least one of these criteria:

- Have abandoned buildings (vacant or unused for more than two years)
- Underutilized buildings (50 percent or more vacancy for more than two years)
- An assessed building value to land ratio of two-to-one or more.

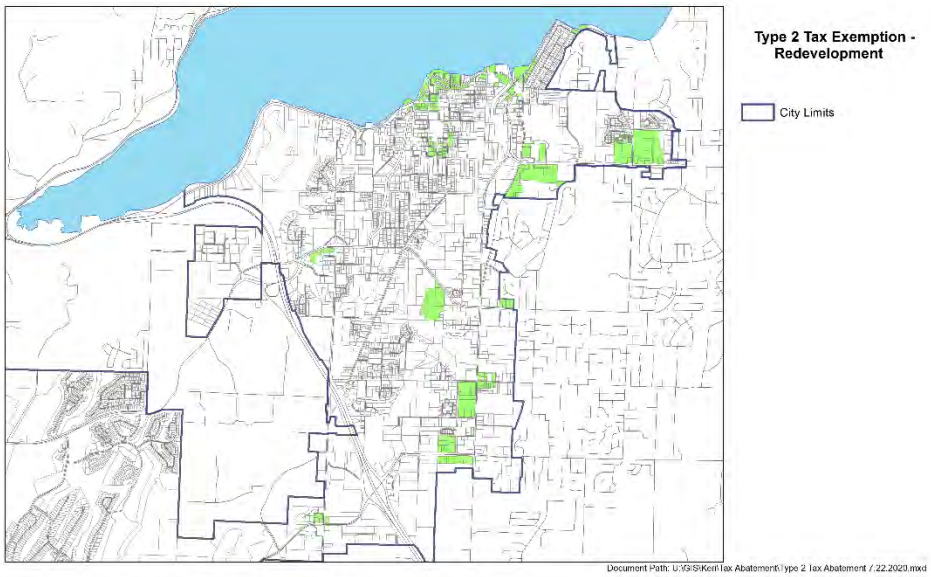


Figure 45. Parcels eligible for the Type 2 MFTE program

The “Type 3” program is an 8-year exemption available to properties within local centers of importance (as identified in the Comprehensive Plan) and zoned for multifamily or mixed-use development. Developments must meet one of these standards:

1. At least 50 percent of required parking must be structured and achieve at least 50 units per net developable acre
2. Construct mixed-use shopfront building(s) containing non-residential square footage equal to at least 40 percent of all building footprints
3. Purchase one additional story of building height for one or more buildings through the city’s transfer of development rights program

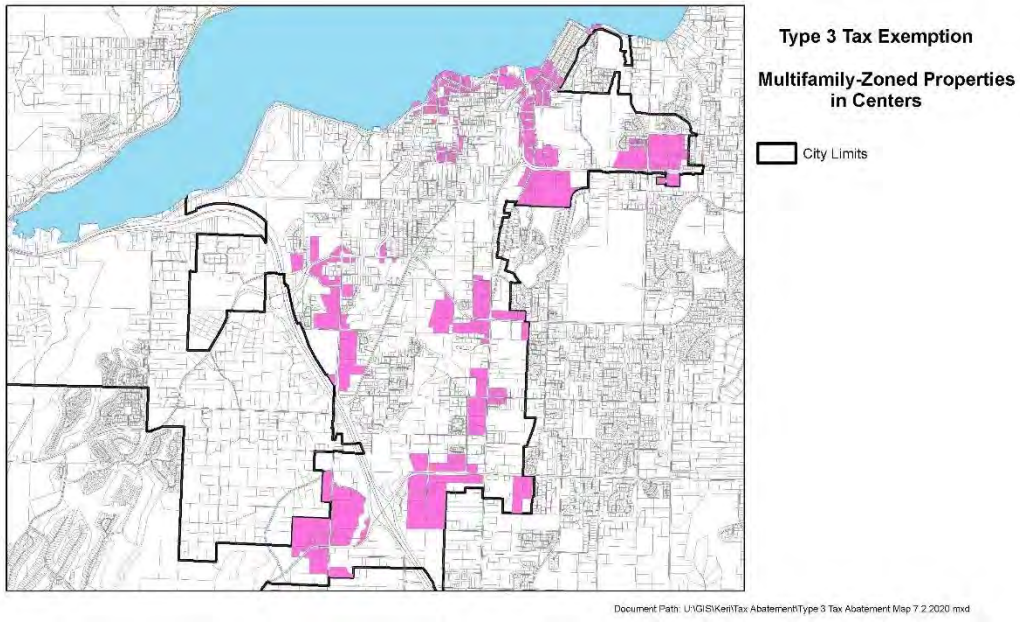


Figure 46. Parcels eligible for the Type 3 MFTE program

The following table shows how many developments and dwelling units are utilizing Port Orchard's MFTE program since inception. Numbers in parenthesis are MFTE applications currently in progress (as of December 2022).

MFTE Program	Number of Participating Developments	Total Units	Affordable Units (Type 1)
Type 1 (12-year, affordable)	2 (+2)	95 (+220)	20 (+45)
Type 2 (8-year, redevelopment)	1 (+2)	138 (+207)	--
Type 3 (8-year, urban mixed-use)	1	99	--

Figure 47. MFTE program statistics. Source: City of Port Orchard

Observations:

- Port Orchard's MFTE program is structured differently than most Washington cities, with two versions of the 8-year program
- In the Type 3 program, options for combining required features could be clarified, as was done with the one participating project which used less structured parking and shopfront design than required individually but combined use of both features to qualify.
- In the Type 1 program, the minimum development size of 10 units reduces the number of small projects that can participate. State law sets the minimum development size at four units.
- In the Type 1 program, residents have their incomes verified only in order to determine what size of unit they can occupy. In other words, individualized rent caps are set for physical units and not customized for each household's size and characteristics. This is a different approach than most cities, but appears to fit within the state law framework.
- In the Type 1 program, the depth of affordability (10% below market rate) may be imbalanced with the property tax savings.
- Updates to RCW 84.14 allow median family income to now be based on the city or metropolitan statistical area of the project (rather than just the county).

As noted in Section 3, the past few years have seen unprecedented increases in construction costs which have a major impact on development feasibility. There is interest among City officials and stakeholders to revisit the MFTE program and make adjustments to improve economic feasibility and administration.

The City has the legal option to seek help with monitoring the MFTE program and freeing up staff resources. Housing Kitsap, for example, already has systems in place to administer income-based housing.

Section 6 – Housing Policies

Comprehensive Plan Goals and Policies

This section focuses on a handful of key policies in the Housing Element. Full comments are available in Appendix B.

Goal/ Policy	Text	Comment
HS-2	Support the development of a variety of housing types, including apartments, townhomes, mixed-use (residential and other uses) and live-work development, small-lot and zero lot line single-family homes, and manufactured homes, as well as traditional single-family homes, through innovative planning, efficient and effective administration of land and building codes, and, where available, applicable financial assistance.	The City has a good foundation of supportive zoning standards to support a variety of housing types, though as noted in Section 6 some improvements could be made or more incentives added. The MVOD zone is an example of innovative planning. Financial assistance largely is implemented through the MFTE program, though other options may need to be explored to support the low-income population.
HS-6	Consider reducing permitting fees for development which provide affordable housing as defined by the Washington Administrative Code (WAC) section 200-120- 020.	No waivers/reductions for impact fees and general facilities charges are in place.
HS-9	Implement minimum residential density requirements in centers of local importance in order to increase land and infrastructure efficiency.	The City does not have minimum density standards in any zone.
HS-14	Implement zoning and development regulations which encourage infill housing on empty and redevelopable parcels.	This type of development does not appear to be happening in large numbers, with most housing being built on greenfields on the edge of the city. More incentives for infill and redevelopment in local centers should be explored in the HAP.

Development Regulations

Port Orchard's zoning standards are codified under Title 20 POMC and primarily exist in Chapters 20.30 through 20.58. The key standards reviewed here are the permitted land uses and dimensional standards. Other standards provide supplemental residential use and design standards for most housing types. Multifamily design standards are located under Chapter 20.127 POMC.

In most cities, this consists of a simple list or table organized by zone. In Port Orchard, understanding the permitted uses is complex because there are two permission standards: One code section describes "building types", and the other describes "residential uses", and these are located in separate chapters.

The key development regulations on housing are summarized in the tables below. Following the tables is a set of observations.

Residential Zones: Allowed Residential Development

In the first table, P means permitted and a blank cell means the building type is not permitted in the zone.

Note: The R5 zone is not currently mapped, and so was not evaluated closely.

Building Types (POMC 20.32.015)						
Building Type	Residential Zones					
	R1	R2	R3	R4	R5	R6
Detached House	P	P	P			P
Backyard Cottage	P	P	P			P
Cottage Court	P	P	P			P
Duplex: Side-by-Side		P	P			P
Duplex: Back-to-Back		P	P			P
Attached House		P	P			
Fourplex			P	P	P	
Townhouse		P	P	P	P	
Apartment			P	P	P	
Live-Work						
Manufactured or Mobile Home Park						
Accessory Building	P	P	P	P	P	P

Figure 48. Excerpt of Port Orchard Municipal Code table 20.32.015

In the second table are selected permitted uses in residential zones. These are reorganized from the actual code and have subheadings added. P means permitted, C means conditionally permitted (subject to extra review and public comment), and a blank cell means the housing type is not permitted in the zone.

Note: The R5 zone is not currently mapped, and so was not evaluated closely.

Use Types (POMC 20.39.040)						
Residential Use	Residential Zones					
	R1	R2	R3	R4	R5	R6
General						
Single-family detached (including new manufactured homes)	P	P	P			P
Two-family		P	P			P
Single-family attached (2 units)		P	P			P
Single-family attached (3 or 4 units)		P	P	P	P	P
Single-family attached (5 or 6 units)			P	P	P	P
Multifamily dwellings (3 or 4 units)			P	P	P	
Multifamily dwellings (5 or more units)			P	P	P	
Manufactured or Mobile Homes						
Designated manufactured home, manufactured or mobile home (except for new designated manufactured home)			P			
New designated manufactured home	P	P	P			P
Manufactured or mobile home park						
Supportive Housing						
Indoor emergency housing						
Indoor emergency shelter						
Permanent supportive housing	C	C	C	C	C	C
Transitional housing	C	C	C	C	C	C
Group Lodgings						
Boarding house				C	C	
Congregate living facilities		C	C	C	C	
Lodging house			C	C	C	
Group home (up to 8 residents), except as follows:	P	P	P	P	P	P
Adult family home	P	P	P			P
All group living (9 or more residents)				C	C	

Figure 49. Excerpt of Port Orchard Municipal Code table 20.39.040

Observations:

There are several user-friendliness challenges with these standards of Chapter 20.32 and 20.39, particularly as they relate to middle housing:

- The R2 zone, the largest by land area, allows a good mix of housing types, though might consider adding “Multifamily dwellings (3 or 4 units)”
- Residential development allowances are regulated in at least three code sections, which creates some opportunity for confusion. Residential development allowed by zone are regulated in Chapter 20.32 (Building Types), Chapter 20.34 and 20.35 (Residential

Districts & Commercial and Mixed-Use Districts, respectively), and Chapter 20.39 (Use Provisions).

- Code users must know to look in all applicable locations. For example:
  - Permissions for "Detached House" building type and "Single-family detached" land use, which have similar meanings to most people, are found in both Chapters 20.32 and 20.39.
  - Chapter 20.32 describes a "Townhouse" as a single building type but it appears to be buildable under at least six different land uses in Chapter 20.39. This is an effort to limit townhouse complexes to four connected units in lower density zones, but to allow larger six unit townhome clusters in higher density zones.
  - Chapter 20.32 describes a Fourplex as being either three or four units. Triplex is the term for a three-unit building and should be added, or the term renamed to Triplex/Fourplex.
  - Chapter 20.32 describes a Cottage Court but it is unclear which type of residential land use that falls under in Chapter 20.39, especially since there are mismatches in which zones the different types of single-family uses are allowed.
- The terms "Two-family" and "Single-family attached (2 units)" in Chapter 20.39 should simply be "Duplex" which is a more commonly used term. It is also unnecessary to describe two different types of duplexes in Chapter 20.32 when they are both allowed in the same zones. The building type "Attached House" is another instance of the same use being duplicated.
- A single-family triplex/fourplex is intended for potential homeownership with each unit on its own lot, and a multifamily triplex/fourplex is most likely intended for rentals. However, it is unknown why they have different permissions by zone. The same goes for fiveplex and sixplex developments. Ownership and rental housing that has the same land use and appearance should be treated similarly.
- The City has no path to permit manufactured housing (also known as factory-built housing). Factory-built housing should be treated the same as site-built housing if it conforms to all applicable zoning and design standards.

Residential Zones: Dimensional Standards

A blank cell means the standard is not applicable.

Note: The R5 zone is not currently mapped, and so was not evaluated closely.

Dimensional Standards (POMC 20.34)						
	Residential Zones					
Measure	R1	R2	R3	R4	R5	R6
Minimum Lot Size (square feet)						
Detached House (street vehicle access)	6,000	5,000	2,800 – 5,000			4,000
Detached House (alley vehicle access)	5,000	3,000	2,400			
Cottage Court	1,200	1,200	1,200			
Duplex: Side-by-Side		5,000	5,000			5,000

Dimensional Standards (POMC 20.34)						
Measure	Residential Zones					
	R1	R2	R3	R4	R5	R6
Duplex: Back-to-Back		5,000	5,000			5,000
Attached House		2,500	2,000			2,500
Fourplex			7,000	7,000	7,000	
Townhouse		2,000	800	800	1,000	
Apartment			10,000	10,000	10,000	
Minimum Site Size (square feet) (POMC 20.32)						
Cottage Court	22,500	22,500	22,500			22,500
Townhouse		5,000	5,000	5,000	5,000	
Minimum lot width (feet)						
Detached House (street vehicle access)	50	50	36			40
Detached House (alley vehicle access)	50	30	26			40
Cottage Court		20	20	20	20	
Duplex: Side-by-Side (street vehicle access)		60	60			60
Duplex: Side-by-Side (alley vehicle access)		40	40			40
Duplex: Back-to-Back		40	40			40
Attached House (street vehicle access)		30	30			30
Attached House (alley vehicle access)		20	20			20
Fourplex			60	60	60	
Townhouse (street vehicle access)		30	30	30	30	
Townhouse (alley vehicle access)		20	16	16	16	
Apartment			80	80	80	
Other Lot Standards						
Maximum hard surface coverage	50%	70%	80%	80%	80%	75%
Building Height (feet/stories)						
Height, maximum	35 *3 stories*	35 *3 stories*	35 *3 stories*	45 *4 stories*	55 *5 stories*	35 *3 stories*
Height, Accessory Structure (feet)	24	24	24			24
Density						
Minimum density (units per acre)						
Maximum density (units per acre)						

Dimensional Standards (POMC 20.34)						
Measure	Residential Zones					
	R1	R2	R3	R4	R5	R6
Setbacks (Feet)						
Primary street setback, minimum	10	10	10	10	10	10
Side street setback, minimum	10	10	10	10	10	10
Side interior setback, minimum	5	5	5	5	5	5
Rear setback, minimum	10	10	10	4-10	10	10

Figure 50. Excerpt of Port Orchard Municipal Code 20.34

Observations:

- Chapter 20.34 has complex lists of lot area and width standards that differ by zone and by building type, which is summarized in the table above. This is one of the more complicated arrangements of dimensional standards among Washington cities.
- However, the actual minimum lot widths, lot sizes, and setbacks and maximum hard surface coverage standards are generally reasonable. Some of the minimum lot widths greater than 50 feet may be worth revisiting for infill opportunities.
- There are no minimum density requirements, which disincentives most new development (especially subdivisions) from building anything other than single-family homes. This does not fulfill Comprehensive Plan policies LU-11, HS-9, and HS-16, which call for minimum densities at least in local centers.
- The lot size and setback standards are highly specific, providing no flexibility for developers and site planners. One building type must be chosen and stuck with throughout the design process, otherwise choosing or adding a different type seems to require restarting land area needs and design assumptions from scratch. This disincentivizes developing a mix building types in large subdivisions or any type of infill “missing middle” housing.
- The minimum “site size” provided only for cottages and townhouses discourages those middle types by providing a layer of complication and limiting the sites that are eligible for middle housing development.
- Each building type is listed in Chapter 20.32, where there are lists of dimensional standards (lot width, setback, etc.) that says “set by district” for nearly every standard. However, it does not say where to find this information. Code users must know to navigate to the relevant Chapter 20.34, for example, for Residential Districts.

Commercial and Mixed-Use Zones: Allowed Residential Development

In the first table, P means permitted and a blank cell means the building type is not permitted in the zone.

Note: The RMU zone is not currently mapped, and so was not evaluated closely.

Building Types (POMC 20.32.015)									
Building Type	Commercial and Mixed Use Zones								
	RMU	NMU	BPMU	CMU	DMU	GMU	CC	CH	IF
Detached House		P	P						
Backyard Cottage		P	P						
Cottage Court	P	P	P						
Duplex: Side-by-Side		P	P						
Duplex: Back-to-Back		P	P						
Attached House		P	P						
Fourplex		P							
Townhouse	P	P	P	P		P			
Apartment				P		P			
Live-Work	P	P	P	P	P	P	P		P
Shopfront House	P	P	P	P		P	P		P
Mixed Use Shopfront			P	P	P		P		P
Manufactured or Mobile Home Park									
Accessory Building	P	P	P	P	P	P	P	P	P

Figure 51. Excerpt of Port Orchard Municipal Code table 20.32.015

In the second table is selected permitted uses in residential zones. These are reorganized from the actual code and have subheadings added. P means permitted, C means conditionally permitted (subject to extra review and public comment), and a blank cell means the housing type is not permitted in the zone.

Note: The RMU zone is not currently mapped, and so was not evaluated closely.

Use Types (POMC 20.39.040)									
Residential Use	Commercial and Mixed-Use Zones								
	RMU	NMU	BPMU	CMU	DMU	GMU	CC	CH	IF
General									
Single-family detached (including new manufactured homes)		P	P						
Two-family	P	P	P						
Single-family attached (2 units)	P	P	P						
Single-family attached (3 or 4 units)	P	P	P	P	P	P	P		P
Single-family attached (5 or 6 units)	P	P	P	P	P	P	P		P
Multifamily dwellings (3 or 4 units)	P	P	P	P	P	P	P		P
Multifamily dwellings (5 or more units)	P	P	P	P	P	P	P		P

Manufactured or Mobile Homes									
Designated manufactured home, manufactured or mobile home (except for new designated manufactured home)									
New designated manufactured home	P	P	P						
Manufactured or mobile home park									
Supportive Housing									
Indoor emergency housing		C		C	C		C	C	
Indoor emergency shelter		C		C	C		C	C	
Permanent supportive housing	C	C	C	C	C	C	C	C	
Transitional housing	C	C	C	C	C	C	C	C	
Group Lodgings									
Boarding house		C	C			P			
Congregate living facilities		C	C			P			
Lodging house		C	C			P			
Group home (up to 8 residents), except as follows:		P	P						
Adult family home		P	P						
All group living (9 or more residents)	P	C	P	P	C		P		

Figure 52. Excerpt of Port Orchard Municipal Code table 20.39.040

Commercial and Mixed-Use Zones: Dimensional Standards

A blank cell means the standard is not applicable.

Dimensional Standards (POMC 20.35)									
Measure	Commercial and Mixed-Use Zones								
	RMU	NMU	BPMU	CMU	DMU	GMU	CC	CH	IF
Minimum Lot Size (square feet)									
Detached House (street vehicle access)		3,500	3,000						
Detached House (alley vehicle access)		3,500	3,000						
Cottage Court									
Duplex: Side-by-Side		7,000	6,000						
Duplex: Back-to-Back		7,000	6,000						
Attached House			3,500						
Fourplex		7,000							
Townhouse	1,000	800		800					
Apartment				5,000					

Dimensional Standards (POMC 20.35)									
Measure	Commercial and Mixed-Use Zones								
	RMU	NMU	BPMU	CMU	DMU	GMU	CC	CH	IF
Shopfront House	6,000	7,000	6,000	5,000		None	5,000		5,000
Mixed Use Shopfront			10,000	5,000	None	None	5,000		None
Minimum Site Size (square feet) (POMC 20.32)									
Cottage Court									
Townhouse									
Minimum lot width (feet)									
Detached House (street vehicle access)		60	60						
Detached House (alley vehicle access)		60	60						
Cottage Court									
Duplex: Side-by-Side (street vehicle access)		60	60						
Duplex: Side-by-Side (alley vehicle access)		60	60						
Duplex: Back-to-Back		60	60						
Attached House (street vehicle access)			30						
Attached House (alley vehicle access)			30						
Fourplex		60							
Townhouse (street vehicle access)	30	30		16					
Townhouse (alley vehicle access)	16	16		16					
Apartment				50					
Shopfront House	60	65	60	50		None	50		50
Mixed Use Shopfront			80	50	None	None	50		50
Other Lot Standards									
Maximum hard surface coverage	90%	70%	75%	80%	100%	90%	70%	70%	70%

Dimensional Standards (POMC 20.35)									
Measure	Commercial and Mixed-Use Zones								
	RMU	NMU	BPMU	CMU	DMU	GMU	CC	CH	IF
Building Height (feet)									
Height, maximum	35	35	40	40	38	38	35		35
Density									
Minimum density (units per acre)									
Maximum density (units per acre)									
Setbacks (Feet)									
Primary street setback, minimum	0 *(10 Max)*	10 *(30 Max)*	10 *(30 Max)*	0 *(10 Max)*	*(0 Max)*		15 *(50 Max)*	20	5
Side street setback, minimum	0 *(10 Max)*	10 *(30 Max)*	10 *(30 Max)*	0 *(10 Max)*	*(0 Max)*		15 *(50 Max)*	15 *(50 Max)*	5
Side interior setback, minimum	0 - 5	5	5	0	*(0 Max)*		10		10
Rear setback, minimum	10	10	10	20	*(0 Max)*		10		10

Figure 53. Excerpt of Port Orchard Municipal Code 20.35

Observations:

- Apartment and townhouse building types are not allowed in the Commercial Corridor (CC) zone, but single-family attached and multifamily land use is allowed. This appears to limit this type of development to the live-work building type, which has struggled to achieve market feasibility in most of the region.
- Apartment and townhouse building types are allowed in the Commercial Mixed Use (CMU) zone, which is often adjacent to the CC zone along arterial corridors and appears to serve a similar purpose.
- No residential development is allowed in the Commercial Heavy (CH) zone, which prevents any possible mixed-use redevelopment of aging shopping centers or underutilized commercial properties in the Bethel and Sedgwick corridors.
- The maximum impervious surface standards provide sufficient flexibility for residential development
- Note that while the Downtown Mixed Use (DMU) and Gateway Mixed Use (GMU) base height limit 38 feet, the Downtown Height Overlay District (DHOD) that overlaps almost all of these two zones provides increased height limits of 48-68 feet, which increases the feasibility of mixed-use development.

- The 40 feet height limit in the CMU and BPMU zones (perhaps the other most promising zones for mixed-use development given their coverage of the city) is limiting, allowing for only about three stories of development by-right. Mixed-use development is generally more feasible the taller the building is, since the cost of construction on a per-square-foot basis remains relatively constant for 3-6 story buildings.
- Options for height increases and bonus provisions (outside of the transfer of development rights program) may be evaluated in the HAP. Some cities provide height bonuses as part of MFTE participation. As a point of reference, the Ruby Creek Overlay District provides a base 55-feet height limit for the CMU, CC, and CH zones in the southern area of the city.

ADU Standards
Port Orchard regulates accessory dwelling units (ADU) in two locations: Chapter 20.68 POMC for basic procedures and design requirements, and POMC 20.32.030 for the "Backyard cottage" dwelling type. Attached ADUs are allowed in all residential zones on lots with a single detached dwelling unit and limited to 40 percent the size of the primary unit or 1,000 square feet, whichever is less. Detached ADUs (backyard cottages) are allowed in the R1, R2, R3, R6, NMU, RMU, BPMU, and GB zones and limited to 40 percent the size of the primary unit or 1,000 square feet, whichever is greater.

Port Orchard explicitly permits ADUs to be used as a short-term rental and for occupation by home businesses and occupations.

Port Orchard amended its ADU standards in October 2022 with Ordinance 038-22. The ordinance removes requirements to register an ADU with an affidavit and ending the need for an "ADU agreement" to be recorded with the county auditor. As part of this, the owner occupancy requirement and parking requirements for ADUs have been removed; these are two of the most common and significant barriers to ADUs, so these changes will improve feasibility of ADU development.

Other Development Regulations
POMC 20.129 provides standards for the protection and replacement of significant trees. City staff have observed that the requirement for a tree retention plan, which applies to all development except detached houses and backyard cottages, adds a considerable and repetitive cost for development applications. Alternative approaches are available, such as requiring a minimum tree canopy coverage (which can use existing or new trees) that still achieves the same goals but avoids the risk of lone significant trees being damaged subsequent to development.

Design Standards
Port Orchard has several residential design standards.

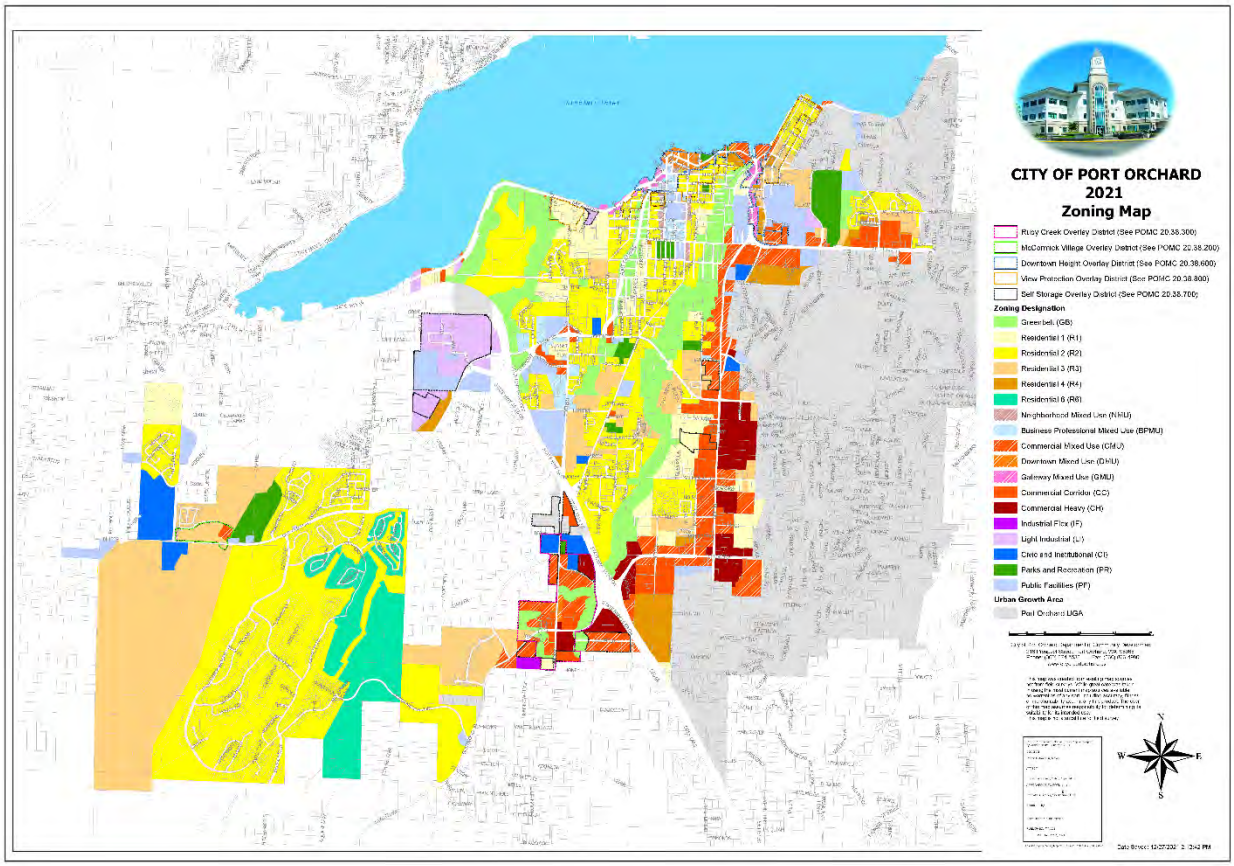
- POMC 20.32: Building types
- POMC 20.139: Residential design standards for residential building types like detached houses, backyard cottages, cottages, duplexes, townhomes, and accessory buildings
- POMC 20.127: Commercial and multifamily development block frontages, site planning, and building design

At least two stakeholders said the cottage housing standards discourage their development, particularly the minimum site size standards and the minimum open space:

- The minimum site area is 22,500 SF regardless of number of units, and an additional 4,500 SF site area is required per unit when there are six or more cottages even though the minimum unit lot size is 1,200 SF.
- The minimum courtyard area is 3,000 SF (minimum width 40 feet) and extra 600 SF per unit is required when there are six or more cottages.
- Compare these other typical cottage standards, such as in Anacortes, which do not regulate lot size and have smaller open space requirements.

Zoning Map

The City's current zoning map is copied below.



Building Code

The City of Port Orchard has adopted standard building and trades under Chapter 20.200 POMC with local amendments. Adopted codes include the International Building Code (applies to commercial and mixed-use development, and residential development with three or more units), the International Residential Code (applies to single-family, duplex, and townhouse development), and international codes for mechanical systems, plumbing, energy conservation, fire safety, and property maintenance.

Landlord-Tenant Regulations

People who rent homes are significantly more likely to be cost-burdened, face eviction, and be at risk of homelessness. Recognizing this, the State of Washington sets the baseline for the landlord-tenant relationship through the State Residential Landlord-Tenant Act, RCW 59.18. According to the Attorney General's Office, there is no centralized enforcement mechanism for the RCW, and so it is incumbent upon landlords and tenants to either self-remedy violations, seek counseling or low-cost legal help from non-profit organizations, and/or resolve disputes through the courts.

Over the past few years, the Washington State Legislature has adopted new tenant protections as follows.

Year	RCW	Topic	Effect
2018	59.18.255	Prohibition on source of income discrimination	Prohibits source of income discrimination against a tenant who uses a benefit or subsidy to pay rent
2019	59.18.200	Notice of demolition	Tenants must be provided a 120-day notice to tenants of demolition or substantial rehabilitation of premises
2019	59.18.140	Notice of rent increase	Tenants must be provided a 60-day notice of a rent increase, and increases may not take effect until the completion of the term of the current rental agreement
2020	59.18.610	Initial deposits and fees	Tenants may request paying initial deposits, nonrefundable fees, and last month's rent in installments (may be spread over 2-3 months, depending on lease length)
2021	59.18.650	Just cause evictions	Landlords must specify a reason for refusing to continue a residential tenancy, subject to certain limited exceptions

Figure 54. Recent state landlord-tenant regulations

Notably, rent control by local jurisdictions was banned at the state level in 1981 (RCW 35.21.830). Otherwise, local jurisdictions are free to adopt additional or more stringent regulations than those provided by the state, and numerous cities and counties have done so.

The City of Port Orchard has not adopted any local landlord-tenant regulations. The King County Bar Association provides a model tenant protection ordinance within the framework of Washington State law which could be informative for future discussions and recommendations. Several Washington cities have recently adopted at least portions of the model ordinance.

State Land Use Law

In recent years the Washington State Legislature has enacted preemption laws requiring local jurisdictions to ease regulations on certain types of residential land uses. In the 2022 legislative session, several additional bills were proposed with major preemptions regarding missing middle housing, accessory dwelling units, and minimum building heights (respectively, HB 1782, HB 2020, and HB 1660). These recent bills did not pass but can likely be expected to come up again in 2023 and beyond as Washington continues to confront statewide housing challenges.

A non-exhaustive list of recent state preemptions follows.

Year	RCW	Topic	Effect
2018	36.70A.450	Home-based family day care	Cities may not prohibit the use of a residential dwelling, located in an area zoned for residential or commercial use, as a family day-care provider's facility serving twelve or fewer children
2019	35.21.684	Tiny homes	Cities may not adopt ordinances that prevent tiny homes with wheels used as a primary residence in a manufactured/mobile home community, with the exception that ordinances may require that tiny houses with wheels contain sanitary plumbing fixtures.
2019	35A.63.300	Religious organization density bonus	Upon request, cities must allow an increased density bonus for development of single-family or multifamily residences affordable to low-income households on property owned by religious organizations.
2019	36.70A.600	Safe harbor from appeals under the State Environmental Policy Act	The adoption of ordinances and other nonproject actions taken by a city to ease regulations on housing development are not subject to administrative or judicial appeal under RCW 43.21C. Similar protection is made for housing elements and implementing regulations that increase housing capacity under RCW 36.70A.070.
2020	36.70A.698	Parking for accessory dwelling units	Cities may not require the provision of off-street parking for accessory dwelling units within one-quarter mile of a major transit stop (likely does not apply to Port Orchard due to low transit service today).
2020	36.70A.620	Parking for multifamily housing	Cities may not require more than a certain ratio of parking spaces per unit within one-quarter mile of a frequent transit stop. There are different limits for market-rate units, designated senior and disability homes, and low-income units (likely does not apply to Port Orchard due to low transit service today).
2021	35A.21.430	Permanent supportive housing	Cities may not prohibit permanent supportive housing in areas where multifamily housing or hotels are permitted. Reasonable occupancy, spacing, and intensity of use requirements may be imposed. This supersedes a similar law passed in 2019, RCW 35A.21.305.

Year	RCW	Topic	Effect
2021	35A.21.430	Transitional housing	Cities may not prohibit transitional housing in areas where multifamily housing or hotels are permitted. Reasonable occupancy, spacing, and intensity of use requirements may be imposed.
2021	35A.21.430	Indoor emergency shelters and indoor emergency housing	Cities may not prohibit indoor emergency shelters and indoor emergency housing in any zones in which hotels are permitted. Reasonable occupancy, spacing, and intensity of use requirements may be imposed.
2021	35A.21.314	"Family" definition and number of unrelated household occupants	Except for limits on occupant load per square foot or general health and safety provisions, cities may not regulate or limit the number of unrelated persons that may occupy a household or dwelling unit.
2021	36.70A.070	Requirements for Comprehensive Plan Housing Elements	Requires planning and analysis of housing needs for moderate, low, very low, and extremely low-income households; a variety of housing types; zoning that may have a discriminatory effect; and other related issues. This will apply to the next major update of Port Orchard's Comprehensive Plan due in 2024.

Figure 55. Recent state zoning preemptions

Federal Incentives

Created in 2017, Opportunity Zones are intended to assist economically distressed communities with preferential tax treatment for those investing eligible capital gains. Port Orchard has been designated with two federal Opportunity Zones located contiguously with Census Tracts #53035092200 and #53035092300. This covers the much of the city east of State Route 16. Generally, this tool has seen little interest from large residential developers, but it may be appealing to local or long-term hold developers. The program expires in 2026.

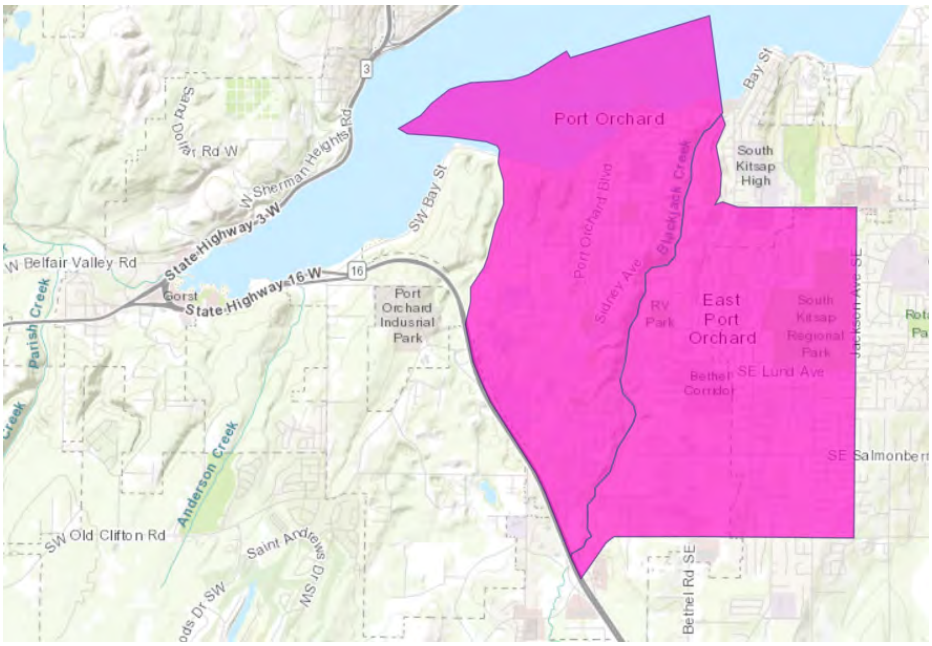


Figure 56. Location of the federal Opportunity Zones in Port Orchard

Port Orchard shares many of its housing challenges with other communities nationwide, and the country's affordable housing problem has caught the attention of the White House. In May 2022, President Biden released a statement saying, in part:

> *"One of the most significant issues constraining housing supply and production is the lack of available and affordable land, which is in large part driven by state and local zoning and land use laws and regulations that limit housing density. Exclusionary land use and zoning policies constrain land use, artificially inflate prices, perpetuate historical patterns of segregation, keep workers in lower productivity regions, and limit economic growth. Reducing regulatory barriers to housing production has been a bipartisan cause in a number of states throughout the country. It's time for the same to be true in Congress, as well as in more states and local jurisdictions throughout the country."*

The President has directed his administration to leverage existing transportation and economic development funding streams to reward jurisdictions that promote density, main street revitalization, and transit-oriented development. For the near future, the President has also proposed billions of dollars for HUD grant programs to support local jurisdictions in eliminating barriers to affordable housing production, supporting manufactured housing, scaling up ADU production, and other measures.

Section 7 – Land Capacity Analysis

A land capacity analysis is a core element of a housing needs analysis, as required by the Washington Department of Commerce. Kitsap County completed a Buildable Lands Report in November 2021 which contains a comprehensive analysis of vacant and redevelopable land in Port Orchard as well as required land to meet expected population growth. As shown in Figure 57, Port Orchard has surplus land to accommodate 5,750 more residents than expected by 2036. According to the 2021 Kitsap County Buildable Lands Report, the County is currently updating its zoning to remove barriers to housing in UGAs. The target population growth in Port Orchard's UGA is based on forthcoming County zoning code revisions incentivizing urban housing development in the UGA consistent with its designation as a High-Capacity Transit Corridor in PSRC's VISION 2050 framework. Together, the city and UGA have available land for a surplus of 5,750 residents.

Jurisdiction	2020 Population	2044 Population Target	2020-2044 Population Growth	2020 Population Capacity	Surplus / Deficit
Port Orchard City	15,587	26,087	10,500	16,250	5,750
Port Orchard UGA	15,370	18,922	3,552	3,552	0
Port Orchard Total	30,957	45,009	14,052	19,802	5,750

Figure 57. Port Orchard 2021 Residential Buildable Lands Analysis Summary. Source: 2021 Kitsap County Buildable Lands Analysis, Kitsap Regional Coordinating Council, City of Port Orchard

Figure 58 shows a breakdown of unit and population capacity by zone and type of unit. As shown, the majority of the new unit capacity is on vacant or redevelopable land in the R2 and R3 zones, as well as to a lesser degree in the CMU zone. The largest amount of multifamily unit capacity is found in the R3 zone.

Zoning	Net Acres	Single-Family Unit Capacity	Multifamily Unit Capacity	Population Capacity
Greenbelt (GB)	71.74	36		96
Residential 1 (R1)	35.15	255		685
Residential 2 (R2)	147.06	1,495		4,022
Residential 3 (R3)	31.87	1,540	1,350	7,049
Residential 4 (R4)	21.56		456	954
Residential 6 (R6)	18.11	421		1,134
Neighborhood Mixed Use (NMU)	0.54		5	11
Business Professional Mixed Use (BPMU)	5.59		19	39
Downtown Mixed Use (DMU)	0.24		2	4
Gateway Mixed Use (GMU)	0.31		39	82
Commercial Mixed Use (CMU)	49.76		961	2,009
Commercial Corridor (CC)	18.62		79	166

Figure 58. Port Orchard 2021 Buildable Lands by Zone. Source: 2021 Kitsap County Buildable Lands Analysis.

Port Orchard's land capacity is likely higher than the numbers listed in the 2021 Kitsap County Buildable Lands Report as a result of new zoning changes adopted in 2019 but not used in the analysis. For example, the Buildable Lands Report assumed that the R2 zone would see only single-family development even though although multifamily development is allowed in the zone and multifamily development would result in a larger number of units than shown in the table above.

Appendix A – Kitsap County Impact Fee Comparison

	Single-Family	Duplex	Triplex & Fourplex	Townhouse	Multifamily 1-2 floors	Multifamily 3+ floors	Multifamily Mixed Use	ADU
Road Impact Fees								
Port Orchard	$5,205.69	$5,205.69	$2,944.63 – $5,205.69	$5,205.69	$2,944.63	$2,313.64	$1,892.98	$1,472.32 – $2,944.63
Kitsap County	$4,229.84	$2,294.91	$2,294.91	$2,564.90	$2,294.91	$1,754.93	$1,619.94	$2,564.90
Bremerton	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Poulsbo	$5,318.52	$4,128.48	$4,128.48	$4,128.48	$4,128.48	$3,068.16	$3,068.16	$4,128.48
Bainbridge Island	$1,811.82	$1,123.33	$1,123.33	$1,413.22	$1,123.33	$1,123.33	$1,123.33	$1,123.33
Gig Harbor	$5,720.00	$6,085.00	$6,085.00	$6,085.00	$6,085.00	$6,085.00	$6,085.00	$6,085.00
Parks Impact Fees								
Port Orchard	$4,280.00	$3,089.00	$3,029.00	$3,089.00 – $4,280.00	$3,014.00	$3,014.00	$3,014.00	$2,344.00
Kitsap County	$743.10	$362.03	$362.03	$362.03	$362.03	$362.03	$362.03	$362.03
Bremerton	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Poulsbo	$1,195.00	$1,195.00	$1,195.00	$1,195.00	$1,195.00	$1,195.00	$1,195.00	$1,195.00
Bainbridge Island	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Gig Harbor	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00	$1,500.00
School Impact Fees								
Port Orchard	$1,370.83	$861.65	$861.65	$861.65	$861.65	$861.65	$861.65	$861.65
Kitsap County	$1,455.66	$839.81	$839.81	$839.81	$839.81	$839.81	$839.81	$839.81
Bremerton	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Poulsbo	$1,455.66	$839.81	$839.81	$839.81	$839.81	$839.81	$839.81	$0.00
Bainbridge Island	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Gig Harbor	$4,130.00	$2,179.00	$2,179.00	$2,179.00	$2,179.00	$2,179.00	$2,179.00	$4,130.00
Total Impact Fees								
Port Orchard	$10,856.52	$9,156.34	$6,835.28 – $9,096.34	$9,156.34 – 10,347.34	$6,820.28	$6,189.29	$5,768.63	$4,677.97 - $6,150.28
Kitsap County	$6,428.60	$3,496.75	$3,496.75	$3,766.74	$3,496.75	$2,956.77	$2,821.78	$3,766.74
Bremerton	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Poulsbo	$7,969.18	$6,163.29	$6,163.29	$6,163.29	$6,163.29	$5,102.97	$5,102.97	$5,323.48
Bainbridge Island	$1,811.82	$1,123.33	$1,123.33	$1,413.22	$1,123.33	$1,123.33	$1,123.33	$1,123.33

	Single-Family	Duplex	Triplex & Fourplex	Townhouse	Multifamily 1-2 floors	Multifamily 3+ floors	Multifamily Mixed Use	ADU
Gig Harbor	$11,350.00	$9,764.00	$9,764.00	$9,764.00	$9,764.00	$9,764.00	$9,764.00	$11,715.00

Appendix B – Comprehensive Plan Policies

The consultant team's comments on select housing policies are listed below.

Housing Element

Goal/ Policy	Text	MAKERS Comments
HS-1	Identify a sufficient amount of land for housing, including but not limited to government-assisted housing, housing for low-income families, manufactured housing, multifamily housing, group homes, and foster care facilities.	The Land Capacity Analysis in Section 7 of this report finds the City has surplus capacity for 5,750 residents beyond 2044 growth targets. Land capacity will be reviewed in more detail with the update to the Port Orchard Comprehensive Plan due in 2024.
HS-2	Support the development of a variety of housing types, including apartments, townhomes, mixed-use (residential and other uses) and live-work development, small-lot and zero lot line single-family homes, and manufactured homes, as well as traditional single-family homes, through innovative planning, efficient and effective administration of land and building codes, and, where available, applicable financial assistance.	The City has a good foundation of supportive zoning standards to support a variety of housing types, though as noted in Section 6 some improvements could be made or more incentives added. The MVOD zone is an example of innovative planning. Financial assistance largely is implemented through the MFTE program, though other options may need to be explored to support the low-income population. See also HS-20.
HS-3	Monitor official and estimated population and housing data to ensure zoning and development regulations reflect market demands	The HAP is partially fulfilling this policy. Some gaps have been found in this report.
HS-4	Adopt zoning and development regulations that will have the effect of minimizing housing costs and maximizing housing options.	According to City staff, this policy is generally being met, but stakeholders report other factors outside the City's control are also contributing to increasing the costs of building housing.
HS-5	Support the development of housing and related services that are provided by regional housing programs and agencies for special needs populations, especially the homeless, children, the elderly, and people with mental or physical disabilities.	Port Orchard does not have any emergency housing or emergency shelter for homeless individuals. Supportive and group housing for people with mental or physical disabilities also appears limited, though there is a considerable share of senior housing and assisted living facilities concentrated on the Pottery Avenue corridor.
HS-6	Consider reducing permitting fees for development which provide affordable housing as defined by the Washington Administrative Code (WAC) section 200-120- 020.	No waivers/reductions for impact fees, general facilities charges, or other permitting fees appear to be in place.
HS-7	Consider the creation of zoning and other land use incentives for the private construction of affordable and special needs housing as a percentage of units in multi-family development.	This has been met through the MFTE program.
HS-8	Consider adopting incentives for development of affordable multi-family homes through property tax abatement in accordance with 84.14 RCW, focusing on designated mixed-use local centers with identified needs for residential infill and redevelopment.	This has been met through the MFTE program.

Goal/ Policy	Text	MAKERS Comments
HS-9	Implement minimum residential density requirements in centers of local importance in order to increase land and infrastructure efficiency.	The City does not have any minimum density standards in any zone.
HS-10	Encourage the development of vertical multi-family housing above ground floor commercial uses within centers of local importance.	The MFTE Type III program and supportive zoning helps encourage this type of housing, and there are a variety of private projects proposed in local centers.
HS-11	Encourage the development of a mix of housing types within walking and bicycling distance of public schools, parks, transit service, and commercial centers.	A more thorough review of the future land use map will be needed in the Comprehensive Plan update. This is a good policy to continue forward.
HS-12	Require that new housing developments occur concurrently with necessary infrastructure investments.	This is primarily met through impact fees.
HS-14	Implement zoning and development regulations which encourage infill housing on empty and redevelopable parcels.	This type of development does not appear to be happening in large numbers, with most housing being built on greenfields on the edge of the city. More incentives for infill and redevelopment in local centers should be explored in the HAP.
HS-15	Allow the development of residential accessory dwelling units (ADUs) and detached accessory dwelling units (DADUs) in appropriate residential areas with sufficient public facilities to adequately serve additional residents.	Allow in all residential areas. Consider policy to allow ADU's to be built with all single-family, duplex, and triplex developments.
HS-16	Consider increasing maximum housing densities and implementing minimum housing densities in appropriate areas.	Similar to policy HS-9. Minimum densities will be explored in the HAP. The City has no maximum density limits in residential zones.
HS-18	Consider programs to preserve or rehabilitate neighborhoods and areas that are showing signs of deterioration due to lack of maintenance or abandonment.	One project has utilized the MFTE Type II program intended for abandoned properties. The City could consider other maintenance support, such as use of Community Development Block Grants to help low-income homeowners with rehabilitation.
HS-19	Consider commercial building design standards that establish and protect neighborhood character.	Commercial design standards have been adopted.
HS-20	Seek federal, state, and other funding for the renovation and maintenance of existing housing stock.	Staff report no work has been done on grant applications to renovate/maintain existing housing stock.
HS-22	Streamlining the permitting process for development by implementing policies and procedures that reduce the length of time involved in plan approval.	Stakeholders noted that permit processing time and unexpected hurdles are a continuing problem, though the City has recently moved to an electronic system.
HS-24	Consider developing and implementing flexible development standards for housing being proposed in the vicinity of critical areas to meet both the goals of housing targets and environmental protection.	The City has recently updated its critical areas standards and has no maximum density limits in residential zones.
HS-27	If the City's growth rate falls below 2.1% annual growth, the rate at which the City would need to grow at in order to hit its 2036 growth target, the city should consider adopting reasonable	In individual years the growth rate has sometimes been lower than 2.1% (e.g. 2.7% from 2017 to 2018), and from 2015 to 2022 the average annual growth rate was 2.6%. It is unclear which

Goal/ Policy	Text	MAKERS Comments
	measures such as reducing adopted transportation levels of service, impact fees, or accelerating growth related projects within the City's Capital Improvement Program.	timeframe should be used to evaluate whether "reasonable measures" are needed.
HS-28	If the City's growth rate increases from the 2.5% growth rate experienced from 2013-2015, the City should consider adopting reasonable measures including increasing transportation level of service standards, impact fees, or delaying projects within the City's Capital Improvement Program.	In individual years the growth rate has sometimes been higher than 2.5% (e.g. 2.8% from 2021 to 2022), and from 2015 to 2022 the average annual growth rate was 2.6%. It is unclear which timeframe should be used to evaluate whether "reasonable measures" are needed.

Land Use Element

Goal/ Policy	Text	MAKERS Comments
LU-1	Ensure that land use and zoning regulations maintain and enhance existing single-family residential neighborhoods, while encouraging that new development provides a mixed range of housing types.	Some variety of housing types are being seen in recent years, but not enough to meet all market needs. Revisiting this policy in the context of single-family neighborhoods may be warranted in the Comprehensive Plan update.
LU-11	Within centers of local importance, set minimum building densities that enable lively and active streets and commercial destinations. Such limits may take the form of: minimum floors or building height, floor-area-ratios, and lot coverage; and maximum street setbacks and parking spaces.	The housing policy review in Section 6 finds that none of these ideas have been implemented, with the exception of maximum street setbacks in limited commercial areas.
LU-17	Incentivize infill development to preserve and protect open space, critical areas, and natural resources.	This type of development does not appear to be happening in large numbers, with most housing being built on greenfields on the edge of the city. More incentives for infill and redevelopment in local centers should be explored in the HAP.

Transportation Element

Goal/ Policy	Text	MAKERS Comments
Goal 7	Work with Kitsap Transit to provide increased transit service to the City as development occurs.	Level of service standards for transit frequency is not mentioned anywhere in the Transportation Element.
TR-38	Require new development and redevelopment to provide safe neighborhood walking and biking routes to schools.	The future land use map and zoning map should be evaluated to determine what housing capacity and potential for new development exists near schools. New infrastructure is most easily paid for by new development, and schools should be nodes of residential density to facilitate short walks and bike rides for students from home.
TR-86	Consider reduction of parking requirements if a development provides alternatives for multi-modal uses such as Transportation Demand Management measures.	Noted.

City of Port Orchard
216 Prospect Street, Port Orchard, WA 98366
(360) 876-4407 • FAX (360) 895-9029

Agenda Staff Report

Agenda Item No.:	5d	Meeting Date:	February 7, 2023
Subject:	An Ordinance Adopting the City's 2023 Stormwater and Watersheds Comprehensive Plan	Prepared by:	Nick Bond DCD Director
		Atty Routing No.:	NA
		Atty Review Date:	NA

Summary: The City has chosen to develop and implement its first surface and stormwater comprehensive plan with a focus on watersheds spanning the landscape and stormwater influence on water resources. This approach recognizes the ecosystem function and value of receiving waters and creates a plan to accommodate future growth, correct existing flooding problems, involve the public, preserve functioning habitat, and enhance habitat where opportunities are found. This Plan sets a course for stormwater programs and capital projects and addresses current and anticipated regulatory requirements, future development, existing flooding and water quality concerns, infrastructure maintenance and management, and the resources needed for the City to fully implement this Plan.

Recommendation: The Planning Commission should review the final stormwater comprehensive plan prior to scheduling a public hearing. Staff recommends that a public hearing be scheduled for March 7, 2023 on the proposed amendment..

Motion for consideration: "I move that the Planning Commission recommend approval of an ordinance adopting the 2023 Stormwater and Watersheds Comprehensive Plan, as presented to the City Council."

Attachments:

1. 2023 Stormwater and Watersheds Comprehensive Plan

CITY OF PORT ORCHARD
STORMWATER AND WATERSHEDS COMPREHENSIVE PLAN

2023

Port ORCHARD

Acknowledgements

This Stormwater and Watersheds Comprehensive Plan (Plan) was produced through the combined efforts, ideas and contributions of the following City of Port Orchard staff, appointed and elected officials, and consultants. Photos courtesy of Herrera staff.

City of Port Orchard:

Mayor

Rob Putaansu

City Council

Shawn Cucciardi
Jay Roasapepe
Scott Diener
John Clauson
Cindy Lucarelli
Fred Chang
Mark Trenary

Planning Commission

Annette Stewart
Stephanie Bailey
Tyler McKlosky
Paul Fontenot
David Bernstein
Bek Ashby
Joe Morrison

City Staff

Zack Holt..... Stormwater Permit Manager
Tony Lang..... Director of Public Works
Mark Dorsey..... Former Director of Public Works
Chris Hammer..... City Engineer
Jacki Brown..... Utility Manager
Nick Bond..... Director of Community Development
Ian Smith..... Engineer
Jim Fisk..... Senior Planner
Darren Padroza..... GIS/Inspections

Consultants:

Herrera Environmental Consultants, Inc.

Matthew Fontaine..... Project Manager
Mindy Fohn..... Watershed Planning
Rebecca Dugopolski ..... NPDES Permit Specialist
Julianne Chechanover..... Staff Engineer
Katie Wingrove..... Geographic Information Systems Lead
Brian Busiek..... Capital Project Planning
Jonathan Waggoner..... Capital Project Planning
Brianna Blaud..... Capital Project Planning
Stacy Vayanos..... Graphic Design

Reid Middleton, Inc.

Mark Davis..... Engineer

GeoEngineers

Joe Callaghan..... Biologist
Adam Wright..... Biologist

FCS Group

John Ghilarducci..... Principal
Take Aaker..... Project Manager
Luke Rosson..... Financial Analyst

Table Of Contents

Table Of Contents cont...

TABLES

FIGURES

Acronyms And Abbreviations

BMP	Best management practice
CFC	Capital Facilities Charge
CTE	Career & Technical Education
CIP	Capital improvement program
City	City of Port Orchard
CMMS	Computerized maintenance management system
Ecology	Washington State Department of Ecology
ESA	Federal Endangered Species Act
FTE	Full Time Equivalent
GIS	Geographic information systems
GMA	Washington State Growth Management Act
IDDE	Illicit discharge detection and elimination
ISU	Impervious Surface Unit
LID	Low Impact Development
MS4	Municipal separate storm sewer system
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance

OFM	Office of Financial Management
Permit	Western Washington Phase II Municipal Stormwater Permit
PMC	Port Orchard Municipal Code
QAPP	Quality Assurance Project Plan
RCW	Revised Code of Washington
SAM	Stormwater Action Monitoring
SMAP	Stormwater Management Action Planning
STEM	Science, technology, engineering, and math
TMDL	Total Maximum Daily Load
UGA	Urban Growth Area
UIC	Underground Injection Control
WAC	Washington Administrative Code
WRIA	Water Resource Inventory Area
WREC	Watershed Restoration and Enhancement
WSPER	West Sound Partners for Ecosystem Recovery
WSSOG	West Sound Stormwater Outreach Group

1 Introduction

Stormwater Runoff and Effects

The City of Port Orchard (City) operates a system of drainage pipes and ditches to convey stormwater runoff to receiving waters including streams and Sinclair Inlet. The drainage system prevents and minimizes damage to private properties, city streets, and other infrastructure. As rain falls and travels across hard surfaces, such as roofs, yards, and streets, pollutants are picked up and carried to receiving waters. The City is faced with the challenge to convey runoff safely, while minimizing adverse high-flow impacts (erosion, flooding, and sediment deposition) and water quality degradation to receiving waters.

In 2008, the City established the storm drainage utility (Utility) to create a funding source to address stormwater and receiving water management issues citywide. State and federal regulations related to stormwater have evolved since 2007, when the City was issued its first National Pollutant Discharge Elimination System (NPDES) Western Washington Phase II Stormwater Permit (Permit) from the Washington Department of Ecology (Ecology), leading to more stringent requirements for implementing projects, programs, and maintenance.

Watershed signage, City of Port Orchard

Purpose of this Plan

City water resources include freshwater streams, marine water shorelines and estuaries, upland wetlands, and aquifers underground. These waters support aquatic wildlife, terrestrial wildlife, and people, in the form of recreation and drinking water.

> *A watershed is the area of land where surface water flows to a receiving water body: supporting salmon in a stream, where children play at the beach, or the nearshore environment nourishing shellfish and forage fish.*

The City has chosen to develop and implement its first surface and stormwater comprehensive plan with a focus on watersheds spanning the landscape and stormwater influence on water resources. This approach recognizes the ecosystem function and value of receiving waters and maps out a plan to accommodate future growth, correct existing flooding problems, involve the public, preserve functioning habitat, and enhance habitat where opportunities are found.

This Stormwater and Watersheds Comprehensive Plan (Plan) sets a course for stormwater programs and capital projects for years to come and addresses current and anticipated regulatory requirements, future development, existing flooding and water quality concerns, infrastructure maintenance and management, and the resources needed for the City to fully implement this Plan.

Stormwater Management Mission Statement

The mission of the stormwater management program is to regulate and manage use of the City's municipal separate storm sewer system (MS4) as required by the City's NPDES permit while conscientiously managing and protecting surface and receiving waters for public health and enjoyment.

Long-term Goals

All functions performed or influenced by the stormwater management program can be divided into ten major elements. City staff developed goals for each program element.

These goals guide the City during planning and implementation of this Plan.

Long-term Goals

FLOOD REDUCTION

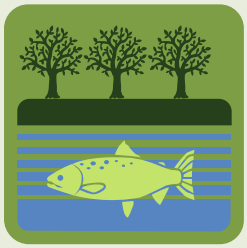
- Conveyance infrastructure that meets the Public Works Engineering Standards (City Standards) (convey the 100-yr return period flow; 50-yr return period flow if the 100-yr overflow does not threaten buildings and critical structures) for the entire city.
- The City's tidally influenced stormwater infrastructure is resilient to tidal fluctuation including projected sea level rise.
- The City has a complete understanding of system deficiencies and a plan to address those deficiencies that is balanced with available funding.

GROUND AND SURFACE WATER QUALITY

- Infiltrated stormwater does not negatively affect groundwater quality.
- Streams meet water quality standards for human health and aquatic life.

GROUND AND SURFACE WATER QUANTITY

- Groundwater supply is replenished by infiltration from developed areas at a rate that is equal to the volume infiltrated under natural forested conditions.
- Streams have adequate summer flow volume and natural winter storm flow regimes to support local aquatic life.



HABITAT ENHANCEMENT

- City-influenced streams are fully restored to forested hydrologic conditions and meet designated uses and water quality standards.
- City culverts that carry fish-bearing streams allow fish to pass unimpeded.
- Pocket estuaries adjacent to city lands are ecologically functional and not negatively affected by stormwater runoff or hydraulic constraints from stormwater infrastructure.
- Shorelines adjacent to city lands are not negatively affected by stormwater.
- City watersheds are characterized and prioritized according to potential environmental restoration, conservation, or development so that investments in stormwater and watershed projects can be directed to where they achieve the maximum benefit.

MAPPING AND ASSET MANAGEMENT

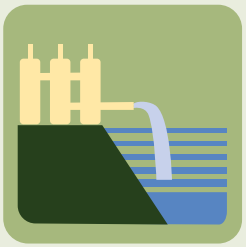
- Stormwater system asset attributes and conditions are tracked and managed in one cohesive system that is compatible with all other city systems.
- The stormwater system asset management system supports planning and prioritizing repairs, upgrades, and maintenance, as well as generating and tracking work orders to support annual review and evaluation.

PUBLIC PARTICIPATION (EDUCATION, OUTREACH, AND INVOLVEMENT)

- Community members understand the relationship between their actions and stormwater quantity and quality and take action to minimize their stormwater impacts and habitat damage.
- City residents and people that work in the city support the mission of the stormwater and watersheds program.
- The community has access to public natural areas for education and aesthetic enjoyment without creating negative impacts to sensitive habitat.
- The community views stormwater and watershed management and planning as a necessary function for citizen enjoyment of water resources.

POLLUTANT SOURCE CONTROL

- Pollutants from developed lands and roads do not enter surface water or groundwater at levels that are harmful to aquatic life or human health.
- Citizens and businesses implement pollution prevention practices to the maximum extent feasible.

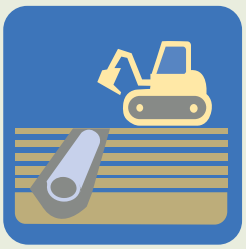


INFRASTRUCTURE OPERATIONS AND MAINTENANCE

- All City-owned and privately-owned stormwater infrastructure, including flow control and water quality facilities, function as designed.

DEVELOPMENT PRACTICES

- All development and redevelopment projects comply with City Standards for stormwater management.
- The City's approach to development and redevelopment oversight enables money spent on stormwater management to have the maximum benefit for water resources.
- Runoff from all manmade development and construction sites is mitigated by stormwater facilities in accordance with current City Standards prior to discharge to surface water bodies.



COMPREHENSIVE PLANNING, ADMINISTRATION, AND FUNDING

- The City's storm drainage utility has a comprehensive strategy to manage infrastructure protect water resources, restore damaged habitats, and ensure sustainable development.
- The City's storm drainage utility is adequately funded to meet regulatory requirements and the stormwater related needs of citizens.
- Existing property owners and developers pay for an equitable share of the necessary improvement and expansion of the City's stormwater system.
- The City has a complete understanding of existing unmanaged manmade surfaces and a plan to retrofit those surfaces that is balanced with available funding.

Opportunities and Challenges

As part of the stormwater and watersheds comprehensive planning process, the City identified opportunities and challenges faced by the Utility. The relationship between these opportunities and challenges and the City's long-term goals is discussed in more detail below.

Opportunities

The process to develop this Plan allowed City staff to identify long-term goals, describe the ideal state for managing stormwater runoff, and identify and plan capital projects to invest in the future of the City stormwater system. Existing activities, future programs and projects, and future regulatory requirements were evaluated when developing this Plan. This Plan sets a road map for the future of stormwater management.

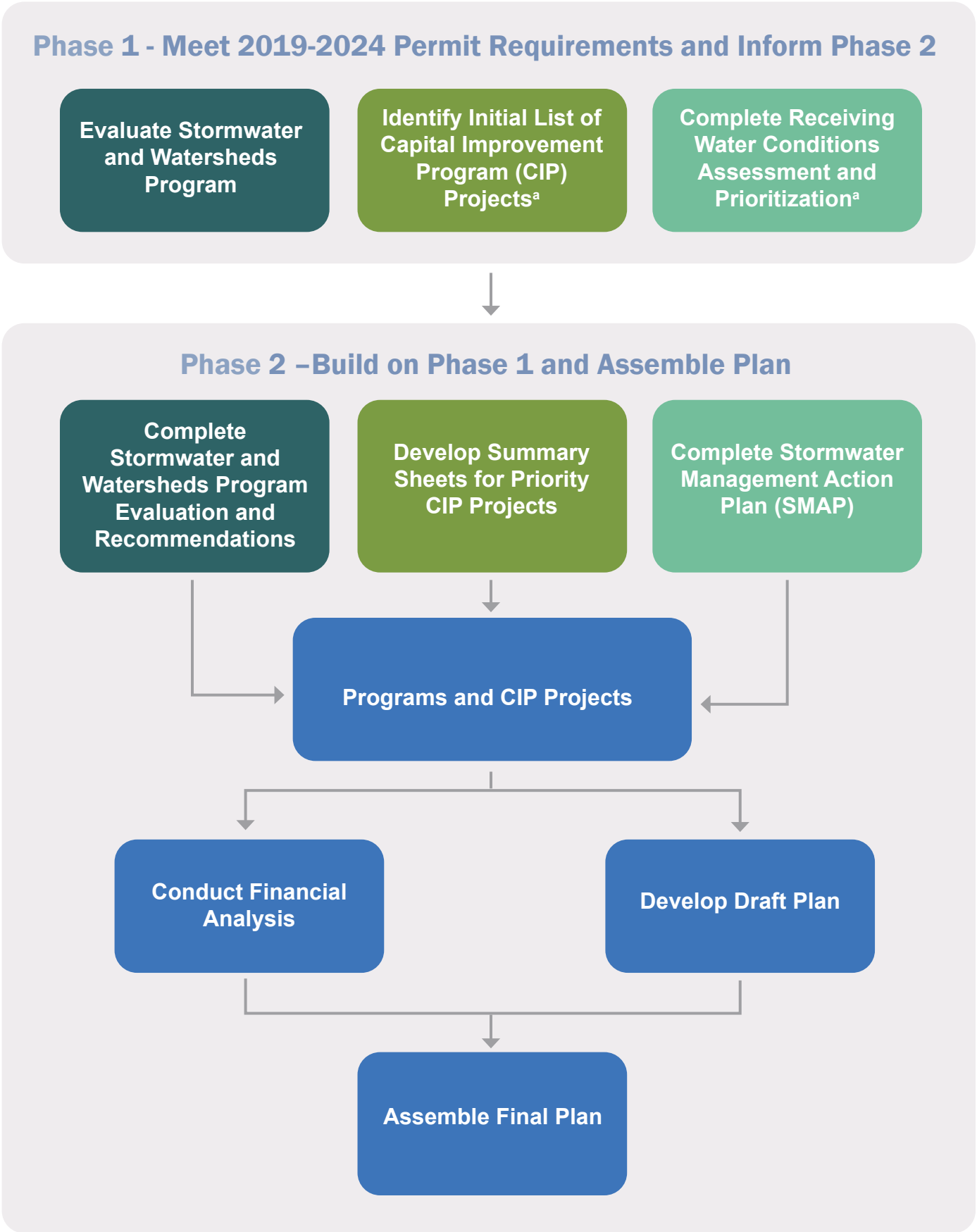
Challenges

The City is operating its stormwater program according to the 2019-2024 Permit (Ecology 2019). Challenges facing the City include meeting more stringent requirements in the 2019-2024 Permit, such as: business source control and inspection program, public education, reporting, watershed planning, and adoption of a new stormwater manual. Additionally, a new NPDES Permit will be issued in 2024 and is expected to have additional requirements.

Lack of dedicated staff time is the primary challenge facing the City. Staff conduct the activities required by the 2019-2024 Permit, track progress, and report to Ecology on an annual basis. Staff also respond to flooding and water quality issues submitted by citizens and conduct inspections during construction, post-construction, and for maintenance of selected stormwater drainage facilities. The City lacks available staff time to manage stormwater capital projects and submit and manage grant applications and funds.

Plan Development

This Plan was developed using the two-phased process that is illustrated below.



[a] *Included public and stakeholder outreach*

2 BACKGROUND

City Watersheds

This chapter summarizes background information of existing conditions, regulations and environmental considerations influencing Plan development and implementation.

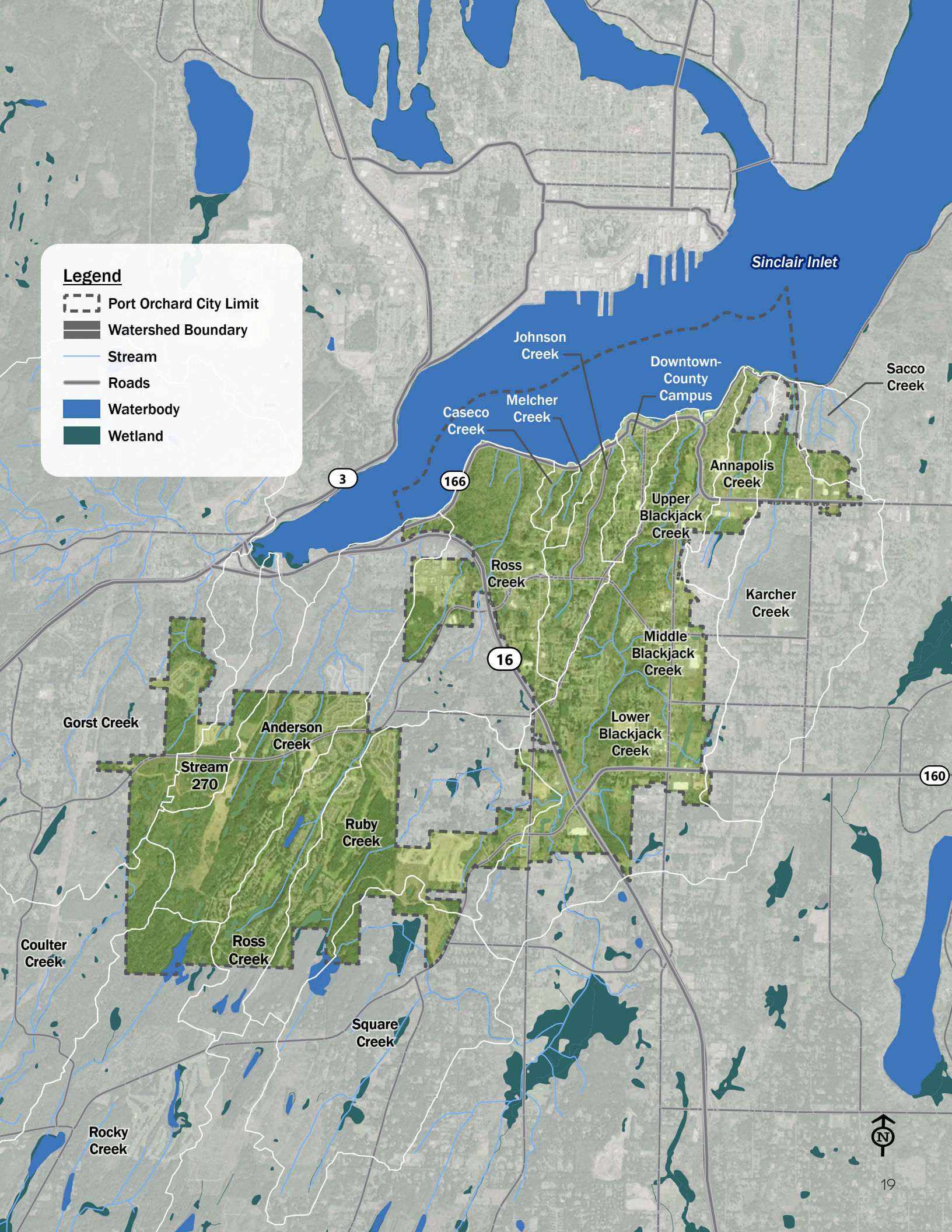
Within the City of Port Orchard, there are 17 distinct watersheds (see Figure 2). These watersheds were delineated and characterized as part of the City's Watershed Inventory and Assessment (Herrera 2022a). The major watersheds (or watersheds with the most jurisdictional control) located within the City include:

- Annapolis Creek
- Downtown County Campus
- Anderson Creek
- Caseco Creek
- Johnson Creek
- Blackjack Creek (including Lower, Middle, and Upper Blackjack Creeks)
- Melcher Creek
- Ross Creek
- Ruby Creek
- Stream 270

The minor watersheds (or watersheds with the least jurisdiction control) located within the City include:

- Karcher Creek
- Coulter Creek
- Rocky Creek
- Sacco Creek
- Square Creek

Figure 1. City Watersheds.


Legend
Port Orchard City Limit
Watershed Boundary
Stream
Roads
Waterbody
Wetland
Sinclair Inlet
Johnson Creek
Downtown-County Campus
Sacco Creek
Melcher Creek
Caseco Creek
3
166
Annapolis Creek
Upper Blackjack Creek
Ross Creek
Karcher Creek
16
Middle Blackjack Creek
Lower Blackjack Creek
Gorst Creek
Anderson Creek
Stream 270
160
Ruby Creek
Coulter Creek
Ross Creek
Square Creek
Rocky Creek
N

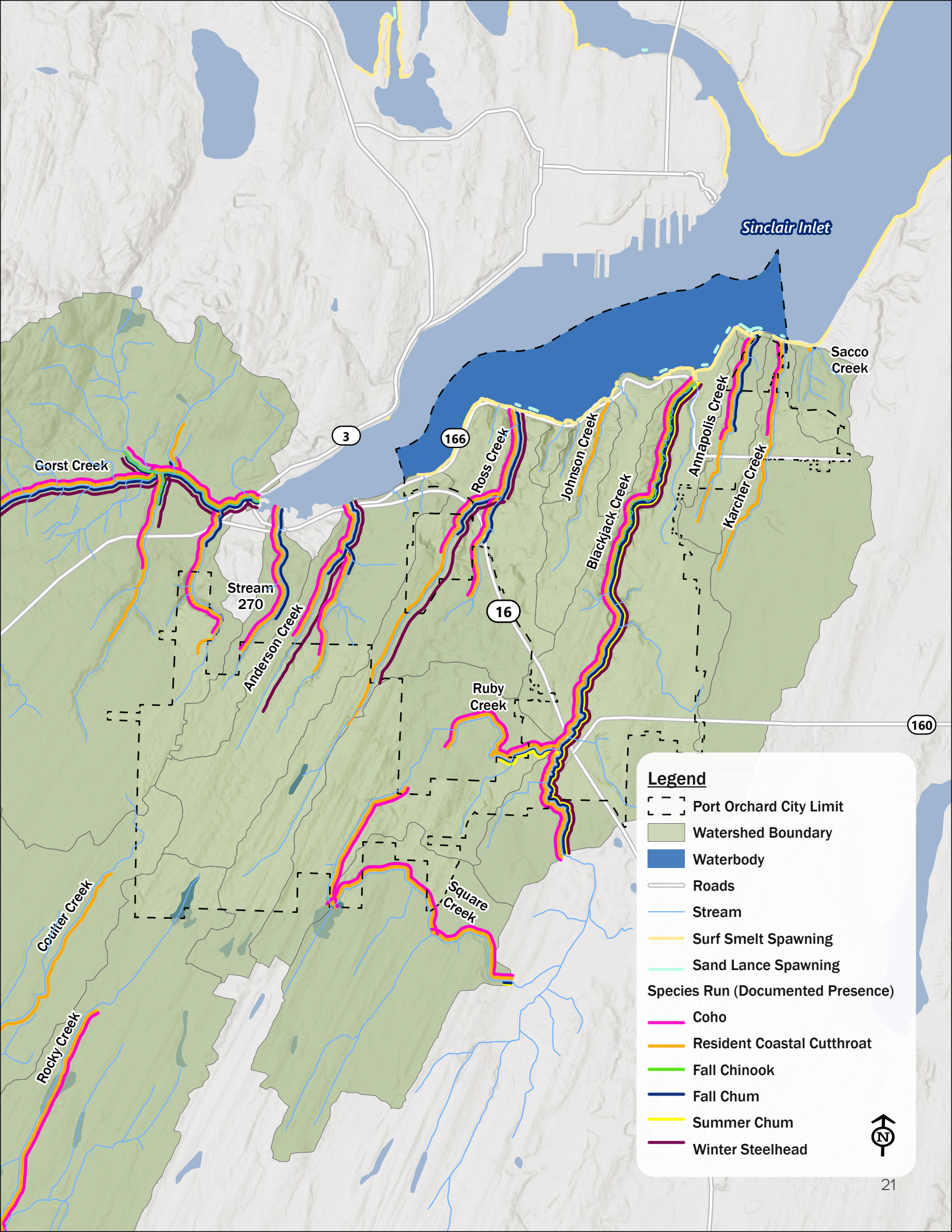
City Watersheds, Continued...

Some watersheds support salmon while others support other aquatic species (see Figure 3). Streams, such as Johnson Creek, Annapolis Creek, Karcher Creek and Stream 270, support up to three salmonid species, while other larger stream systems associated with valued wetlands, such as Lower Blackjack Creek, Anderson Creek, Ross Creek, and Ruby Creek, support a wider variety of salmonid species which may include fall and summer chum, coho, fall chinook and steelhead. Smaller stream systems such as Downtown County Campus, Melcher Creek and Caseco Creek, do not support salmonids and may host other species including sculpin, freshwater eels, and other small stream aquatic species.

Important species that utilize the nearshore marine environment of Sinclair Inlet are forage fish including surf smelt and sand lance (see Figure 3). These small fish serve to provide recreation for the local community in the form of "smelting" during the open season at Ross Point, and provide an essential food source for larger fish, seals, and river otter, to name a few local wildlife often seen from City shorelines. Refer to the City's Watershed Inventory and Assessment (Herrera 2022a) for detailed characteristics of each watershed.

Above: Photo of Johnson Creek.

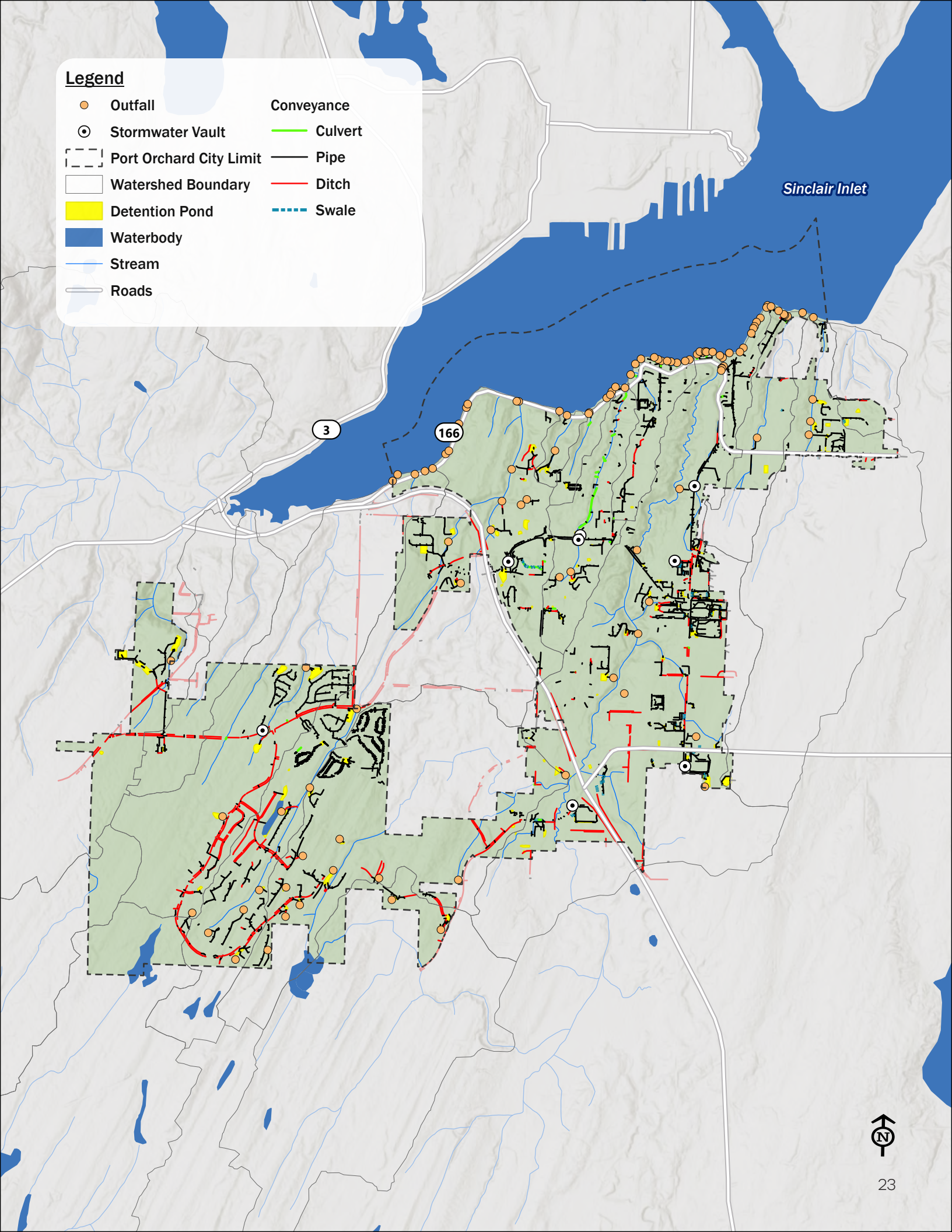
Figure 2. Presence of Key Stream and Nearshore Fish Species in City of Port Orchard Watersheds.


Sinclair Inlet
Sacco Creek
Annapolis Creek
Karcher Creek
Johnson Creek
Blackjack Creek
Ross Creek
Gorst Creek
Stream 270
Anderson Creek
Ruby Creek
Square Creek
Coulter Creek
Rocky Creek
3
166
16
160
Legend
Port Orchard City Limit
Watershed Boundary
Waterbody
Roads
Stream
Surf Smelt Spawning
Sand Lance Spawning
Species Run (Documented Presence)
Coho
Resident Coastal Cutthroat
Fall Chinook
Fall Chum
Summer Chum
Winter Steelhead
N

City Stormwater System

The City stormwater system (inlets, pipes, ditches, vaults, swales, culverts, and ponds) collects runoff from streets, yards, rooftops, and parking lots (see Figure 4). That runoff is discharged through stormwater outfalls to either waterbodies (streams or marine nearshore) or to an adjacent municipality.

Figure 3. City of Port Orchard Stormwater Infrastructure.


Legend
Outfall
Stormwater Vault
Port Orchard City Limit
Watershed Boundary
Detention Pond
Waterbody
Stream
Roads
Conveyance
Culvert
Pipe
Ditch
Swale
Sinclair Inlet
3
166
N

Stormwater Impacts on Watersheds

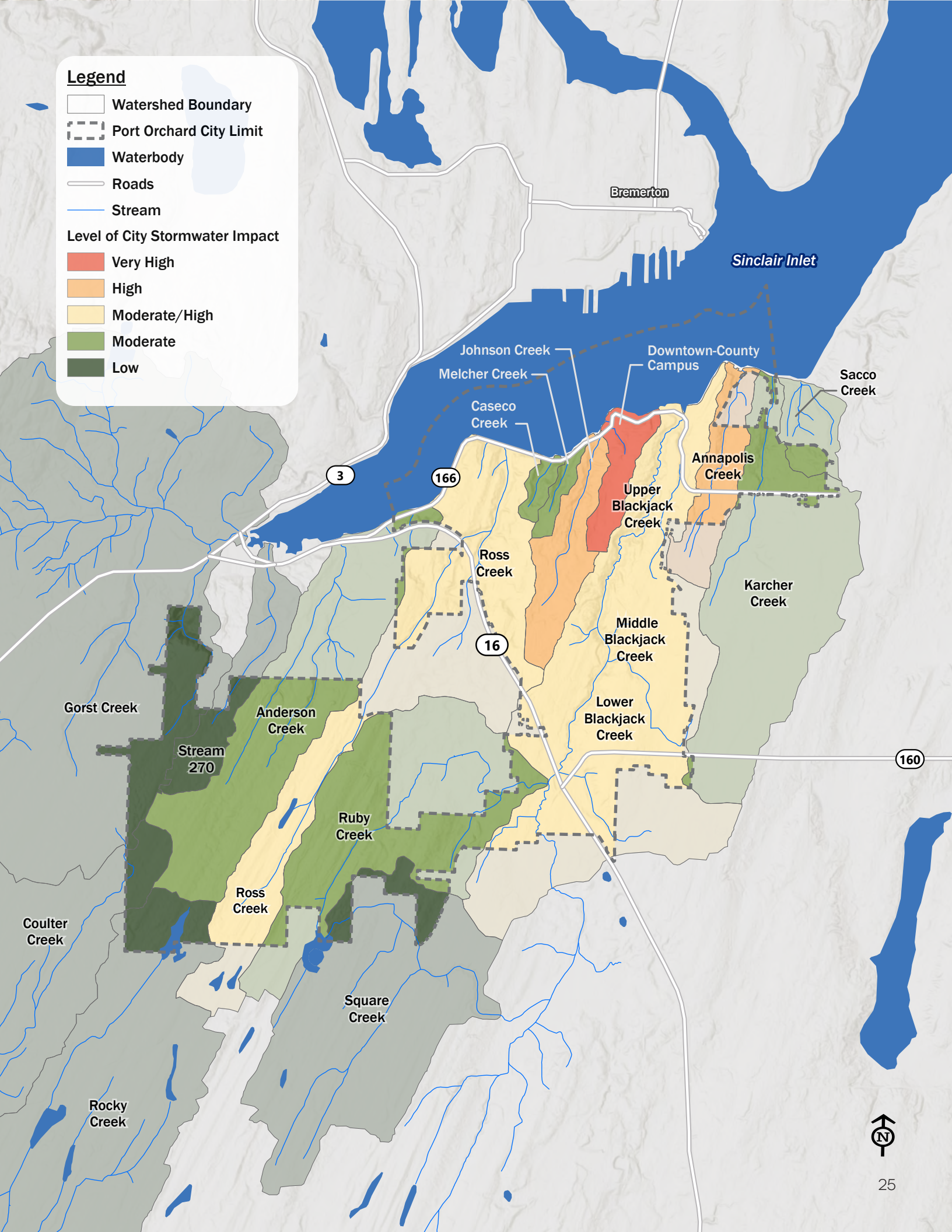
The degree to which the City stormwater system impacts local receiving waters can be categorized from low to high by assessing the dominance of City lands in the watershed and the level of stormwater infrastructure (see Figure 4 and Table 1).

The total percent of impervious lands in a watershed is correlated to the health of receiving waters. The greater the percent impervious lands, the likely greater level of degradation upon water resources. City stormwater influence is highest in Downtown County Campus, Annapolis Creek and Johnson Creek watersheds, and lowest in the more rural or limited City presence in the Square Creek, Stream 270, Gorst Creek, Rocky Creek and Coulter Creek watersheds.

Table 1. Watershed Stormwater Impact Rating

Watershed Name	Level of City Stormwater Impact	Percent City Lands within the Watershed	Percent Watershed Impervious Area	City Outfalls to Watershed Stream	City Outfalls to Sinclair Inlet
Downtown County Campus	Very High	100%	50%	0	10
Annapolis Creek	High	55%	30%	1	4
Johnson Creek	High	100%	29%	2	2
Lower Blackjack Creek	Moderate/High	68%	22%	10	12
Ross Creek	Moderate/High	65%	13%	10	13
Melcher Creek	Moderate	100%	12%	0	3
Caseco Creek	Moderate	100%	12%	1	1
Anderson Creek	Moderate	60%	9%	4	5
Ruby Creek	Moderate	54%	5%	6	NA
Karcher Creek	Moderate	11%	28%	3	0
Sacco Creek	Moderate	22%	18%	0	0
Square Creek	Low	7%	4%	1	NA
Stream 270	Low	45%	3%	0	NA
Gorst Creek	Low	5%	4%	1	NA
Rocky Creek	Low	1%	2%	0	NA
Coulter Creek	Low	1%	<1%	0	NA

Figure 4. Stormwater Influence Upon Watersheds.


Legend
Watershed Boundary
Port Orchard City Limit
Waterbody
Roads
Stream
Level of City Stormwater Impact
Very High
High
Moderate/High
Moderate
Low
Bremerton
Sinclair Inlet
Johnson Creek
Melcher Creek
Caseco Creek
Downtown-County Campus
Sacco Creek
Annapolis Creek
Upper Blackjack Creek
Ross Creek
Karcher Creek
Middle Blackjack Creek
Lower Blackjack Creek
Gorst Creek
Anderson Creek
Stream 270
Ruby Creek
Ross Creek
Coulter Creek
Square Creek
Rocky Creek
3
166
16
160
N

Applicable Policies And Regulations

In addition to addressing drainage and water quality concerns impacted by stormwater runoff, the Surface Water Management Program must also comply with several local, state, and federal regulatory requirements. They include:

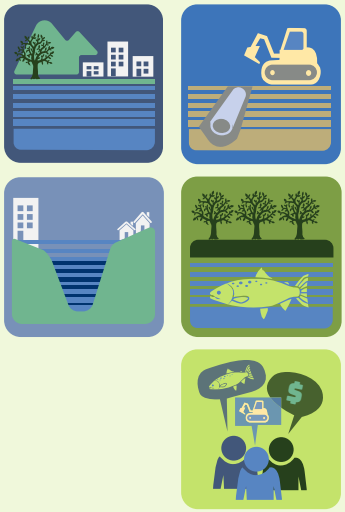
NPDES Permit

The 2019-2024 Permit (Ecology 2019) has broad requirements associated with stormwater runoff and requires the City to develop distinct program components. The first Phase II Permit was issued by Ecology in 2007, reissued in 2012, and again in 2019. The requirements for the City's stormwater program have become more stringent with each new permit issuance. The permit requires that the City's program meet requirements in 11 primary areas:

- Stormwater planning
- Public education and outreach
- Public involvement and participation
- Municipal separate storm sewer system (MS4) permit mapping and documentation
- Illicit discharge detection and elimination (IDDE)
- Controlling runoff from new development, redevelopment, and construction sites
- Operations and maintenance (O&M)
- Source control program for existing development
- Compliance with Total Maximum Daily Load (TMDL) requirements
- Monitoring and assessment
- Reporting requirements

Washington State Growth Management Act (GMA)

The Washington State Growth Management Act (GMA) is a series of statues, which include requirements for the inventory and protection of environmentally critical areas. Environmentally critical areas include steep slopes, wetlands, and streams (Chapter 36.70A of the Revised Code of Washington [RCW]). The GMA also requires fast-growing cities and counties to develop comprehensive plans to ensure environmentally responsible and economically sustainable development, which includes planning for stormwater related capital facilities.



Port Orchard Municipal Code

Several chapters of the Port Orchard Municipal Code (POMC) govern aspects of stormwater management on new development and redevelopment project sites, as well as inspection and maintenance requirements for private stormwater facilities. The primary chapters in the POMC related to surface and stormwater management include:

- Chapter 13.06 – Storm Drainage Utility
- Chapter 15.30 – Illicit Discharge Prevention, Detection, and Elimination
- Chapter 20.140 – Land Disturbing Activity
- Chapter 20.150 – Stormwater Drainage

Ecology Total Maximum Daily Load Implementation Plans

A TMDL cleanup action is required for water bodies that have been identified as impaired on Ecology's Section 303(d) list due to poor water quality. The City implements actions in compliance with the Sinclair/Dyes Inlet Fecal Coliform TMDL as required per Appendix 2 of the 2019-2024 Permit.

Federal Endangered Species Act

The Federal Endangered Species Act (ESA) prohibits the take of all listed species, including a take that could result from the City's stormwater facility operations or private development stormwater management activities that are permitted by the City.

Underground Injection Control Program

The underground injection control (UIC) program is a federal program intended to ensure that underground sources of drinking water are protected from surface discharges to the ground. In the State of Washington, the UIC program is administered by Ecology through Chapter 173-218 of the Washington Administrative Code (WAC). The Guidance for UIC Wells that Manage Stormwater (Ecology 2006) lays out the requirements for UIC wells, and Ecology has included additional guidance in the latest version of the Stormwater Management Manual for Western Washington, released in 2019.

Program Accomplishments

Since the storm drainage utility was founded in 2008, the City of Port Orchard has made significant progress in reducing detrimental effects of stormwater runoff on receiving waters in and around Port Orchard. The City has planned and built capital projects to alleviate drainage problems throughout the City. The City has also provided stewardship opportunities through education and outreach. The City's accomplishments for the past four years are described in chronological order below:

2019

City staff hosted a springtime shoreline cleanup and beach education activity. Participants were encouraged to remove any trash they encountered, as well as recovering and removing any riprap or shoring materials that had fallen on the beach from the upland shoreline. While participants worked, City staff provided educational guidance regarding ecosystem recovery efforts, shoreline biodiversity, effects of stormwater on shoreline habitats and anthropogenic effects on intertidal habitats in general.

City staff provided outreach to assist with stormwater, stream, and habitat education at South Kitsap High School, supporting the school's Career & Technical Education and Science, Technology, Engineering, and Math (CTE/STEM) program. This outreach event included providing demonstrations and descriptions of methods for establishing student stewardship activities relating to monitoring water quality, measuring discharge, and habitat and riparian monitoring methods at Annapolis Creek.

Tremont St. widening; Kitsap Daily News

The City completed the Tremont Street Widening project, which included stormwater detention, oil control, and enhanced treatment to protect critical downstream creeks and waterways (i.e., Johnson and Ross Creeks). Detention was provided by two underground stormwater vaults, a 164-foot-long by 20-foot-wide by 10-foot deep vault on the west end of the project and 100-foot-long by 20-foot-wide by 10-feet-deep vault on the east end, to provide flow control for downstream water bodies and mitigate stormwater issues. Stormwater conveyance was also upgraded to properly accommodate the volume of flow in the area.

2020

The City began developing the Downtown Basin Stormwater Plan. The area surrounding the downtown basin is shown in Figure 6. This plan is developing a roadmap for implementing water quality treatment and flow control best management practices for water quality outcomes in receiving waters. It will include the identification of feasible actions and implementable capital improvement projects that will modernize infrastructure and provide flow control in the downtown and nearshore areas of Port Orchard.

Figure 6. Aerial Image of the City of Port Orchard's downtown Basin (photo courtesy of City of Port Orchard).

2021

City staff participated in the West Sound Partners for Ecosystem Recovery Lead Entity for Water Resource Inventory Area (WRIA) 15 and the Watershed Restoration and Enhancement Committee (WREC) for WRIA 15. This committee connected and engaged citizens and stakeholders in watershed level discussions and actions related to water quality, salmon enhancement, and stormwater. Participation in the WREC was completed in 2021.

Planning for Future Development

Due to the City's proximity to the urban centers of Bremerton and Tacoma and connection to Seattle via ferry transportation, Port Orchard is designated as a "high capacity transit community" by the Puget Sound Regional Council (Puget Sound Regional Council 2020). The Office of Financial Management (OFM) estimates that the City's population is 16,400 people as of 2022 and is expected to grow by much as 36%, or to 28,086 people by 2024 (Kitsap Regional Coordinating Council 2022; OFM 2022). This is one of many reasons why new development within the city will be significant in the coming years.

Land development regulations and subarea planning efforts will be used to address environmental and water resource concerns. New development and redevelopment are and will continue to be regulated in accordance with the most recent flow control and water quality standards in the 2019 Public Works Engineering Standards and defined in POMC Chapter 20.150.06. The City adopts the following by reference:

- 2019 Washington State Department of Ecology Stormwater Management Manual
- 2012 Puget Sound Partnership Low Impact Development (LID) Technical Guidance Manual for Puget Sound
- Definitions, minimum requirements, and adjustment and variance criteria found in Appendix 1 of the 2019-2024 Permit, with exception of the erosivity waiver.

Critical areas are regulated in accordance with POMC Chapter 20.162 addressing wetlands, fish and wildlife habitat conservation areas and related plans, geologically hazardous areas and related reports, frequently flooded areas, and critical aquifer recharge areas.

Recently, the City completed the Ruby Creek Subarea Plan (City of Port Orchard 2022). The plan vision was to foster densification, future growth, walkable neighborhood, and business amenities, while accommodating the natural function of Ruby Creek and Blackjack Creek (see Figure 7). Similar planning efforts within the City will accommodate both people and aquatic species.

Aerial Rendition of the north end of the Ruby Creek Neighborhood.
(image courtesy of City of Port Orchard)

Climate Change

In 2020, the City of Port Orchard collaborated with Kitsap County and the City of Bremerton to develop the Kitsap County Climate Change Resiliency Assessment (Kitsap County 2020). The assessment reviewed and summarized current and future climate change drivers, impacts, and risks for Kitsap County. These projected impacts were grouped into impacts to social and economic systems and biophysical impacts, of which the following are related to this Plan:

- Public infrastructure and support systems (stormwater),
- Hydrology & hydrogeology (hydrologic changes and stream and riverine flooding), and
- Habitat (freshwater and aquatic habitat).

As part of the assessment, specific impacts to the City of Port Orchard were evaluated and have been summarized by the City's stormwater management component in Table 2.

Table 2. Climate Change Impacts.	
STORMWATER MANAGEMENT COMPONENT	**PREDICTED RESPONSE TO CLIMATE CHANGE**
Stormwater Infrastructure	Potential overload, degradation, and damage of stormwater infrastructure from sea level rise and more intense rain storms
Stream Flows	Winter stream flooding will become more frequent Lower spring and summer flows
Groundwater Supply	Groundwater recharge may be affected by hydrologic changes (e.g., increasing temperatures and potential for saltwater intrusion; declining summer flows; low water tables; and sea level rise)
Flood Risk	Higher flood risk for low-lying coastal infrastructure, including stormwater conveyance and facilities
Water Quality	Regionally warmer stream temperatures
Habitat	Cold-water fish species across multiple life-cycle stages will be impacted by hydrologic changes. Possible loss of streamside vegetation Decrease in cooler/oxygenated aquatic habitat Wetland habitats are likely to contract and threaten shelter for juvenile fish and habitats for a variety of species Aquatic benthic invertebrates, amphibians, and salmonids will be impacted and will have downstream ecosystem and food-web impacts

Opposite: Figure 5. Projected 100 Year Marine Flood Extent Under Sea Level Rise Scenarios
Port Orchard Marina (Herrera 2020)

3

CAPITAL IMPROVEMENT PROGRAM

Capital Improvement Program (CIP)

This section summarizes the surface water and stormwater capital improvement program (CIP). The purpose of the CIP is to define capital projects that make progress towards the City's long-term goals including:

Flood Reduction

Groundwater and Surface Water Quality

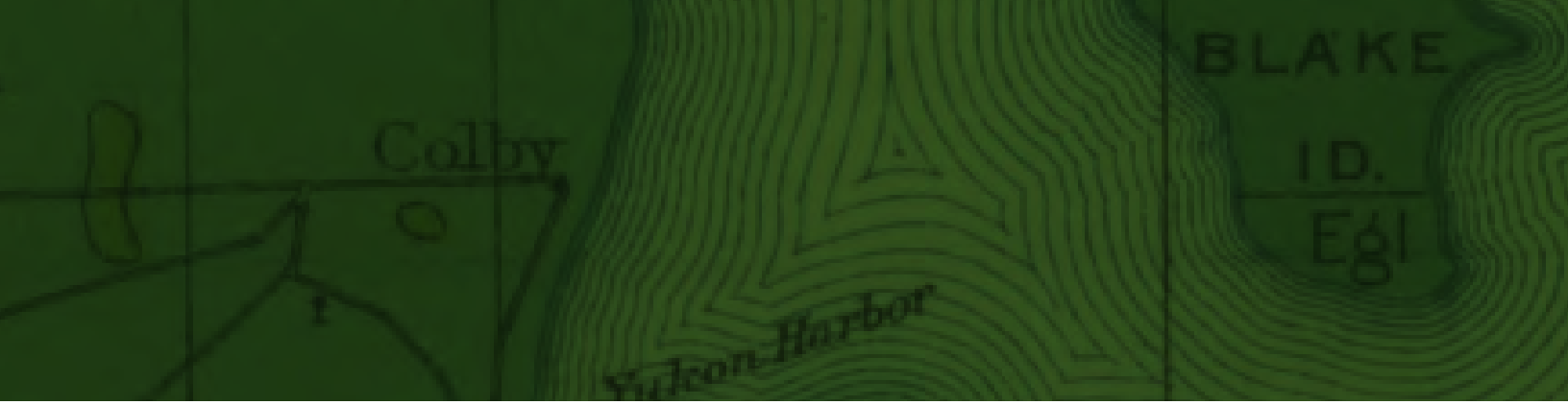
Groundwater and Surface Water Quantity

Habitat Enhancement

Public Participation (Education, Outreach, and Involvement)

Infrastructure Operations & Maintenance

Comprehensive Planning, Administration, and Funding



Problem and Project Identification

Previous surface water and stormwater plans and input from City staff were used to develop an initial list of problems to be addressed during work on this Plan. Surface and stormwater plans reviewed included the following:

- 2018 Port Orchard Comprehensive Plan (City of Port Orchard 2018)
- Blackjack Creek Watershed Assessment and Protection and Restoration Plan (ESA 2017)
- Ruby Creek Subarea Plan (City of Port Orchard 2022)
- Downtown Basin Stormwater Plan (Reid Middleton 2020)
- 2018 Annapolis Creek Culvert Replacement – 30% Design & Permitting Coordination Report (Reid Middleton 2018)
- Blackjack Creek Floodplain Restoration Project Engineering Design Plans (City of Port Orchard 2020)

Additional problems were identified by surveying City staff through Esri's ArcGIS Survey123 and hosting workshops with the City. Problems were evaluated using desktop methods and field evaluation to assess site-specific opportunities and constraints. Potential capital projects were developed to address the problems. The initial list of projects, problem descriptions, and solutions are provided in Appendix B.

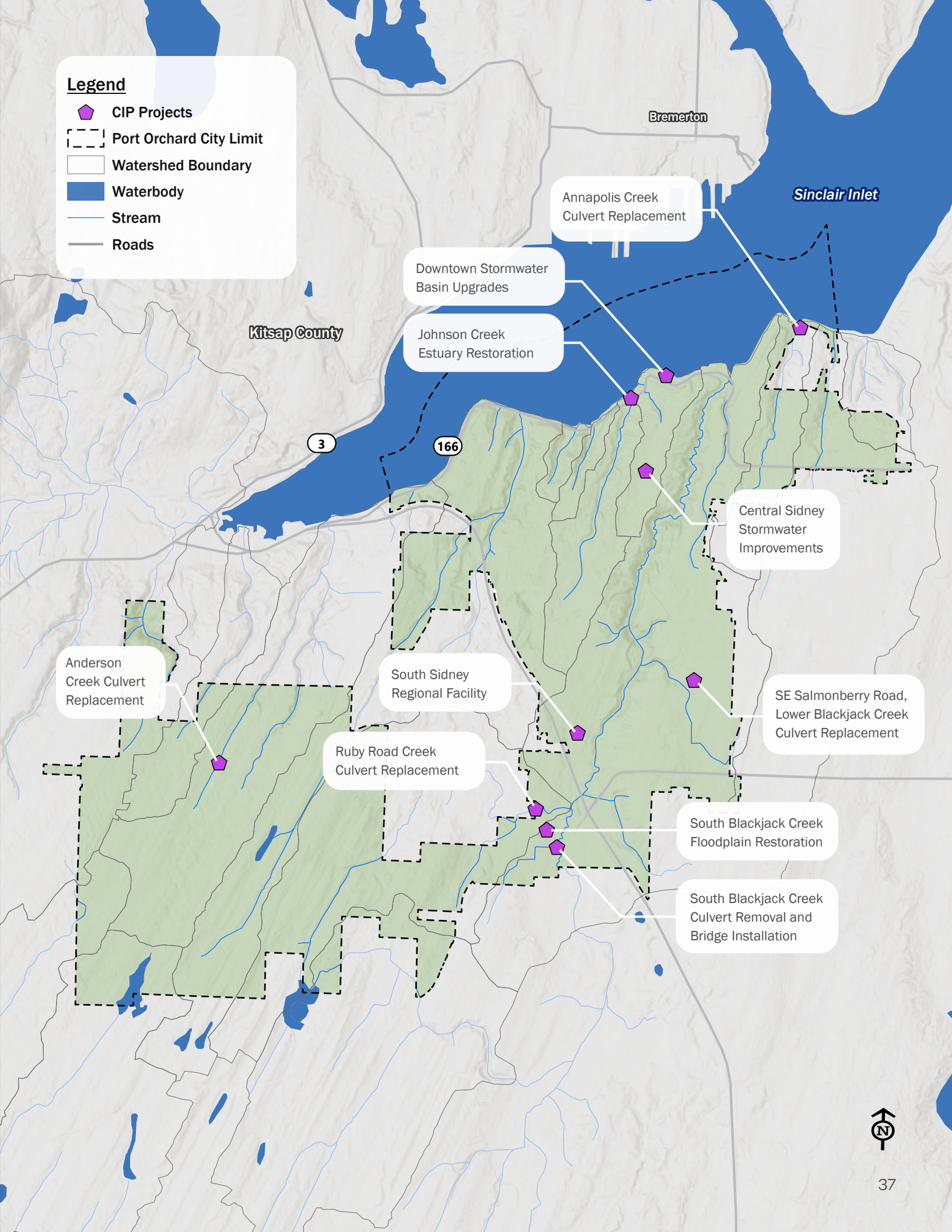
Project Prioritization

The initial surface water and stormwater CIP project list was ranked by City staff to determine the top 10 projects. The top 10 projects are shown in Figure 8. Once the top 10 projects were chosen, these projects were prioritized using a quantitative process that considered further input from City staff, review of background documents, and field reconnaissance of existing problems. This prioritization was then used to develop an implementation schedule that emphasized early completion of the projects providing the greatest benefit. An overview of the CIP project prioritization and goals is included in Table 3. Detailed prioritization results and CIP project summary sheets are provided in Appendix B. The CIP project implementation schedule is included in the Plan Implementation section of this Plan.

Table 3. Prioritized Projects and Ranking

RANK	PROJECT NAME	GOALS	SCORE
1	South Sidney Regional Facility		70
	Johnson Creek Estuary Restoration		
3	Downtown Basin Stormwater Upgrades		55
	South Blackjack Creek Floodplain Restoration		
	Central Sidney Stormwater Improvements		
6	Annapolis Creek Culvert Replacement		45
7	SE Salmonberry Road, Lower Blackjack Creek Culvert Retrofit		40
9	Ruby Creek Culvert Replacement		35
	South Blackjack Creek Culvert Removal and Bridge Installation		
10	Anderson Creek Culvert Replacement		30

Opposite: Figure 6. Top 10 Capital Projects.


Legend
CIP Projects
Port Orchard City Limit
Watershed Boundary
Waterbody
Stream
Roads
Bremerton
Sinclair Inlet
Kitsap County
3
166
Annapolis Creek Culvert Replacement
Downtown Stormwater Basin Upgrades
Johnson Creek Estuary Restoration
Central Sidney Stormwater Improvements
Anderson Creek Culvert Replacement
South Sidney Regional Facility
SE Salmonberry Road, Lower Blackjack Creek Culvert Replacement
Ruby Road Creek Culvert Replacement
South Blackjack Creek Floodplain Restoration
South Blackjack Creek Culvert Removal and Bridge Installation
N

4

STORMWATER MANAGEMENT PROGRAM EVALUATION AND RECOMMENDATIONS

Levels of Service

This chapter summarizes surface water and stormwater recommendations for the City's stormwater management program. Recommendations are organized by the long-term goals and levels of service defined below.

The City has identified three levels of service for this Plan: Level 1, Level 2, and Level 3. Level 1 recommendations are shown for all long-term goals. Levels 2 and 3 are not included when no additional recommendations were identified. The levels of service are defined as follows:

Level 1

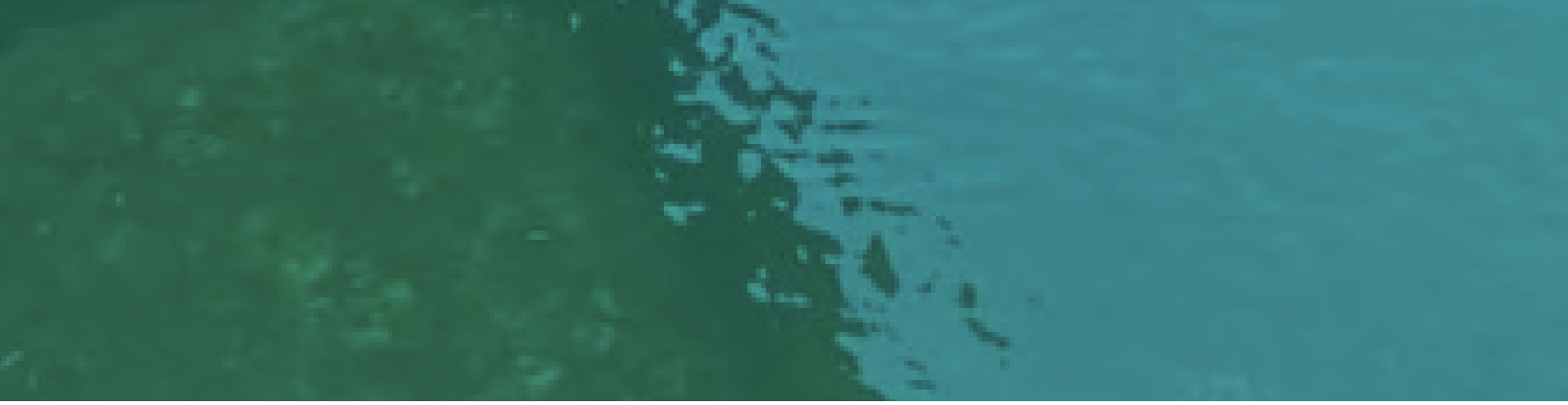
Represents activities needed to meet 2019-2024 Permit requirements, potential future permit requirements, and essential program activities.

Level 2

Includes everything in Level 1 and several additional improvements to expand public education and stewardship opportunities, implement the new asset management program, and increase staffing to adequately inspect construction projects and private stormwater facilities to improve environmental protection.

Level 3

Includes everything in Levels 1 and 2 and represents staffing and funding to move towards achieving the City's goals. This level of service would result in the greatest benefits for the community and the environment, but would have the highest cost. Level 3 includes expanding public involvement and environmental monitoring activities.



Recommendations

Recommendations are organized by the long-term goals and levels of service previously defined in this Plan. Detailed tables of recommendations with associated funding and staffing requirements are provided in City of Port Orchard Stormwater and Watersheds Program Evaluation and Recommendations (Herrera 2022c) and in Appendix A. Implementation of these recommendations are discussed in the Plan Implementation section of this Plan.

Recommendations Continued...

Flood Reduction

Level 1:

- Design and construct upgrades to the existing conveyance infrastructure

Groundwater and Surface Water Quality

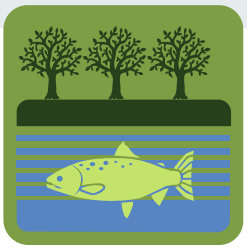
Level 1:

- Respond to spills and water quality complaints
- Develop Pollution Control Program Plans (Quality Assurance Project Plan [QAPP] equivalent) to monitor stream health and provide water quality status updates
- Make annual payments to the collective fund for S8 Monitoring and Assessment
- Seek opportunities to participate with Kitsap County and other local jurisdictions in an integrated and coordinated monitoring assessment program
- Provide information as requested for effectiveness and source identification studies that are under contract with Ecology as active Stormwater Action Monitoring (SAM) projects
- 0.25 FTE for Water Quality Technician

Groundwater and Surface Water Quantity

Level 1:

- Design and construct upgrades to the existing conveyance infrastructure



Habitat Enhancement

Level 1:

- Conduct outreach on private property tree preservation and wetland buffers within Lower Blackjack Creek Catchment C

Mapping and Asset Management

Level 1:

- Update the City's MS4 map on an ongoing basis, including all known connections from the MS4 to a privately owned stormwater system
- Collect size and material data for known MS4 outfalls during the normal course of inspections and maintenance and update electronic records
- Locate and map additional outfall
- Additional 0.25 FTE for geographic information systems (GIS) Technician

Level 2:

- Includes all recommendations in Level 1
- Select and implement a computer maintenance management system (CMMS)
- Additional 0.50 FTE for Asset Management Specialist

Public Participation (Education, Outreach and Involvement)

Level 1:

- Review and update existing public education materials as needed
- Develop materials for one new target audience and subject area annually
- Partner with West Sound Stormwater Outreach Group (WSSOG) on implementing social marketing campaigns
- Host and/or advertise volunteer events related to stewardship opportunities and provide opportunities for public input
- Continue collaborations with local builders' associations and participating in West Sound Partners for Ecosystem Recovery (WSPER)
- 0.25 FTE for Education Specialist

Level 2:

- Develop an education and outreach plan for commercial and private facility owners related to LID principles and practices
- Expand the partnership with South Kitsap School District
- Additional 0.25 FTE for Education Specialist (0.50 FTE total)

Level 3:

- Develop materials for two additional target audiences and two additional subject areas annually (three target audiences and three subject areas total when combined with the Level 1 tier)
- Create a volunteer stream team
- Additional 0.50 FTE for Education Specialist (1.0 FTE total)

Pollutant Source Control

Level 1:

- Update the City's website with pollution control best management practice (BMP) resources
- Perform field screening and tracking of illicit connections, illicit discharges, and spills
- Continue to implement spill hotline and staff training program
- Report illicit discharge data to Ecology using WQWebIDDE
- Review and update public education materials gathered by the Business Inspection Group (BIG) to create a basic set of resources for the City's source control program
- Provide enhanced source control technical assistances to businesses within the Lower Blackjack Creek Catchment C
- 0.25 FTE for Source Control Program Coordinator

Level 2:

- Increase staff support to screen outfalls on an annual basis
- Develop additional public education materials to supplement those gathered by the BIG to create a broader set of resources for the City's source control program

Infrastructure Operations & Maintenance

Level 1:

- Continue to implement a program to verify adequate long-term O&M of stormwater treatment and flow control BMPs/facilities
- Use a third-party contractor to conduct private facility inspections
- Document inspections and enforcement actions for private stormwater flow control and treatment BMPs/facilities
- Perform spot checks and inspections after storms
- Inspect catch basins and maintain as needed
- Conduct additional outfall inspections
- Clean targeted catch basins in Lower Blackjack Creek Catchment C
- Continue to implement staff training program

Level 2:

- Have a dedicated inspector to conduct private facility inspections
- Inspect and maintain additional catch basins
- 0.50 – 1.0 FTE for O&M Technician (0.50 FTE in 2024, 1.0 FTE in 2025-2028)

Development Practices

Level 1:

- Continue to implement stormwater plan review, inspection, and escalating enforcement processes
- Refine and improve inspections and enforcement procedures
- Conduct annual review of stormwater standards
- Continue to implement staff training program
- Add engineering capacity to the capital project design team to assist with stormwater retrofit projects and upcoming SMAP implementation
- Develop a policy and standards for considering more intense future precipitation and sea level rise in stormwater capital improvement projects
- 0.25 FTE for Engineer

Level 2:

- Have a dedicated inspector to conduct construction inspections
- 1.0 FTE for Construction Inspector
- Increase engineering capacity for the capital project design team to assist with stormwater retrofit projects and upcoming SMAP implementation
- Additional 0.25 FTE for Engineer (0.50 FTE total)

Level 3:

- Increase engineering capacity for the capital project design team to assist with stormwater retrofit projects and upcoming SMAP implementation
- Develop a policy and standards for new and redevelopment projects to design for more intense future precipitation
- Additional 0.25 FTE for Engineer (0.75 FTE total)

Comprehensive Planning, Administration, and Funding

Level 1:

- Continue to meet regularly to direct planning, development, and implementation of the City's Stormwater and Watersheds Comprehensive Plan, SMAP development, and continue to review and implement LID code updates
- Implement the SMAP activities
- Prepare annual reports summarizing coordination with long-range planning efforts
- Annually assess administrative or regulatory barriers to implementation of LID principles or LID BMPs
- 0.25 FTE for Planner

Marine Park Mural, Port Orchard Waterfront

5

WATERSHED PLANNING

City Watersheds

The 2019-2024 Permit required the City to conduct watershed planning using a process defined by the permit as "Stormwater Management Action Planning" (SMAP). The SMAP process required the City to view watersheds through the lens of stormwater impacts to receiving water health and actions to protect or improve these water resources.

This planning was completed in three distinct steps:

- Develop an inventory of watershed characteristics, including water resource conditions, aquatic life and community uses, stormwater influence, and social equity (Herrera 2022a),
- Apply a prioritization process to identify the highest priority watershed (Herrera 2022b), and
- Complete an "Action Plan" that includes retrofit projects, program enhancements, and land management strategies, associated costs, and schedule (Appendix C).

The goal of SMAP was to identify a city watershed where investments in stormwater management are most likely to lead to environmental improvement.

Artwork at Blackjack Creek estuary

City Watersheds Continued...

Marine nearshore and stream habitat conditions within major watersheds informed the prioritization process (See Table 4 and Figure 9). As a guiding principle, water resources with moderate or good habitat conditions for salmon and nearshore forage fish would benefit from water quality and flow control actions. However, the City also intends to invest in watersheds with poor habitat conditions to alleviate flooding and address water quality issues, where feasible.

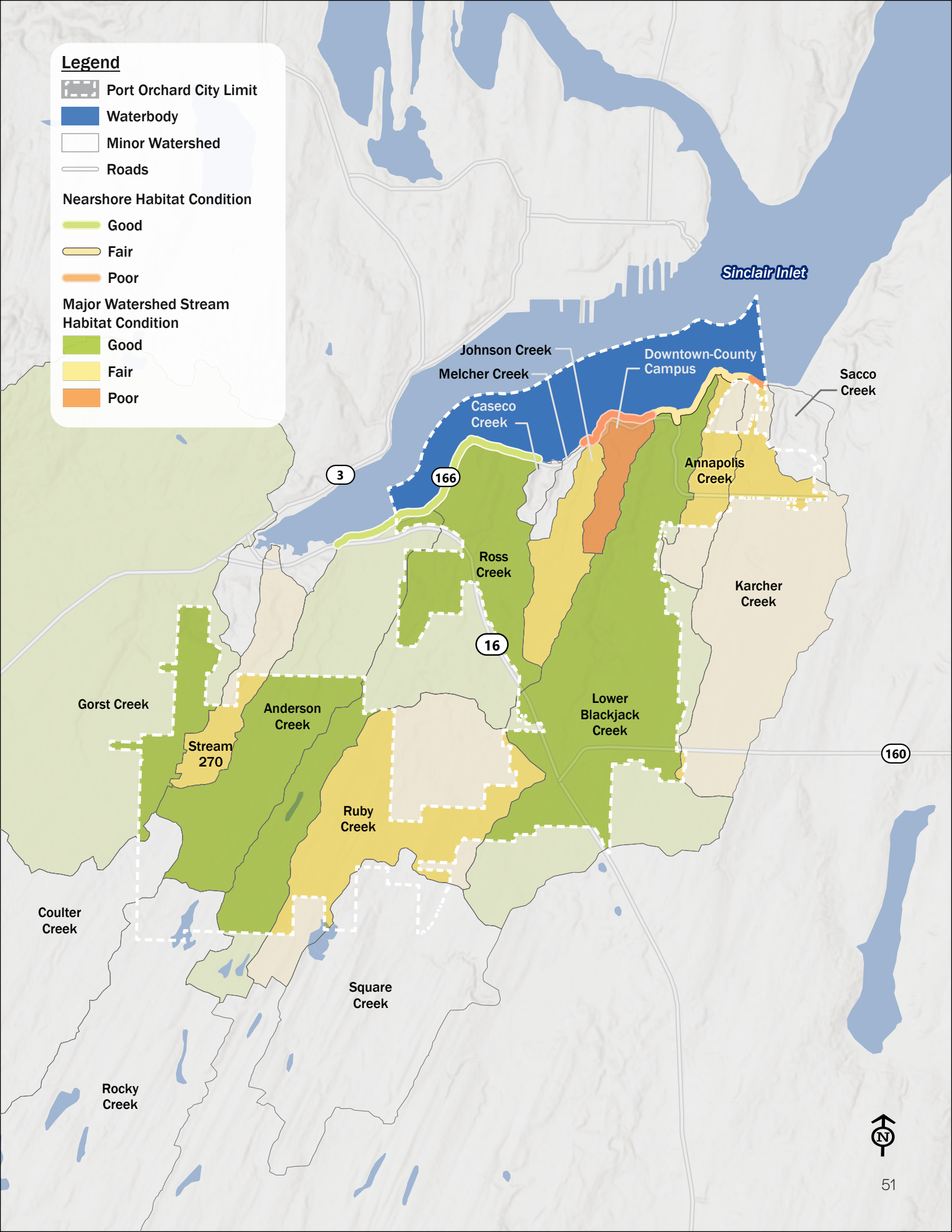
Table 4. Summary Of Major Watershed Habitat Conditions for Salmon and Forage Fish

Major Watershed	Salmon Life Cycle support			Salmon and Forage Fish in the Marine Nearshore
	Major Watershed	Spawning	Rearing	Sinclair Inlet Nearshore
Anderson Creek (Gorst)	Good	Good	Good	Good
Annapolis Creek	Poor	Good	Fair	Fair
Downtown County Campus	Poor	Poor	Poor	Poor
Gorst Creek	Fair	Good	Good	Fair
Johnson Creek	Poor	Good	Good	Poor
Karcher Creek	Poor	Good	Good	Poor
Lower Blackjack	Good	Good	Good	Fair
Ross Creek	Fair	Fair	Fair	Good
Ruby Creek	Good	Fair	Poor	NA*
Stream 270	Poor	Good	Good	NA

*NA = Not Applicable,

* = City lands within Ruby Creek and Stream 270 Watersheds are not directly connected to the marine nearshore

Figure 7. Nearshore and Major Watershed Stream Habitat Condition


Legend
Port Orchard City Limit
Waterbody
Minor Watershed
Roads
Nearshore Habitat Condition
Good
Fair
Poor
Major Watershed Stream Habitat Condition
Good
Fair
Poor
Sinclair Inlet
Johnson Creek
Melcher Creek
Caseco Creek
Downtown-County Campus
Sacco Creek
Annapolis Creek
Ross Creek
Karcher Creek
Gorst Creek
Anderson Creek
Stream 270
Lower Blackjack Creek
Ruby Creek
Coulter Creek
Square Creek
Rocky Creek
3
166
16
160
N

Lower Blackjack Creek Watershed

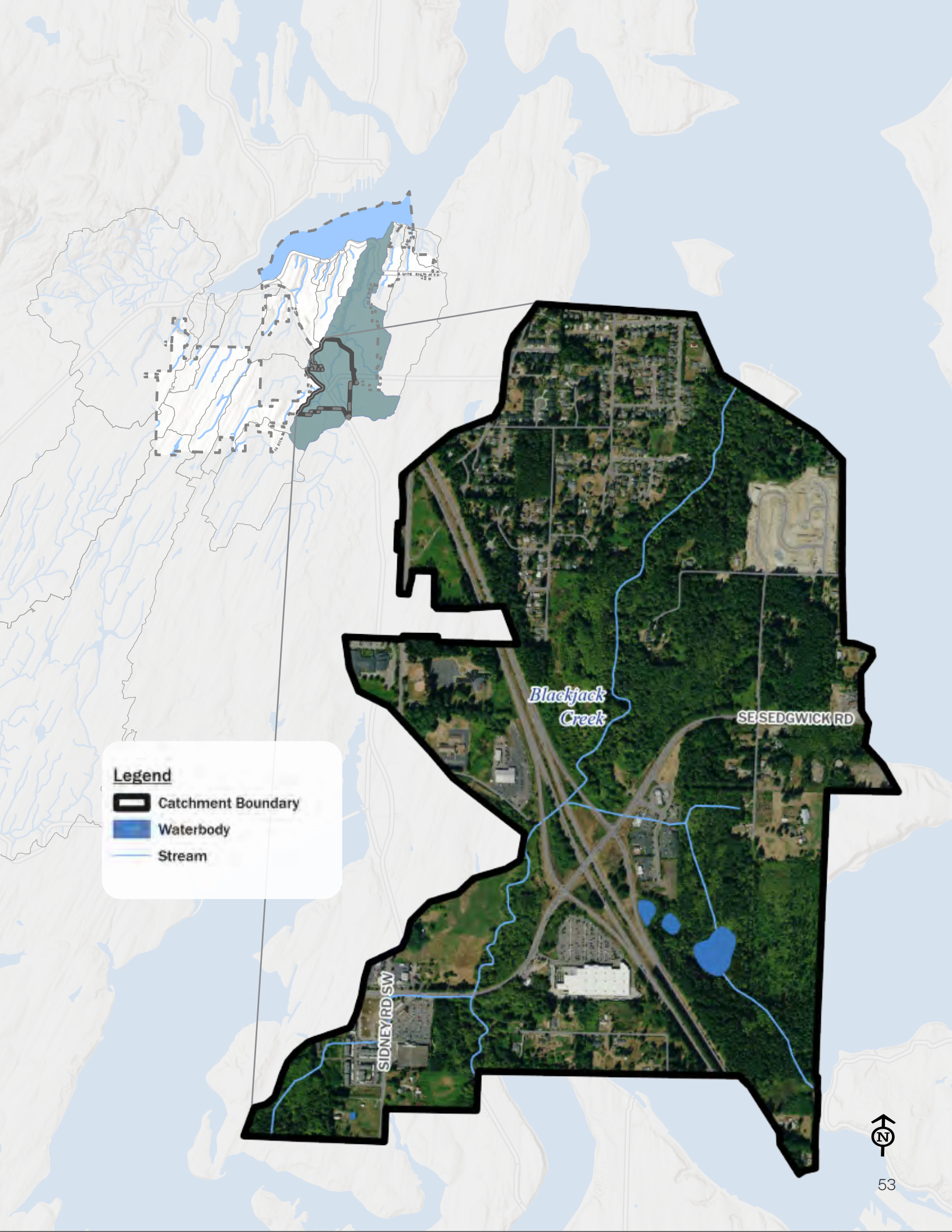
Lower Blackjack Creek watershed was selected as the highest priority watershed based on the following characteristics:

- High receiving water use, including use by multiple salmonid species
- Moderate level of development and future growth
- Good water quality and habitat condition
- Higher jurisdiction control
- Promotes other plans and projects, most notably the Blackjack Creek Watershed Assessment and Restoration Plan (ESA 2017).

Upon review with City staff, Catchment C (Figure 8) in the watershed was selected for the SMAP (Appendix C). The selected catchment was chosen due to the greater concentration of older development for retrofit opportunities.

Above: Blackjack Creek Floodplain

Right: Figure 8. City of Port Orchard Lower Blackjack Creek Catchment C


Legend
Catchment Boundary
Waterbody
Stream
Blackjack Creek
SE SEDGWICK RD
SIDNEY RD SW
N

6 PLAN IMPLEMENTATION

This section presents detailed information on implementing the recommended surface water and stormwater program activities presented in Stormwater Management Program Evaluation and Recommendations section and the capital projects described in Capital Improvement Program section. The major components of plan implementation include the completion of CIP projects, addressing staffing and resource needs, interdepartmental collaboration, interagency collaboration, and utility finances.

CIP Plan Implementation

The CIP projects are described in the Capital Improvement Program section and additional details on each project can be found in the project summary sheets (Appendix B). Table 5 presents an implementation schedule that aligns with the Level 1 level of service. Additional levels of services, which implement some CIP projects on accelerated schedules, are included in Appendix B.

This schedule balances project priority, project complexity, and coordination with other projects. Capital projects are reviewed regularly by the City and the implementation schedule shown in Table 5 is subject to change based on evolving regulatory requirements, City priorities, and available resources.

Table 5. Capital Improvement Program Implementation Schedule[a].

Project Name	2023[b]	2024	2025	2026	2027	2028	out years[c]
Annapolis Creek Culvert Replacement		$400,000	$800,000				
South Sidney Regional Facility		$700,000		$2,800,000			
Downtown Basin Stormwater Upgrades					$1,760,000	$1,100,000	$982,000
Ruby Creek Culvert Replacement					$400,000	$1,200,000	
Johnson Creek Estuary Restoration							$2,500,000
Ongoing Conveyance System Improvement Program	$100,000	$100,000	$100,000	$100,000			$13,000,000
SE Salmonberry Road, Lower Blackjack Creek Culvert Retrofit							$300,000
South Blackjack Creek Floodplain Restoration							$7,000,000
South Blackjack Creek Culvert Removal and Bridge Installation							$1,600,000
Central Sidney Stormwater Improvements							$4,000,000
Anderson Creek Culvert Replacement							$1,600,000
TOTAL	$100,000	$1,200,000	$900,000	$2,900,000	$2,160,000	$2,300,000	$30,982,000

[a] *All costs are in 2022 dollars.*

[b] *In 2023, $100,000 in capital funding is scheduled for Ongoing Conveyance System Improvement Program.*

[c] *The projects listed in the 'out years' column are scheduled after the six-year planning period.*

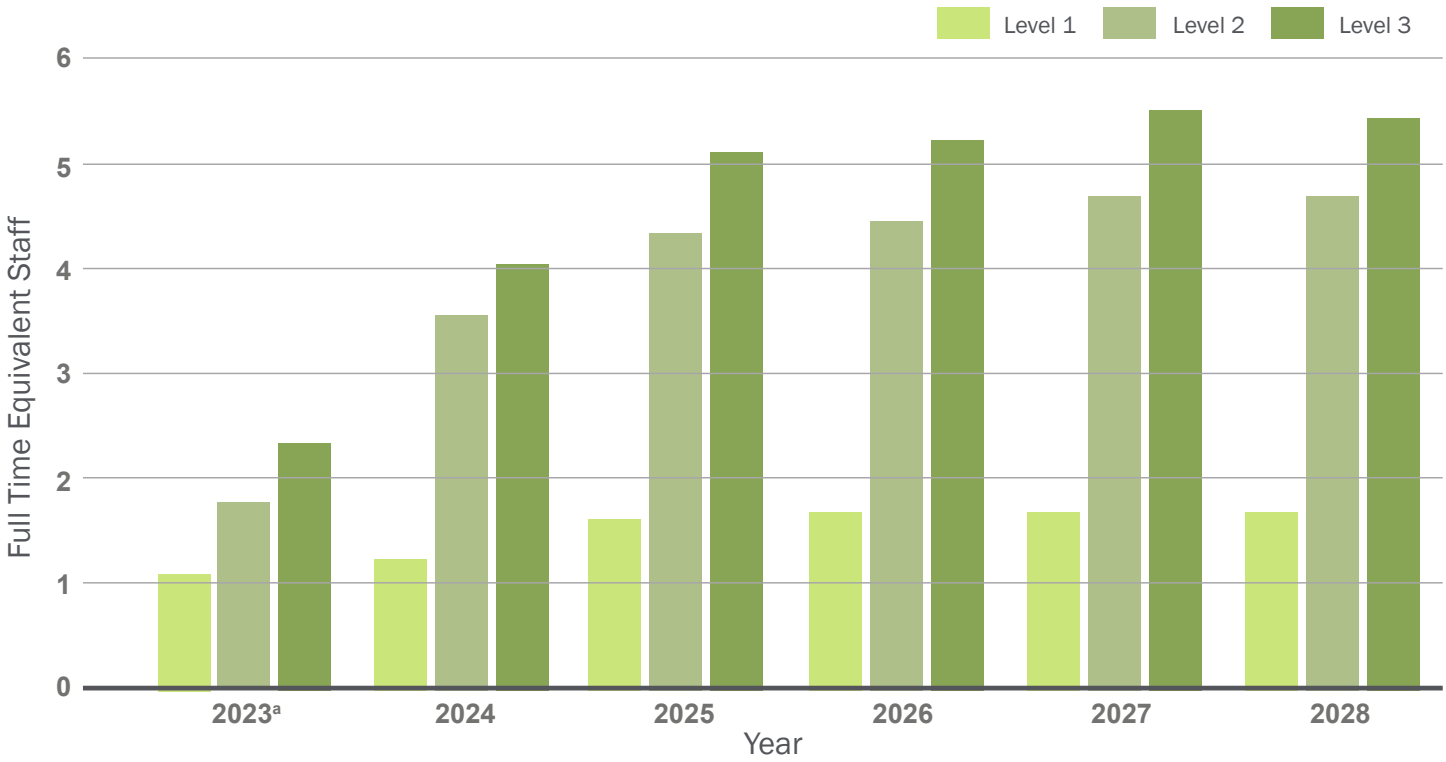
Staffing and Funding Needs

Under the current level of staffing, City staff can address surface water and stormwater problems that arise on a daily basis and troubleshoot specific issues that arise with development project reviews. However, they are not fully able to perform activities that would enable continual improvement of the City's stormwater management program. Current staffing levels will not be adequate to meet the rest of the requirements of the 2019–2024 Phase II Permit and make progress towards long-term goals defined as part of this Plan. The activities listed in the Stormwater Management Program Evaluation section of the Plan will require additional staffing and funding.

Below are the number of full time equivalents (FTEs) and funding that are recommended for each level of service (see Figure 11 and Tables 6 and 7). Additional staffing and funding will be needed in Level 2 to support the City's source control, private facility inspection, education and outreach, asset management, and O&M programs. In addition to the staffing and funding needed for Level 2, Level 3 includes an increase in education and outreach, and capital planning support.

It should be noted that these recommendations start in 2023, but no new staffing and funding is included in the financial analysis for 2023. Refer to the Financial Analysis section for further information about the rate impacts of implementing the levels of service. Detailed estimates of staffing and funding needs can be found in Appendix A.

Figure 9. Levels of Service and Full Time Equivalents.



[a] *No new staffing in 2023 is included in the financial analysis*

Table 6. Staff FTE Summary by Year and Tier

Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	2023[a]	2024	2025	2026	2027	2028
Level 1 Total	1.09	1.23	1.60	1.68	1.68	1.68
Level 2 Total	1.84	3.54	4.35	4.45	4.70	4.70
Level 3 Total	2.34	4.04	5.12	5.20	5.51	5.45

Table 7. Funding Summary by Year and Tier

Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	2023[b]	2024	2025	2026	2027	2028
Level 1 Total	$10,000	$10,000	$60,000	$10,000	$10,000	$110,000
Level 2 Total	$30,000	$30,000	$60,000	$10,000	$10,000	$150,000
Level 3 Total	$30,000	$30,000	$60,000	$10,000	$110,000	$250,000

[a] *No new staffing in 2023 is included in the financial analysis*

[b] *No new funding in 2023 is included in the financial analysis*

Financial Analysis

The activities and projects listed in this section would be funded primarily by revenue from the storm drainage utility. A financial analysis was conducted to define utility rate adjustments that are necessary to implement the levels of service listed in this Plan. During the financial analysis, the City evaluated the regulatory needs and stormwater-related issues facing the City to find a balance between level of service and increased utility rates. Table 8 includes the monthly rate per impervious surface unit (ISU) for the six-year planning period by level of service and the change (increase) from the previous year's monthly rate. An ISU is defined as one residential unit or 3,000 impervious square feet on non-residential parcels (e.g., commercial, multi-family).

The full utility rate study report is included in Appendix D. The report documents assumptions for programmatic and capital project implementation for all three levels of service and includes monthly rates per ISU for years 2023 to 2041.

Table 8. Monthly Rate per Impervious Surface Unit by Level of Service

Monthly Rate per Impervious Surface Unit	2023	2024	2025	2026	2027	2028
Level 1	$14.00	$16.94	$20.50	$24.80	$25.55	$26.31
Change to Monthly Rate		$2.94	$3.56	$4.30	$0.75	$0.76
Level 2	$14.00	$18.34	$24.03	$31.47	$32.42	$33.39
Change to Monthly Rate		$4.34	$5.69	$7.44	$0.95	$0.97
Level 3	$14.00	$20.37	$29.64	$43.12	$44.42	$45.75
Change to Monthly Rate		$6.37	$9.27	$13.48	$1.30	$1.33

The City is interested in considering a capital facilities charge (CFC) for stormwater, which would recover a proportionate share of the cost of existing and future system assets from new customers as growth occurs. The City already has CFCs for water and wastewater utilities. Table 9 presents the maximum defensible CFC that can be implemented by the City for each level of service. City Council could opt to adopt a lower CFC than shown in Table 9.

Tremont Street Widening Project, Courtesy City of Port Orchard, Public Works Dept.

Table 9. Capital Facility Charge by Level of Service

Level of Service	Capital Facility Charge
Level 1	$2,469
Level 2	$3,087
Level 3	$3,914

Lastly, the City should align its monthly rate and CFC choices. For example, if the City Council adopts a rate plan supporting the revenue requirement for Level 1, it should not adopt a CFC that aligns with Levels 2 or 3.

Linkages to Other City Programs

Interdepartmental Collaboration

The City's stormwater management program is led by staff in the Public Works Department. Plan implementation will require contributions from staff in the Public Works Operations and Maintenance, Engineering, Community Development, and Finance departments.

Image from Kitsap Conservation District

Interagency Collaboration

To address ongoing regional efforts, the City should continue to work with regional stakeholder groups and local governments in shared drainage basins to manage and treat stormwater effectively. Below are agencies and regional programs related to implementing program elements.

Comprehensive Stormwater Planning

- Coordinating with the Cities of Bremerton, Bainbridge Island, Poulsbo, and Kitsap County on the Dyes/Sinclair Inlets Fecal Coliform TMDL Implementation Plan
- Coordinating with the City of Bremerton, Kitsap County, and Pierce County on potential future Stormwater Management Action Planning for shared drainage basins

Public Education and Public Involvement

- Coordinating with the West Sound Stormwater Outreach Group (WSSOG) on regional messaging and programs
- Coordinating with the Kitsap Conservation District on potential future efforts including the homeowner rain garden cost share program
- Coordinating with the South Kitsap School District on a school stormwater curriculum and field visits

Capital Improvement Projects and Programs

- Coordinating with the Suquamish Tribe and other relevant tribes on review of salmon habitat projects
- Coordinating with the West Sound Partners for Regional Recovery on prioritization of regional salmon habitat projects
- Coordinating with the Washington State Department of Fish and Wildlife on review of projects and their impacts to fish habitat
- Coordinating with the Washington State Department of Transportation on City projects adjacent to state lands
- Coordinating with Kitsap Regional Coordinating Council on regional transportation and land use decisions
- Coordinating with Puget Sound Regional Council on transportation, growth management, and economic development

Pursuit of Outside Funding

All of the CIP projects identified in this Plan are eligible for outside funding. The City should pursue state grants for stormwater retrofit projects; habitat, fish passage, and floodplain improvement grants for culvert, floodplain, and estuary projects; and low interest loans for capital projects that are purely conveyance improvements.

7

REFERENCES

Ecology. 2019. Western Washington Phase II Municipal Stormwater Permit. State of Washington Department of Ecology. Olympia, Washington 98504-7600. Issuance Date: July 1, 2019.

ESA. 2017. Blackjack Creek Watershed Restoration Assessment and Protection and Restoration Plan. Prepared for Suquamish Tribe and Washington Department of Ecology, by ESA Consultants, Seattle, Washington.

Mauger, Guillaume. 2017. Climate Change and Stormwater. Climate Impacts Group, University of Washington. 1-25.

Kitsap County. 2021. Buildable Lands Report, Kitsap County, Washington. FINAL. https://www.kitsapgov.com/dcd/PEP%20Documents/FINAL%20Buildable%20Lands%20Report_November%202021.pdf

Kitsap Regional Coordination Council. February 15, 2022. Land Use Planning Policy Committee Meeting. <https://static1.squarespace.com/static/5660ba88e4b0e83ffe8032fc/t/6205b0f793b6a1302e7c8f41/1644540153978/KRCC+PlanPOL+Feb+15+2022+Meeting+Packet.pdf. >

Herrera. 2022a. City of Port Orchard Watershed Inventory and Assessment – Technical Memorandum. Prepared for the City of Port Orchard by Herrera Environmental Consultants, Seattle, Washington. March 21.< https://portorchardwa.gov/documents/port-orchard-watershed-inventory/>

Herrera. 2022b. City of Port Orchard Watershed Prioritization – Technical Memorandum. Prepared for the City of Port Orchard by Herrera Environmental Consultants, Seattle, Washington. June 22. < https://portorchardwa.gov/documents/port-orchard-watershed-prioritization/ >

Herrera. 2022c. City of Port Orchard Stormwater and Watersheds Program Evaluation and Recommendations. Prepared for the City of Port Orchard by Herrera Environmental Consultants, Seattle, Washington. February 24.

Herrera. 2020. Port Orchard Shoreline Master Program Update. Prepared for the City of Port Orchard, by Herrera Environmental Consultants, Inc., Seattle, Washington.

OFM. 2022. Population of Cities, Towns and Counties Used for Allocation of Selected State Revenues State of Washington. <https://ofm.wa.gov/sites/default/files/public/dataresearch/pop/april1/ofm_april1_population_final.pdf>

Puget Sound Regional Council. 2020. Vision 2050 A Plan for the Central Puget Sound Region. Puget Sound Regional Council, Seattle, Washington. Adoption Date: October 29, 2020. < https://www.psrc.org/sites/default/files/2022-02/vision-2050-plan%20%281%29.pdf >

Port Orchard. 2020. Blackjack Creek Floodplain Restoration Project Engineering Design Plans. 2020. Port Orchard, Washington.

Port Orchard and Makers Architecture and Urban Design. 2022. Ruby Creek Subarea Plan. Port Orchard, Washington. Adoption Date: September 22, 2022. < https://storage.googleapis.com/proudcity/portorchardwa/uploads/2020/09/FINAL-ADOPTED-Ruby-Creek-Neighborhood-Subarea-Plan-09222020-1.pdf >

Reid Middleton. 2018. 2018 Annapolis Creek Culvert Replacement – 30% Design & Permitting Coordination Report, Prepared for the City of Port Orchard by Reid Middleton, Inc., Everett, Washington.

Reid Middleton. 2020. Downtown Basin Stormwater Plan, Prepared for the City of Port Orchard by Reid Middleton, Inc., Everett, Washington.

APPENDIX A

Stormwater Management Program Staffing and Funding Recommendations

Table A-1. Recommended Activities for Stormwater Planning.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Interdisciplinary team	$0	0	$0	0	0	The interdisciplinary team will continue to meet regularly to direct planning, development, and implementation of the City's Stormwater and Watersheds Comprehensive Plan, SMAP development, and continue to review and implement LID code updates. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Long-range planning	$0	0	$0	0	0	Prepare report summarizing coordination with long-range planning efforts. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Due January 2023)												
LID code review	$0	0	$10,000	40	0.023	The City will continue to annually assess whether any administrative or regulatory barriers to implementation of LID principles or LID BMPs were identified. Assumes $10,000 of consultant support and 40 staff hours annually. (Ongoing starting 2023)	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	40	40	40	40	40	40
Receiving water assessment	$0	0	$0	0	0	Receiving water assessment has been completed. (Due March 2022)												
Receiving water prioritization	$0	0	$0	0	0	Receiving water prioritization has been completed. (Due June 2022)												
SMAP	$0	0	$0	0	0	Prepare a Stormwater Management Action Plan (SMAP) for one high priority area. Assumes funding has already been set aside for this work and staff support would be included with the current level of storm drainage utility funding. (Due March 2023)												
SMAP implementation	$0	0	$0	442	0.25	Implement the SMAP. Assumes 0.25 FTE of staff time will be needed starting in 2026 to carry out activities defined in the SMAP.										442	442	442
Level 1 Total	**$0**	**0**	**$10,000**	**482**	**0.27**		**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**40**	**40**	**40**	**482**	**482**	**482**
Level 2																		
All activities from Level 1	$0	0	$10,000	482	0.27	Same assumptions as Level 1.	$10,000	$10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	40	40	40	482	482	482
Level 2 Total	**$0**	**0**	**$10,000**	**482**	**0.27**		**$10,000**	**$10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**40**	**40**	**40**	**482**	**482**	**482**
Level 3																		
All activities from Level 2	$0	0	$10,000	482	0.27	Same assumptions as Level 2.	$10,000	$10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	40	40	40	482	482	482
Level 3 Total	**$0**	**0**	**$10,000**	**482**	**0.27**		**$10,000**	**$10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**40**	**40**	**40**	**482**	**482**	**482**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-2. Recommended Activities for Public Education and Outreach.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
General awareness public education materials	$0	0	$0	221	0.125	Review and update existing public education materials as needed. Develop materials for one new target audience and one new subject area annually. Assumes 0.125 FTE of staff time will be needed starting in 2023. (Ongoing)							221	221	221	221	221	221
SMAP outreach	$0	80	$0	80	0.05	Add additional Mutt Mitt pet waste pick up stations and conduct outreach within Lower Blackjack Creek Catchment to align with the SMAP. Outreach topics include private property stormwater impacts, stormwater practices, tree preservation, and wetland buffers. Assumes 0.05 FTE of staff time will be needed starting in 2024. (Ongoing starting 2024)									80	80	80	80
Evaluate behavior change program	$0	0	$0	0	0	Evaluation of the Mutt Mitt program has been completed. (Due July 2020)												
Implement social marketing for existing program	$0	80	$0	0	0	Partner with WSSOG on implementing a natural lawn care social marketing campaign as a behavior enhancement in attempt to reduce the use of chemical lawn treatments from 2021-2023. Assumes 80 hours total of additional staff time needed for implementation in 2023. (Ongoing through 2023)							40	40				
Report behavior changes	$0	160	$0	0	0	Summarize the changes in understanding and adoption of targeted behaviors related to the behavior change program. Assumes 80 hours of additional staff time needed in 2023 and 2024. (Due March 2024).							80	80				
Continue stewardship opportunities	$0	0	$0	221	0.125	Continue to host and/or advertise volunteer events related to stewardship opportunities (shoreline cleanups and rain gardens). Assumes 0.125 FTE of staff time will be needed starting in 2023. (Ongoing)							221	221	221	221	221	221
Level 1 Total	**$0**	**320**	**$0**	**522**	**0.3**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**562**	**562**	**522**	**522**	**522**	**522**
Level 2																		
All activities from Level 1	$0	320	$0	522	0.3	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -	562	562	522	522	522	522
Develop LID outreach materials	$20,000	80	$0	0	0	Develop education and outreach materials for commercial and private facility owners related to LID principles and practices. Assumes $20,000 of consultant support and 80 hours of staff support in 2024. (Complete in 2024).		$ 20,000						80				
Expand stewardship opportunities	$0	0	$0	442	0.25	Expand the public education program by creating two additional stewardship opportunities and including field demonstrations/ interactive monitoring in the partnership with South Kitsap School District. Assumes 0.25 FTE of staff time will be needed starting in 2023. (Ongoing starting 2023)							442	442	442	442	442	442
Level 2 Total	**$20,000**	**400**	**$0**	**964**	**0.55**		**$ -**	**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**1004**	**1084**	**964**	**964**	**964**	**964**
Level 3																		
All activities from Level 2	$20,000	400	$0	964	0.55	Same assumptions as Level 2.	$ -	$ 20,000	$ -	$ -	$ -	$ -	1004	1084	964	964	964	964
Develop new general awareness public education materials	$0	0	$0	442	0.25	Develop materials for two additional target audiences and two additional subject areas annually. Assumes 0.25 FTE of staff time will be needed starting in 2023. (Ongoing starting 2023)							442	442	442	442	442	442
Expand stewardship opportunities	$0	0	$0	442	0.25	Create a volunteer stream team for the City that would be trained on monitoring activities such as B-IBI sampling, and habitat/invasive species monitoring and management. Assumes 0.25 FTE of staff time will be needed starting in 2023. (Ongoing starting 2023)							442	442	442	442	442	442
Level 3 Total	**$20,000**	**400**	**$0**	**1848**	**1.05**		**$ -**	**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**1,888**	**1,968**	**1,848**	**1,848**	**1,848**	**1,848**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-3. Recommended Activities for Public Involvement and Participation.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Collaborate with local stakeholders	$0	0	$0	0	0	Continue collaborations with local builders' associations related to permit changes and stormwater issues. Continue participation in WSPER, WREC, WSSOG and expanding ways to reach and involve overburdened communities. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Post SWMP Plan and Annual Report	$0	0	$0	0	0	Continue to post SWMP and latest Annual Report on City's website. Assumes funding and staff support would be included with the current level of SWM funding. (Ongoing)												
Level 1 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 2																		
All activities from Level 1	$0	0	$0	0	0	Same assumptions as Level 1.												
Level 2 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 3																		
All activities from Level 2	$0	0	$0	0	0	Same assumptions as Level 2.												
Level 3 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-4. Recommended Activities for MS4 Mapping and Documentation.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Ongoing map updates	$0	0	$0	442	0.25	Continue to update the City's MS4 map on an ongoing basis. Assume 0.25 FTE additional staff time needed starting in 2023 to manage additions and updates to stormwater mapping. (Ongoing)							442	442	442	442	442	442
Locate and map additional outfalls	$0	40	$0	0	0	Locate and map additional outfalls. Assumes 40 hours total of additional staff time needed to find and document outfalls. (Complete by 2024)								40				
Map outfall attributes	$0	0	$0	0	0	Continue to collect size and material data for known MS4 outfalls during the normal course of inspections and maintenance and update records. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Map known private connections	$0	0	$0	0	0	Continue to map all known connections from the MS4 to a privately owned stormwater system. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Due August 2023)												
Continue to maintain electronic maps	$0	0	$0	0	0	Map new private connections when as-builts are received. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Level 1 Total	**$0**	**40**	**$0**	**442**	**0.25**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**442**	**482**	**442**	**442**	**442**	**442**
Level 2																		
All activities from Level 1	$0	40	$0	442	0.25	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -	442	482	442	442	442	442
Implement computerized maintenance management system	$0	0	$0	884	0.50	Work with consultant to select a computerized maintenance management system (CMMS) and implement the CMMS. Assume that funding for consultant (and staff time to manage the consultant) is already in place and 0.5 FTE is needed to implement and manage the CMMS starting in 2023. (Ongoing)							884	884	884	884	884	884
Level 2 Total	**$0**	**40**	**$0**	**1,326**	**0.75**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**1,326**	**1,366**	**1,326**	**1,326**	**1,326**	**1,326**
Level 3																		
All activities from Level 2	$0	40	$0	1,326	0.75	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -	1,326	1,366	1,326	1,326	1,326	1,326
Level 3 Total	**$0**	**40**	**$0**	**1,326**	**0.75**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**1,326**	**1,366**	**1,326**	**1,326**	**1,326**	**1,326**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-5. Recommended Activities for Illicit Discharge Detection and Elimination.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Post pollution control BMP resources	$0	0	$0	0	0	Continue to update the City's website with pollution control BMP resources. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Field screening	$0	0	$0	0	0	Continue field screening for illicit connections and illicit discharges. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Staff training program	$0	0	$0	0	0	Continue to implement staff training program. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Source tracing/respond to spills and water quality complaints	$0	0	$0	0	0	Continue to respond to spills and water quality complaints. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Report to Ecology	$0	0	$0	0	0	Report illicit discharge data to Ecology using WQWebIDDE. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Level 1 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 2																		
All activities from Level 1	$0	0	$0	0	0	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -	0	0	0	0	0	0
Integrate IDDE into computerized maintenance management system	$0	0	$0	0	0	Integrate IDDE tasks into the computerized maintenance management system (CMMS). Assume this work will be performed by staff implementing the CMMS (see Table B-4), so no additional staff time needed.												
Level 2 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 3																		
All activities from Level 2	$0	0	$0	0	0	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -	0	0	0	0	0	0
Level 3 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-6. Recommended Activities for Controlling Runoff from New Development, Redevelopment, and Construction Sites.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Ordinance	$0	0	$0	0	0	The Port Orchard Municipal Code (POMC) update to adopt Ecology's 2019 SWMMWW has been completed. (Due June 30, 2022)												
Stormwater plan review	$0	0	$0	0	0	Continue to implement stormwater plan review program. Assumes funding and staff support (including the recent new hire) would be included with the current level of storm drainage utility funding. (Ongoing)												
Stormwater standards review	$0	0	$0	40	0.02	Conduct a review of stormwater standards on an annual basis. Assumes 0.02 FTE of staff time will be needed starting in 2024. (Ongoing starting 2024)								40	40	40	40	40
Permit tracking system	$0	0	$0	0	0	Refine and improve the stormwater plan review, inspection, and escalating enforcement processes. Assumes funding and staff support (including the recent new hire) would be included with the current level of storm drainage utility funding. (Ongoing)												
Staff training program	$0	0	$0	0	0	Provide training opportunities for inspection practices, recordkeeping, and erosion control, update the staff training plan as needed, and improve record keeping/documentation of training for City staff. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Level 1 Total	**$0**	**0**	**$0**	**40**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**40**	**40**	**40**	**40**	**40**
Level 2																		
All activities from Level 1	$0	0	$0	40	0	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -		40	40	40	40	40
Construction inspections	$0	0	$0	1,768	1.00	Hire a dedicated stormwater inspector (1 FTE starting in 2024) to assist with construction inspections. (Ongoing)								1,768	1,768	1,768	1,768	1,768
Level 2 Total	**$0**	**0**	**$0**	**1,808**	**1.02**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**1,808**	**1,808**	**1,808**	**1,808**	**1,808**
Level 3																		
All activities from Level 2	$0	0	$0	1,808	1.02	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -		1,808	1,808	1,808	1,808	1,808
Level 3 Total	**$0**	**0**	**$0**	**1,808**	**1.02**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**1,808**	**1,808**	**1,808**	**1,808**	**1,808**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-7. Recommended Activities for Operations and Maintenance.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Private facility inspections	$0	0	$0	0	0	Continue implement private facility inspectors via a third-party contractor. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Maintenance SOPs	$0	0	$0	0	0	Stand-alone SOPs, to address the practices, policies, and procedures listed in the NPDES permit, have been developed. (Due December 2022)												
Public facility inspections and maintenance	$0	0	$0	0	0	Continue to annually inspect and maintain municipally owned or operated stormwater treatment and flow control BMPs/facilities according to permit conditions. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Spot checks	$0	0	$0	0	0	Continue to implement spot checks and inspections after major storms. Assumes funding and staff support would be included with the current level of SWM funding. (Ongoing)												
Catch basin inspections	$0	0	$0	0	0	Continue to inspect catch basins and maintain as needed. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
O&M training	$0	0	$0	0	0	Continue to implement training programs for staff whose work could impact stormwater. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Outfall inspections	$0	200	$0	0	0	Inspect additional outfalls. Assumes locating and mapping outfalls process is complete and 200 hours total of additional staff time needed to inspect the outfalls in 2025. (Complete in 2025)									200			
Catch basin cleanings	$0	0	$0	120	0.07	Clean targeted catch basins in the Lower Blackjack Creek Catchment to align with the SMAP. Assumes 0.07 FTE of staff time will be needed starting in 2024. (Ongoing starting 2024)								120	120	120	120	120
Conduct annual SWPPP inspections	$0	0	$0	0	0	Continue to conduct annual SWPPP inspections. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
SWPPP training	$0	0	$0	0	0	Conduct and document SWPPP training for staff. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Level 1 Total	**$0**	**200**	**$0**	**120**	**0.07**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**120**	**320**	**120**	**120**	**120**
Level 2																		
All activities from Level 1	$0	200	$0	120	0.07	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -		120	320	120	120	120
Private facility inspections	$0	0	$0	884	0.50	Add 0.25 FTE in 2024 and increase to 0.5 FTE total in 2026 to implement private facility inspections with City inspectors. (Ongoing)									442	442	884	884
Catch basin inspections	$0	0	$0	884	0.50	Add 0.5 FTE in 2024 to support catch basin inspection and cleaning. (Ongoing)								884	884	884	884	884
Level 2 Total	**$0**	**200**	**$0**	**1,888**	**1.1**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**1004**	**1,646**	**1,446**	**1,888**	**1,888**
Level 3																		
All activities from Level 2	$0	200	$0	1,888	1.1	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -		1004	1,646	1,446	1,888	1,888
Level 3 Total	**$0**	**200**	**$0**	**1,888**	**1.1**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**1004**	**1,646**	**1,446**	**1,888**	**1,888**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-8. Recommended Activities for Source Control Program for Existing Development.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Ordinance	$0	0	$0	0	0	The City's Stormwater Ordinance to address source control program and enforcement has been developed. (Due August 2022)												
Source control inventory	$0	0	$0	0	0	The City's initial source control inventory has been developed. (Due August 2022)												
Review/update public education materials	$0	0	$0	40	0.02	Review and update public education materials gathered by the Business Inspection Group (BIG) to create a basic set of resources for the City's source control program. Assumes ongoing staff support of 40 hours per year starting in 2023 to update materials. (Ongoing)							40	40	40	40	40	40
Source control inspections	$0	0	$0	280	0.16	Conduct annual source control inspections on 20% of the businesses and/or properties included in the updated source control inventory. Prioritize inspections in the Lower Blackjack Creek Catchment to align with the SMAP. Assumes 0.16 FTE will be needed to implement the inspection program (total staff need for Source Control will be 0.25 FTE). (Ongoing starting in 2023)							280	280	280	280	280	280
Investigate complaints	$0	0	$0	40	0.02	Investigate sites identified through legitimate complaints. Assumes approximately 40 hours of staff support needed annually. (Ongoing starting January 2023)							40	40	40	40	40	40
Source control recordkeeping	$0	0	$0	80	0.05	Ongoing maintenance of inspection records and enforcement documentation. Assumes 80 hours of staff support needed annually starting in 2023 to implement recordkeeping system. (Ongoing)							80	80	80	80	80	80
Enhanced business source control technical assistance	$0	0	$0	40	0.02	Provide enhanced source control technical assistances to businesses within the Lower Blackjack Creek Catchment. Assumes 0.02 FTE of staff time will be needed starting in 2024. (Ongoing starting 2024)								40	40	40	40	40
Staff training program	$0	0	$0	0	0	Conduct and document source control training for staff. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing starting in 2023)												
Level 1 Total	**$0**	**0**	**$0**	**480**	**0.27**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**440**	**480**	**480**	**480**	**480**	**480**
Level 2																		
All activities from Level 1	$0	0	$0	480	0.27	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -	440	480	480	480	480	480
Develop additional public education materials	$20,000	0	$0	40	0.02	Develop additional public education materials to supplement those gathered by the BIG and developed as part of Level 1 to create a broader set of resources for the City's source control program. Assumes $20,000 of consultant support in 2023 and ongoing staff support of 40 hours per year starting in 2024 to update materials. (Ongoing)	$ 20,000							40	40	40	40	40
Level 2 Total	**$20,000**	**0**	**$0**	**520**	**0.29**		**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**440**	**520**	**520**	**520**	**520**	**520**
Level 3																		
All activities from Level 2	$20,000	0	$0	520	0.29	Same assumptions as Level 2.	$ 20,000	$ -	$ -	$ -	$ -	$ -	440	520	520	520	520	520
Level 3 Total	**$20,000**	**0**	**$0**	**520**	**0.29**		**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**440**	**520**	**520**	**520**	**520**	**520**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-9. Recommended Activities for Total Maximum Daily Load (TMDL) Requirements.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
IDDE screening in high priority areas	$0	0	$0	0	0	Prioritize IDDE screening in areas discharging to Sinclair Inlet via Blackjack, Annapolis, and Karcher Creeks and to shorelines (2021-2023). Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Continue into 2023)												
Pollution Prevention Control Plan and ongoing monitoring	$0	0	$0	442	0.25	Develop a Pollution Prevention Control Plan (QAPP equivalent) to monitor stream health and provide water quality status updates by the end of 2023. Assume cost to prepare Pollution Prevention Control Plan is included with the current level of storm drainage utility funding, but that implementation in 2023 and beyond would require 0.25 FTE staff support. (End of 2023 for Plan; Ongoing for monitoring)							442	442	442	442	442	442
Level 1 Total	**$0**	**0**	**$0**	**442**	**0.25**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**442**	**442**	**442**	**442**	**442**	**442**
Level 2																		
All activities from Level 1	$0	0	$0	442	0.25	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -	442	442	442	442	442	442
Level 2 Total	**$0**	**0**	**$0**	**442**	**0.25**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**442**	**442**	**442**	**442**	**442**	**442**
Level 3																		
All activities from Level 2	$0	0	$0	442	0.25	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -	442	442	442	442	442	442
Level 3 Total	**$0**	**0**	**$0**	**442**	**0.25**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**442**	**442**	**442**	**442**	**442**	**442**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-10. Recommended Activities for Monitoring and Assessment.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Regional status and trends monitoring	$0	0	$0	0	0	The City should continue to pay into the Regional Status and Trends Monitoring at the annual contribution amount specified in Appendix 11 of the 2019-2024 permit. This is already included in the annual budget. The City should also seek opportunities to participate with Kitsap County and other local jurisdictions in an integrated and coordinated monitoring assessment program.												
Effectiveness studies and source identification studies	$0	0	$0	0	0	The City should continue to pay into the Regional Effectiveness Studies and Source Identification Studies at the annual contribution amount specified in Appendix 11 of the 2019-2024 permit. This is already included in the annual budget.												
TMDL requirements	$0	0	$0	0	0	The City will continue to implement monitoring required by TMDLs (see Table B-9 for funding and staffing).												
Level 1 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 2																		
All activities from Level 1	$0	0	$0	0	0	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -						
Level 2 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 3																		
All activities from Level 2	$0	0	$0	0	0	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -						
Level 3 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-11. Recommended Activities for Reporting.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Annual report and SWMP plan updates	$0	0	$0	0	0	Continue to update the SWMP plan and answer the Annual Report questions each year. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Due March 31st each year)												
Record keeping	$0	0	$0	0	0	Continue retaining records for a minimum of 5 years. Assumes funding and staff support would be included with the current level of storm drainage utility funding. (Ongoing)												
Level 1 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 2																		
All activities from Level 1	$0	0	$0	0	0	Same assumptions as Level 1.	$ -	$ -	$ -	$ -	$ -	$ -						
Level 2 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**
Level 3																		
All activities from Level 2	$0	0	$0	0	0	Same assumptions as Level 2.	$ -	$ -	$ -	$ -	$ -	$ -						
Level 3 Total	**$0**	**0**	**$0**	**0**	**0**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0**	**0**	**0**	**0**	**0**	**0**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-12. Recommended Activities for Other SWM Program Support.							Funding						Staff Hours					
Recommendation	One-Time[a]		Ongoing[b]			Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Funding	Staff Support (hours)	Funding	Staff Support (hours/ year)	FTE[c]		2023	2024	2025	2026	2027	2028	2023	2024	2025	2026	2027	2028
Level 1																		
Capital project design and project management	$0	0	$0	442	0.25	Add engineering capacity to the capital project design team to assist with stormwater retrofit projects and upcoming SMAP implementation projects. Assumes the addition of 0.25 FTE starting in 2025. (Ongoing)									442	442	442	442
Climate change in capital improvement projects	$50,000	100	$0	0	0	Develop a policy and standards for considering more intense future precipitation and sea level rise in stormwater capital improvement projects. Assumes $40,000 of consultant support and 100 hours of staff time in 2025.			$ 50,000						100			
Level 1 Total	**$50,000**	**100**	**$0**	**442**	**0.25**		**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ -**	**$ -**	**0**	**0**	**542**	**442**	**442**	**442**
Level 2																		
All activities from Level 1	$50,000	100	$0	442	0.25	Same assumptions as Level 1.	$ -	$ -	$ 50,000	$ -	$ -	$ -			542	442	442	442
Additional capital project design and project management	$0	0	$0	442	0.25	Increase engineering capacity for the capital project design team to assist with stormwater retrofit projects and upcoming SMAP implementation projects. Assumes the addition of 0.25 FTE starting in 2025. (Ongoing)									442	442	442	442
Level 2 Total	**$50,000**	**100**	**$0**	**884**	**0.50**		**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ -**	**$ -**	**0**	**0**	**984**	**884**	**884**	**884**
Level 3																		
All activities from Level 2	$50,000	100	$0	884	0.50	Same assumptions as Level 2.	$ -	$ -	$ 50,000	$ -	$ -	$ -			984	884	884	884
Additional capital project design and project management	$0	0	$0	442	0.25	Increase engineering capacity for the capital project design team to assist with stormwater retrofit projects and upcoming SMAP implementation projects. Assumes the addition of 0.25 FTE starting in 2025.									442	442	442	442
Climate change in private development projects	$100,000	100	$0	0	0	Develop a policy and standards for new and redevelopment projects to design for more intense future precipitation. Assumes $40,000 of consultant support and 100 hours of staff time in 2027.					$ 100,000						100	
Level 3 Total	**$150,000**	**200**	**$0**	**1,326**	**0.75**		**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ 100,000**	**$ -**	**0**	**0**	**1,426**	**1,326**	**1,426**	**1,326**

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

Table A-13. Cost Summary by Program Area, Year, and Tier.

Program Area	Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
		2023	2024	2025	2026	2027	2028	
Stormwater Planning	Level 1	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	**$60,000**
	Level 2	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	**$60,000**
	Level 3	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	**$60,000**
Public Education and Outreach	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$20,000	$0	$0	$0	$0	**$20,000**
	Level 3	$0	$20,000	$0	$0	$0	$0	**$20,000**
Public Involvement and Participation	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
MS4 Mapping and Documentation	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Illicit Discharge Detection and Elimination	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Controlling Runoff from New Development, Redevelopment, and Construction Sites	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Operations and Maintenance	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Source Control Program for Existing Development	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$20,000	$0	$0	$0	$0	$0	**$20,000**
	Level 3	$20,000	$0	$0	$0	$0	$0	**$20,000**
TMDL Requirements	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Monitoring and Assessment	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Reporting	Level 1	$0	$0	$0	$0	$0	$0	**$0**
	Level 2	$0	$0	$0	$0	$0	$0	**$0**
	Level 3	$0	$0	$0	$0	$0	$0	**$0**
Other SWM Support	Level 1	$0	$0	$50,000	$0	$0	$0	**$50,000**
	Level 2	$0	$0	$50,000	$0	$0	$0	**$50,000**
	Level 3	$0	$0	$50,000	$0	$100,000	$0	**$150,000**

Table A-14. Cost Summary by Year and Tier.							
Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	**Total**
	2023	2024	2025	2026	2027	2028	
Level 1 Total	**$10,000**	**$10,000**	**$60,000**	**$10,000**	**$10,000**	**$10,000**	**$110,000**
Level 2 Total	**$30,000**	**$30,000**	**$60,000**	**$10,000**	**$10,000**	**$10,000**	**$150,000**
Level 3 Total	**$30,000**	**$30,000**	**$60,000**	**$10,000**	**$110,000**	**$10,000**	**$250,000**

Table A-15. Staff Hours Summary by Program Area, Year, and Tier.

Program Area	Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
		2023	2024	2025	2026	2027	2028	
Stormwater Planning	Level 1	40	40	40	482	482	482	**1,566**
	Level 2	40	40	40	482	482	482	**1,566**
	Level 3	40	40	40	482	482	482	**1,566**
Public Education and Outreach	Level 1	562	562	522	522	522	522	**3,212**
	Level 2	1,004	1,084	924	964	964	964	**5,904**
	Level 3	1,888	1,968	1,848	1,848	1,848	1,848	**11,248**
Public Involvement and Participation	Level 1	0	0	0	0	0	0	**0**
	Level 2	0	0	0	0	0	0	**0**
	Level 3	0	0	0	0	0	0	**0**
MS4 Mapping and Documentation	Level 1	442	482	442	442	442	442	**2,692**
	Level 2	1,326	1,366	1,326	1,326	1,326	1,326	**7,996**
	Level 3	1,326	1,366	1,326	1,326	1,326	1,326	**7,996**
Illicit Discharge Detection and Elimination	Level 1	0	0	0	0	0	0	**0**
	Level 2	0	0	0	0	0	0	**0**
	Level 3	0	0	0	0	0	0	**0**
Controlling Runoff from New Development, Redevelopment, and Construction Sites	Level 1	0	40	40	40	40	40	**200**
	Level 2	0	1,808	1,808	1,808	1,808	1,808	**9,040**
	Level 3	0	1,808	1,808	1,808	1,808	1,808	**9,040**
Operations and Maintenance	Level 1	0	120	320	120	120	120	**800**
	Level 2	0	1,004	1,646	1,446	1,888	1,888	**7,872**
	Level 3	0	1,004	1,646	1,446	1,888	1,888	**7,872**
Source Control Program for Existing Development	Level 1	440	480	480	480	480	480	**2,840**
	Level 2	440	520	520	520	520	520	**3,040**
	Level 3	440	520	520	520	520	520	**3,040**
TMDL Requirements	Level 1	442	442	442	442	442	442	**2,652**
	Level 2	442	442	442	442	442	442	**2,652**
	Level 3	442	442	442	442	442	442	**2,652**
Monitoring and Assessment	Level 1	0	0	0	0	0	0	**0**
	Level 2	0	0	0	0	0	0	**0**
	Level 3	0	0	0	0	0	0	**0**
Reporting	Level 1	0	0	0	0	0	0	**0**
	Level 2	0	0	0	0	0	0	**0**
	Level 3	0	0	0	0	0	0	**0**
Other SWM Support	Level 1	0	0	542	442	442	442	**1,868**
	Level 2	0	0	984	884	884	884	**3,636**
	Level 3	0	0	1,426	1,326	1,426	1,326	**5,504**

Table A-16. Staff Hours Summary by Year and Tier.

Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	2023	2024	2025	2026	2027	2028
Level 1 Total	**1,926**	**2,166**	**2,828**	**2,970**	**2,970**	**2,970**
Level 2 Total	**3,252**	**6,264**	**7,690**	**7,872**	**8,314**	**8,314**
Level 3 Total	**4,136**	**7,148**	**9,056**	**9,198**	**9,740**	**9,640**

Table A-17. Staff FTE Summary by Year and Tier.

Tier	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	2023	2024	2025	2026	2027	2028
Level 1 Total	**1.09**	**1.23**	**1.60**	**1.68**	**1.68**	**1.68**
Level 2 Total	**1.84**	**3.54**	**4.35**	**4.45**	**4.70**	**4.70**
Level 3 Total	**2.34**	**4.04**	**5.12**	**5.20**	**5.51**	**5.45**

Table A-18. Funding and Staffing Summary by Program Area and Tier.

Program Area	Tier	One-Time[a]		Ongoing[b]		
		Funding	Staff Support (hours)	Funding	Staff Support (hours/year)	FTE[c]
Stormwater Planning	Level 1	$0	0	$10,000	482	0.27
	Level 2	$0	0	$10,000	482	0.27
	Level 3	$0	0	$10,000	482	0.27
Public Education and Outreach	Level 1	$0	320	$0	522	0.30
	Level 2	$20,000	400	$280	964	0.30
	Level 3	$20,000	400	$0	1,848	1.05
Public Involvement and Participation	Level 1	$0	0	$0	0	0
	Level 2	$0	0	$0	0	0
	Level 3	$0	0	$0	0	0
MS4 Mapping and Documentation	Level 1	$0	40	$0	442	0.25
	Level 2	$0	40	$0	1,326	0.75
	Level 3	$0	40	$0	1,326	0.75
Illicit Discharge Detection and Elimination	Level 1	$0	0	$0	0	0
	Level 2	$0	0	$0	0	0
	Level 3	$0	0	$0	0	0
Controlling Runoff from New Development, Redevelopment, and Construction Sites	Level 1	$0	0	$0	40	0
	Level 2	$0	0	$0	1,808	1.02
	Level 3	$0	0	$0	1,808	1.02
Operations and Maintenance	Level 1	$0	200	$0	120	0
	Level 2	$0	200	$0	1,888	1.07
	Level 3	$0	200	$0	1,888	1.07
Source Control Program for Existing Development	Level 1	$0	0	$0	480	0.27
	Level 2	$20,000	0	$0	520	0.29
	Level 3	$20,000	0	$0	520	0.29
TMDL Requirements	Level 1	$0	0	$0	442	0
	Level 2	$0	0	$0	442	0
	Level 3	$0	0	$0	442	0
Monitoring and Assessment	Level 1	$0	0	$0	0	0
	Level 2	$0	0	$0	0	0
	Level 3	$0	0	$0	0	0
Reporting	Level 1	$0	0	$0	0	0
	Level 2	$0	0	$0	0	0
	Level 3	$0	0	$0	0	0
Other SWM Support	Level 1	$50,000	100	$0	442	0.25
	Level 2	$50,000	100	$0	884	0.50
	Level 3	$150,000	200	$0	1,326	0.75

[a] One-time activities are completed once, such as hiring a consultant to develop new training materials

[b] Ongoing activities occur every year, such as continuing an inspection program or annual review of procedures

[c] FTE, or Full-time equivalent staff, assumes 1,768 hours worked per year for one full-time staff member

APPENDIX B

Capital Improvement Program

APPENDIX B.1

Initial Capital Improvement Projects, Problem Descriptions, and Solutions

Table 1. Initial Capital Improvement Projects, Problem Descriptions, and Solutions.						
ID	**Project Name**	**Basin**	**Problem Description**	**Solution**	**Phase II Scope [a]**	**Project Type**
1	Anderson Creek Culvert Retrofits	Anderson Creek	The two existing culverts are undersized for fish passage and have not been able to be inspected in the past 10 years.	Replace undersized culverts with fish passable box culverts or a bridge. Coordinate the project with water main replacement on Old Clifton Road.	Conduct a site assessment to determine the necessary culvert size. Develop a summary sheet, figure, and analogous cost estimate.	Culvert Retrofits or Replacement
2	Annapolis Creek Culvert Replacement	Annapolis Creek	The existing culvert is failing, which is impairing upstream estuary conditions, and contributing to local flooding and property damage.	Replace the failing culvert with new modern fish passable culvert and restoring estuary processes upstream. 30% design has been completed by Reid Middleton. Currently in the process of selecting a preferred alternative.	Develop a project summary sheet and figure. The details in the summary sheet and cost estimate will come from design work that is underway.	Culvert Retrofits or Replacement
3	SE Salmonberry Road Lower Blackjack Creek Culvert Replacement	Lower Blackjack Creek	The existing culvert at SE Salmonberry Road crossing has collapsed.	Replace the failing culvert with new modern fish passable culvert. Coordinate with Bethel and Sedgwick Road Corridor Stormwater Improvement projects.	Identify a reference reach and conduct a site assessment to determine the necessary culvert size. Develop a summary sheet, figure, and analogous cost estimate.	Culvert Retrofits or Replacement
4	Blackjack Creek Floodplain Restoration and Stormwater Management	Lower Blackjack Creek	The mainstem of Blackjack Creek and the surrounding floodplain are impaired. The floodplain currently lacks adequate water storage.	Restore natural channel configuration and floodplain function on Blackjack Creek to improve stormwater treatment, infiltration, and water storage for low flows.	Develop conceptual solution for restoration of fluvial process and floodplain function, summary sheet, figure, and analogous cost estimate.	Floodplain and Stream Restoration
5	Blackjack Creek Storm Outfall Assessment and Retrofits	Lower Blackjack Creek	There are multiple storm outfalls that need rehabilitation. The outfalls have inadequate energy dissipation, infiltration, and water quality treatment.	Rehabilitate the outfalls.	Conduct site assessment to confirm existing conditions and develop conceptual solutions. Create a summary sheet, figure, and analogous cost estimate.	Outfall Condition Assessment and Rehabilitation

Table 1. Initial Capital Improvement Projects, Problem Descriptions, and Solutions.						
ID	**Project Name**	**Basin**	**Problem Description**	**Solution**	**Phase II Scope [a]**	**Project Type**
6	Central Sidney Stormwater Improvements	Downtown-County Campus	Old and undersized stormwater infrastructure is resulting in frequent flooding of the roadway and private property. Stormwater runoff currently discharges untreated to Unnamed Stream negatively affecting aquatic organisms.	Construct adequately sized stormwater conveyance infrastructure throughout the neighborhood and construct a regional facility / stormwater park to provide flow control and water quality treatment in accordance with current stormwater requirements.	Conduct hydrologic modeling to size the regional facility. Develop conceptual plan for conveyance system and regional facility location. Create a summary sheet, figure, and analogous cost estimate.	Stormwater Conveyance and Water Quality Treatment
7	Downtown Basin Stormwater Upgrades	Downtown-County Campus	The Downtown-County Campus Basin has inadequate conveyance, water quality treatment, and flow control to manage stormwater runoff.	The Downtown Basin Stormwater Plan is underway. It includes infrastructure, condition assessment, and modeling. The work will define approximately five new capital projects.	Develop project summary sheets and figures for approximately five projects. The details in the summary sheet and cost estimate will come from the Downtown Basin Stormwater Plan.	Stormwater Conveyance and Water Quality Treatment
8	Glenwood Road Ruby Creek Culvert Replacement	Ruby Creek	There are multiple undersized fish barrier culverts and drainage issues near Glenwood Road.	Remove undersized culverts and replace with fish passable culverts.	Conduct a site assessment to determine the necessary culvert sizes. Develop a summary sheet, figure, and analogous cost estimate.	Culvert Retrofits or Replacement
9	Johnson Creek Stream Realignment	Johnson Creek	There are 18 fish barrier culverts along Johnson Creek, many of which are unnecessary. Johnson Creek also has alignment issues.	Feasibility assessment and alternatives analysis for realigning Johnson Creek and Port Orchard Boulevard to restore stream channel function and fish passage. This will involve removing the 18 culverts and potentially installing fish passable culverts.	Conduct field assessment to size the new culverts. Develop a summary sheet, figure, and analogous cost estimate.	Culvert Retrofits or Replacement (Full Stream Realignment)
10	Johnson Creek Estuary Restoration	Johnson Creek	The Johnson Creek estuary has been filled by development and contains potentially contaminated soils.	Feasibility assessment and alternatives analysis to restore the estuary. Remove two 30" pipes in the easement and restore the estuary. This will require property acquisition at the mouth of Johnson Creek.	Conduct field assessment to define estuary footprint. Develop a summary sheet, figure, and analogous cost estimate.	Estuary Restoration
11	McCormick Woods Drive Culvert Barrier Replacement	Anderson Creek	There are three failing culverts along McCormick Woods Drive that need to be removed and replaced.	Remove the three failing culverts and replace with fish passable culverts.	Conduct field assessment to size the culverts. Create a summary sheet, figure, and analogous cost estimate.	Culvert Retrofits or Replacement

Table 1. Initial Capital Improvement Projects, Problem Descriptions, and Solutions.						
ID	**Project Name**	**Basin**	**Problem Description**	**Solution**	**Phase II Scope [a]**	**Project Type**
12	Port Orchard East Shoreline Acquisition and Easement Right	Lower Blackjack Creek	Stormwater outfalls in the Eastern Shoreline are not accessible for inspection and maintenance. The shoreline is currently inaccessible to the public.	Acquire access to all shoreline properties east of Rockwell Park to eastern city limit.	Confirm number of outfalls on public and private property. Develop a summary sheet, figure, and analogous cost estimate.	Shoreline Acquisition
13	Rockwell Area Stormwater Improvements	Lower Blackjack Creek	The Rockwell Area has inadequate water quality treatment. The area also has a high groundwater table and steep grade resulting in high stormwater flow rates and sediment accumulation at the following intersections: Bay Street and Seattle Avenue; Bay Street and Rockwell Avenue.	Install water quality treatment system(s) for the Rockwell Area.	Develop conceptual plan for water quality treatment system(s). Create a summary sheet, figure, and analogous cost estimate.	Water Quality Treatment
14	Ross Creek Beaver Dam Analogs Installation	Ross Creek	Ross Creek and the surrounding floodplain are impaired. The floodplain currently lacks adequate water storage.	Install beaver dam analogs or other in-stream elements to improve floodplain connectivity in the most effective areas.	Conduct field assessment to identify locations for beaver dam analogs or other in-stream elements along Ross Creek. Develop a summary sheet, figure, and analogous cost estimate.	Floodplain and Stream Restoration
15	Ross Creek Estuary Restoration and Beach Recreation Area	Ross Creek	The Ross Creek estuary is impaired and there is limited public recreation access at the nearby beaches.	Restore estuary function and processes in Ross Creek and open privately owned beaches for recreation activities.	Develop a summary sheet, figure, and analogous cost estimate.	Estuary Restoration Shoreline Acquisition
16	Sidney Road SW Ruby Creek Culvert Replacement and Bridge Installation	Ruby Creek	There is a failing culvert under Sidney Road SW. The culvert is a fish barrier due to a plunge pool and elevation drop.	Replace the culvert under Sidney Road SW.	Create a summary sheet, figure, and analogous cost estimate. The details in the summary sheet and cost estimate will come from design work that is underway (Brian Abbott grant).	Culvert Retrofits or Replacement
17	Silver Creek Rehabilitation	Lower Blackjack Creek	Silver Creek, a Type F tributary to Blackjack Creek, requires rehabilitation to restore its original fluvial function.	Redirect flow into a deep pipe, trapezoidal channel, or through private property.	Conduct a site assessment to define a conceptual solution. Develop a summary sheet, figure, and analogous cost estimate.	Floodplain and Stream Restoration Stormwater Conveyance

Table 1. Initial Capital Improvement Projects, Problem Descriptions, and Solutions.						
ID	**Project Name**	**Basin**	**Problem Description**	**Solution**	**Phase II Scope [a]**	**Project Type**
18	South Blackjack Creek Culvert Removal and Bridge Installation	Lower Blackjack Creek	There is a failing fish barrier culvert under Sedgwick Road. The culvert needs to be removed and replaced.	Remove culvert under Sedgwick Road and replace with a large span bridge. Coordinate with TIP projects.	Conduct site assessment to size the bridge. Develop a summary sheet, figure, and analogous cost estimate.	Culvert Retrofits or Replacement
19	South Sidney Regional Facility	Lower Blackjack Creek	Old and undersized stormwater infrastructure is resulting in frequent flooding on Sherman Avenue and private property in nearby cul-de-sacs. There is no visible stormwater conveyance system nearby. Stormwater runoff currently discharges untreated to Blackjack Creek negatively affecting aquatic organisms. There is also a need for residential pedestrian connectivity between Bravo Terrace and South Sidney.	Construct a regional facility that includes infiltration. This project will require property acquisition.	Conduct hydrologic modeling to size the regional facility. Develop conceptual plan for regional facility location. Create a summary sheet, figure, and analogous cost estimate.	Water Quality Treatment
20	Westbay Stormwater Improvements	Lower Blackjack Creek	Old and undersized stormwater infrastructure is resulting in localized flooding. There is currently no water quality treatment in the area. Stormwater runoff currently discharges untreated to Sinclair Inlet negatively affecting aquatic organisms. The area has steep slopes and limited right-of-way, making this a difficult project.	Install stormwater conveyance and water quality treatment infrastructure.	Develop conceptual plan for water quality treatment and conveyance upgrades. Create a summary sheet, figure, and analogous cost estimate.	Stormwater Conveyance and Water Quality Treatment

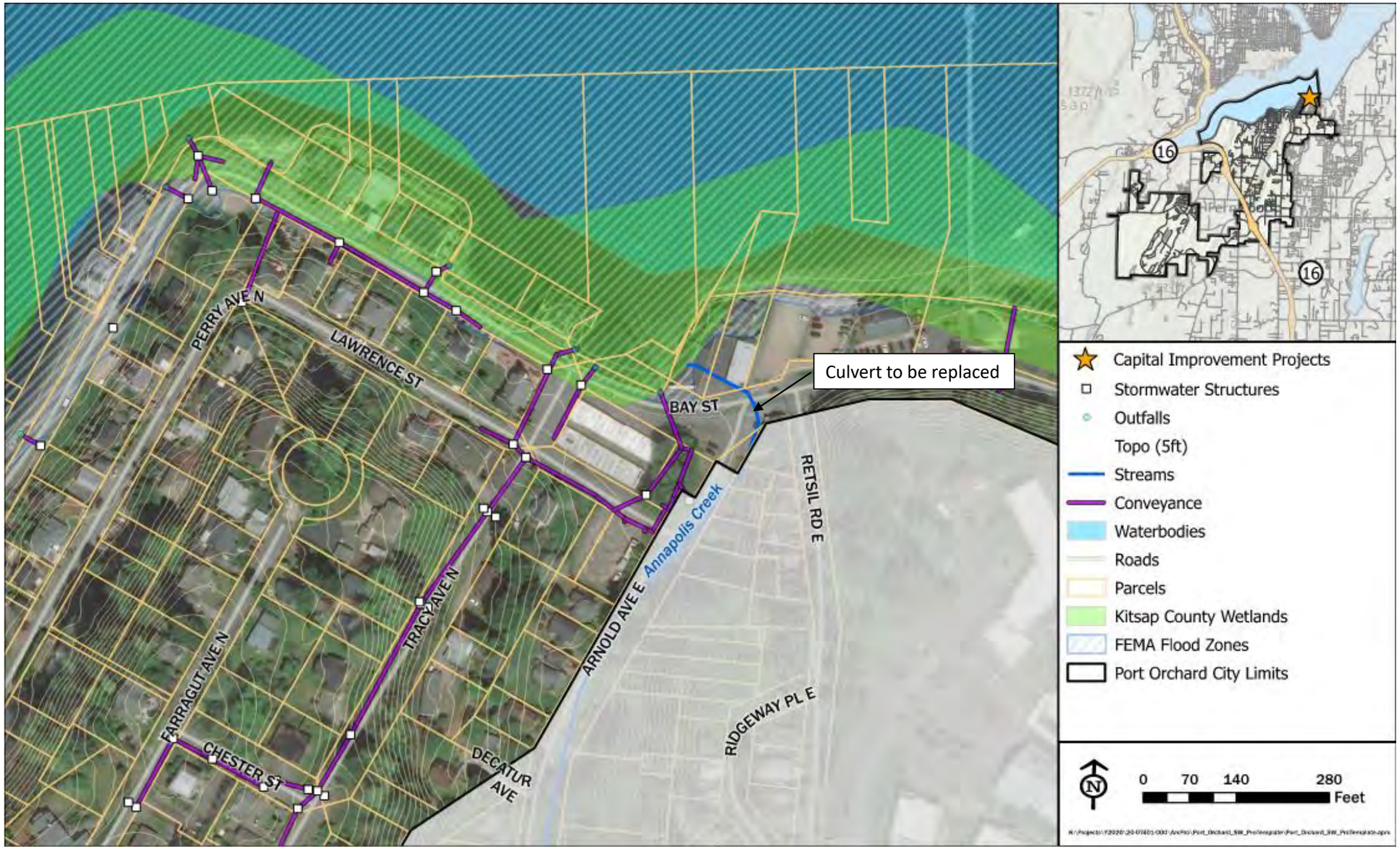
APPENDIX B.2

Capital Improvement Project Summary Sheets

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

ANNAPOLIS CREEK CULVERT REPLACEMENT

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities
• Annapolis Creek Basin	• Bay Street ROW	• Flat stream grade • 9 feet elevation drop from road to culvert invert	• Site soils consist of fill material, beach, and estuary deposits • Groundwater at 7 feet	• Fish stream channel and shoreline	• Existing sewer force main and water main along Bay Street

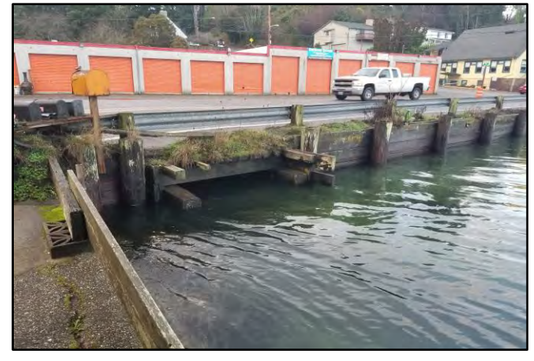
Problem Description

The existing wood-framed box culvert under Bay Street is deteriorating causing maintenance costs to increase. Flooding occurs in the area due to tidal influences. The 36-inch culvert that connects to the box culvert creates a fish passage barrier.

Existing Conditions

36-inch culvert inlet

Existing utilities crossing through box culvert



Wood-framed box culvert at high tide

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

ANNAPOLIS CREEK CULVERT REPLACEMENT

Project Description

Replace existing 36-inch culvert and wood-framed box culvert with a 12-ft wide bottomless concrete box culvert on concrete foundations. Existing utilities will continue to pass through the culvert walls.

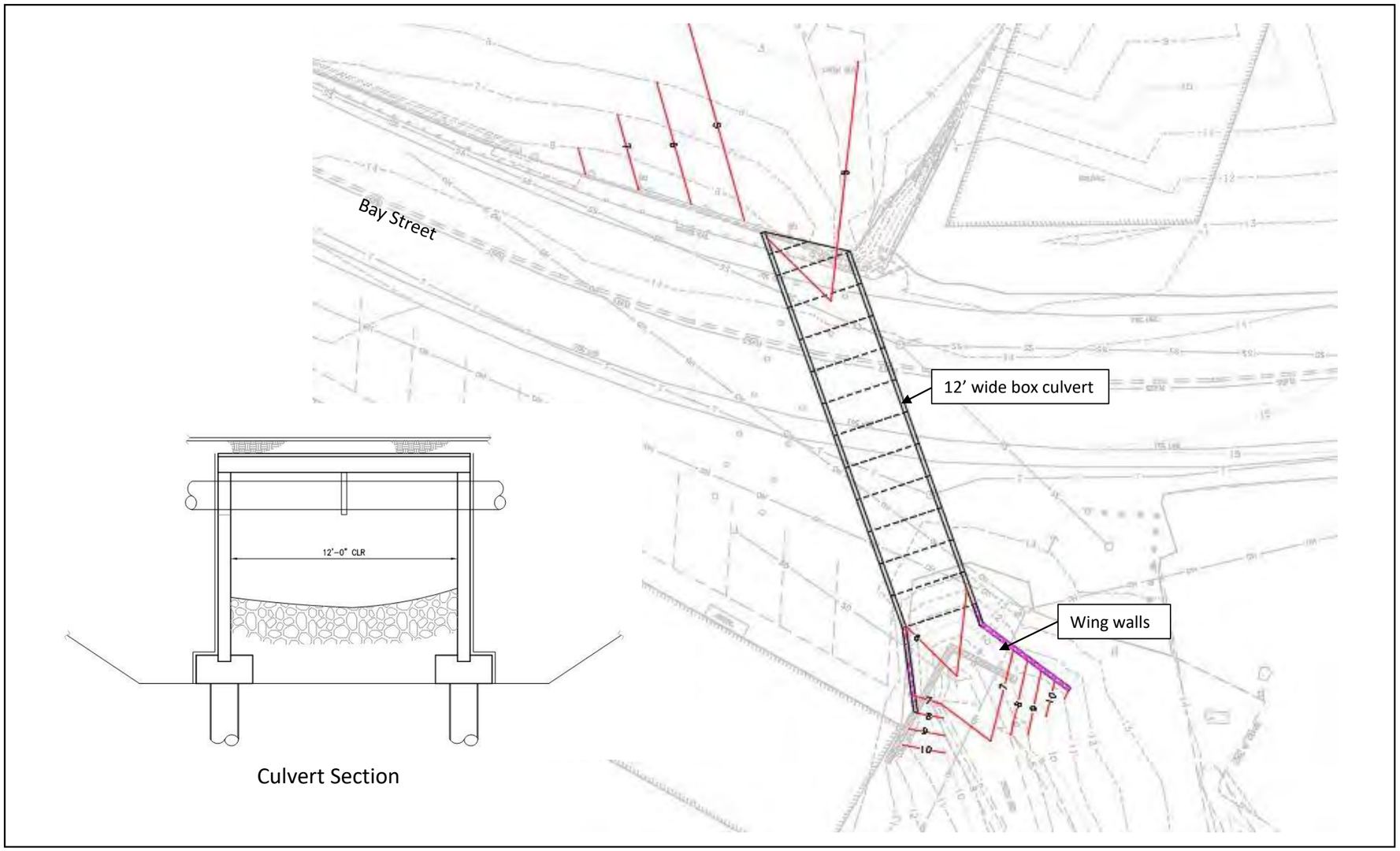
Permits Required

Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
SEPA DNS
Right-of-Way Permit
Commercial Permit
Critical Areas Documentation
Shoreline Permit

Estimated Costs

Total Construction Cost (2022)
$1,200,000

Concept Site Plan



Culvert Section

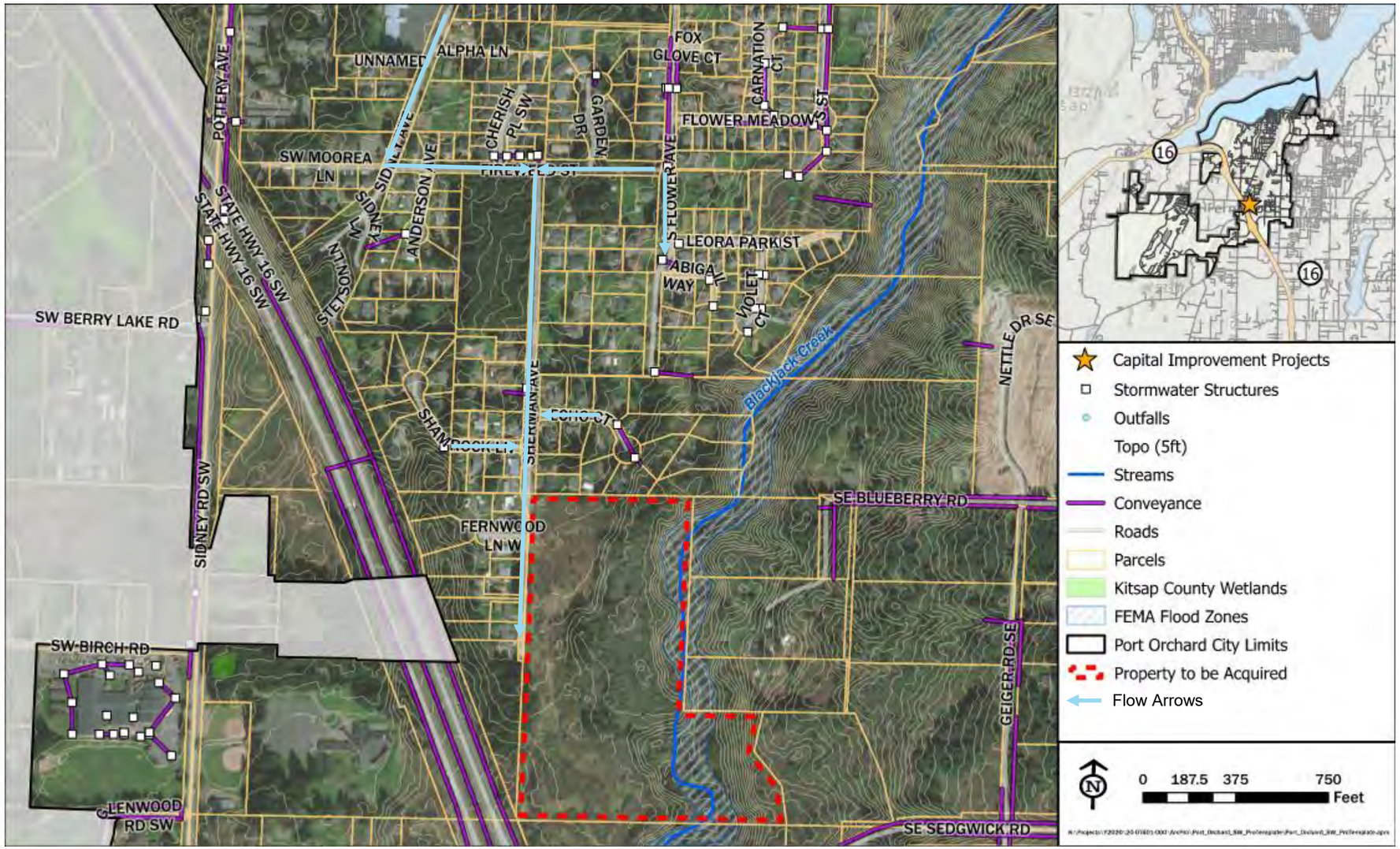
Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
15	0	5	10	5	0	10	45

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SOUTH SIDNEY REGIONAL FACILITY

Existing Site Plan



Problem Description

Old and undersized stormwater infrastructure is resulting in frequent flooding on Sherman Avenue and private property in nearby cul-de-sacs. There is no visible stormwater conveyance system nearby. Stormwater runoff currently discharges untreated to Blackjack Creek negatively affecting aquatic organisms. The neighborhood currently lacks sidewalks and walkability.

Existing Conditions

Undeveloped Parcel at the South End of Sherman Avenue
(Photos Courtesy of Google Earth)

Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities
• Lower Blackjack Creek	• No available space without property acquisition	• Steeper slopes on eastern and southern sides of the property	• Mostly Kitsap Silt Loam (Hydrologic Soil Group A)	• Stream buffer located on the east side of the property	• No known utility conflicts on the property • Multiple ROW utilities (e.g., overhead power, gas, water, sewer) are present

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SOUTH SIDNEY REGIONAL FACILITY

Project Description

Build a new regional stormwater facility on the parcel southeast of Sherman Avenue. The facility will provide centralized flow control and treatment of an approximately 30-acre upstream drainage area extending from Sidney Avenue to Sherman Avenue. The facility could incorporate elements from constructed wetlands, bioretention, and infiltration ponds. The facility will serve as a neighborhood amenity and will enhance aesthetics, biodiversity, and habitat. A combination of surface (swale) and subsurface (piped) stormwater conveyance will be constructed to convey flow to the facility. This project will require property acquisition and facilitate the construction of sidewalks in the neighborhood.

Design Precedent

Whispering Firs Stormwater Park Example (Photo Courtesy of Contech Engineered Solutions, LLC)

Permits Required

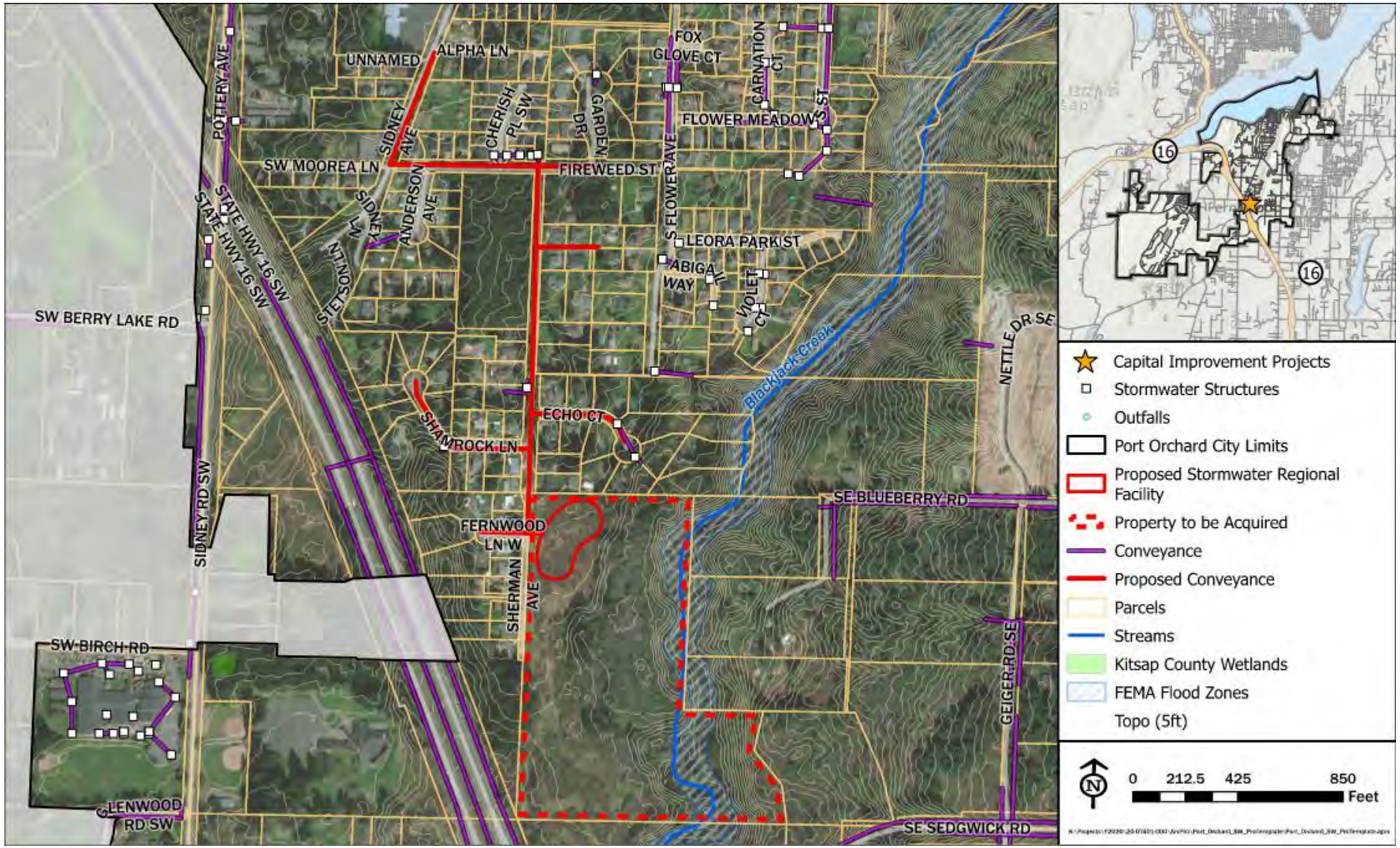
Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
SEPA DNS

Estimated Costs

Total design + permitting + construction cost does not include property acquisition.

Total Design + Permitting + Construction Cost (2022)
$3,500,000

Concept Site Plan



Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
5	15	10	10	0	15	15	70

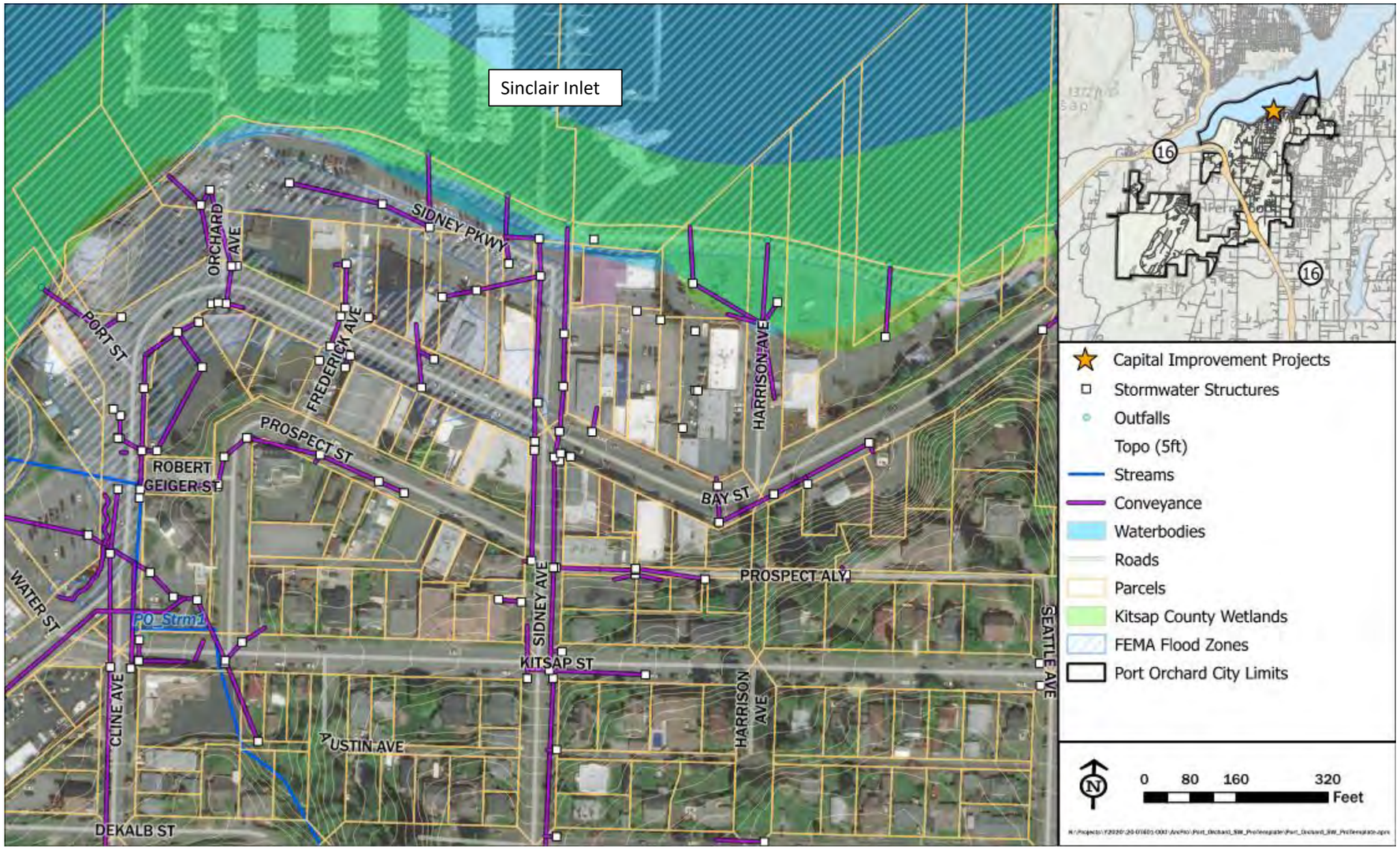
Port ORCHARD · HERRERA · ReidMiddleton · GeoEngineers

October 2022

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

DOWNTOWN STORMWATER BASIN IMPROVEMENTS

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities
• Downtown-County Campus Basin	• Public Road ROWs • City owned parking lots in marina and boat launch	• Steep slopes in the upper part of the basin • Flatter grades north of Bay Street	• Site soils consist of Harstine gravelly ashy sandy loam in the upper basin • Urban land-Alderwood in the lower basin	• Stream channel • Shoreline	• Existing water, sewer, and storm pipes throughout the basin

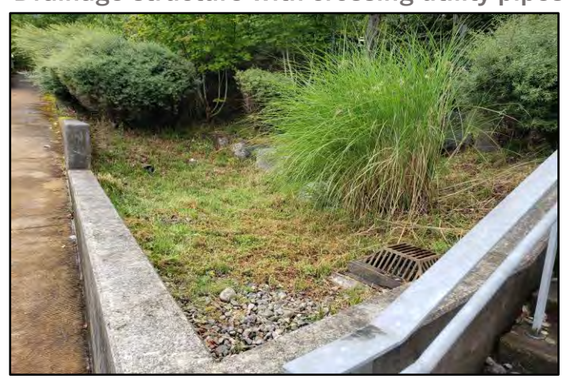
Problem Description

Most of the stormwater from the basin discharges to Sinclair Inlet without treatment. Some of the existing infrastructure is under capacity and pipe routing is inefficient. Flooding of the lower basin occurs during high tide events.

Existing Conditions

Typical drain inlets in Downtown Basin

Drainage structure with crossing utility pipes



One of two water quality facilities in Downtown Basin

Port ORCHARD · HERRERA · ReidMiddleton · GeoEngineers

October 2022

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

DOWNTOWN STORMWATER BASIN IMROVEMENTS

Project Description

Install tide gates in new manhole structures at all outfall pipes directly discharging into Sinclair Inlet. Install water quality vaults in centralized locations to collect and treat stormwater runoff. Replace and reconfigure convoluted storm pipe systems to new water quality facilities. Remove smaller pipe outfalls prone to tidal flooding. Install optional detention vault (2500 CF) to reduce flooding during large tidal and storm events.

This project aligns with the Downtown Subarea Plan and Community Events Center (CEC), and is related to the federal funding to improve Bay Street in Downtown Port Orchard.

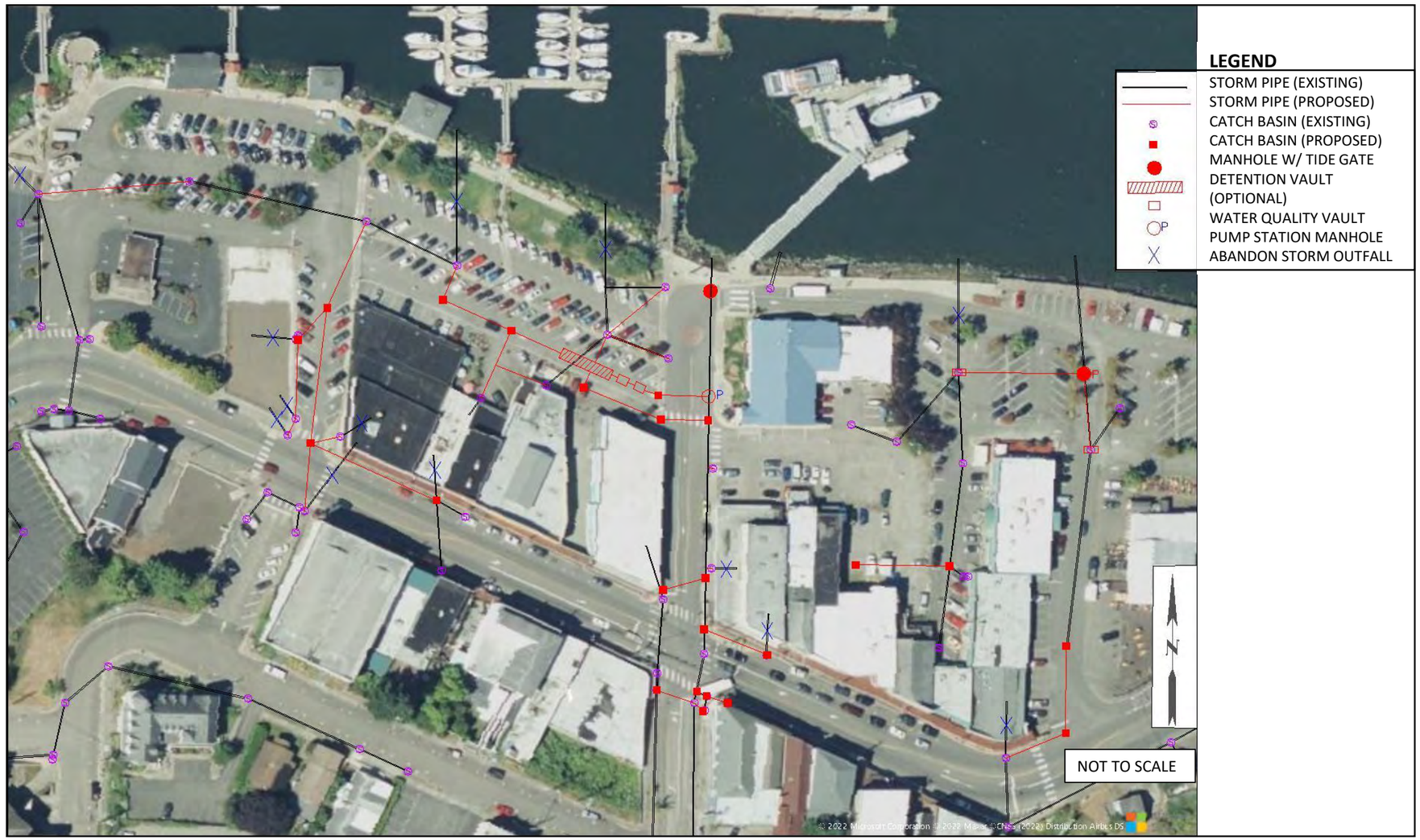
Permits Required

Right-of-Way Permit
Commercial Permit

Estimated Costs

Total Design + Permitting + Construction Cost (2022)
$1,760,000

Concept Site Plan



Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
15	15	0	0	10	0	15	55

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

DOWNTOWN STORMWATER BASIN IMROVEMENTS

Project Description

Install tide gates in new manhole structures at all outfall pipes directly discharging into Sinclair Inlet. Install water quality vaults in centralized locations to collect and treat stormwater runoff. Replace and reconfigure convoluted storm pipe systems to improve function and maintenance. Install optional detention vaults (2500 CF) to reduce flooding during large tidal and storm events.

This project aligns with the Downtown Subarea Plan and Community Events Center (CEC), and is related to the funding to improve Bay Street in Downtown Port Orchard.

Permits Required

Right-of-Way Permit
Commercial Permit

Estimated Costs

Total Design + Permitting + Construction Cost (2022)
$970,000 (Near City Hall) or $1,100,000 with Optional Detention $982,000 (Near Kitsap County Courthouse)

Concept Site Plan

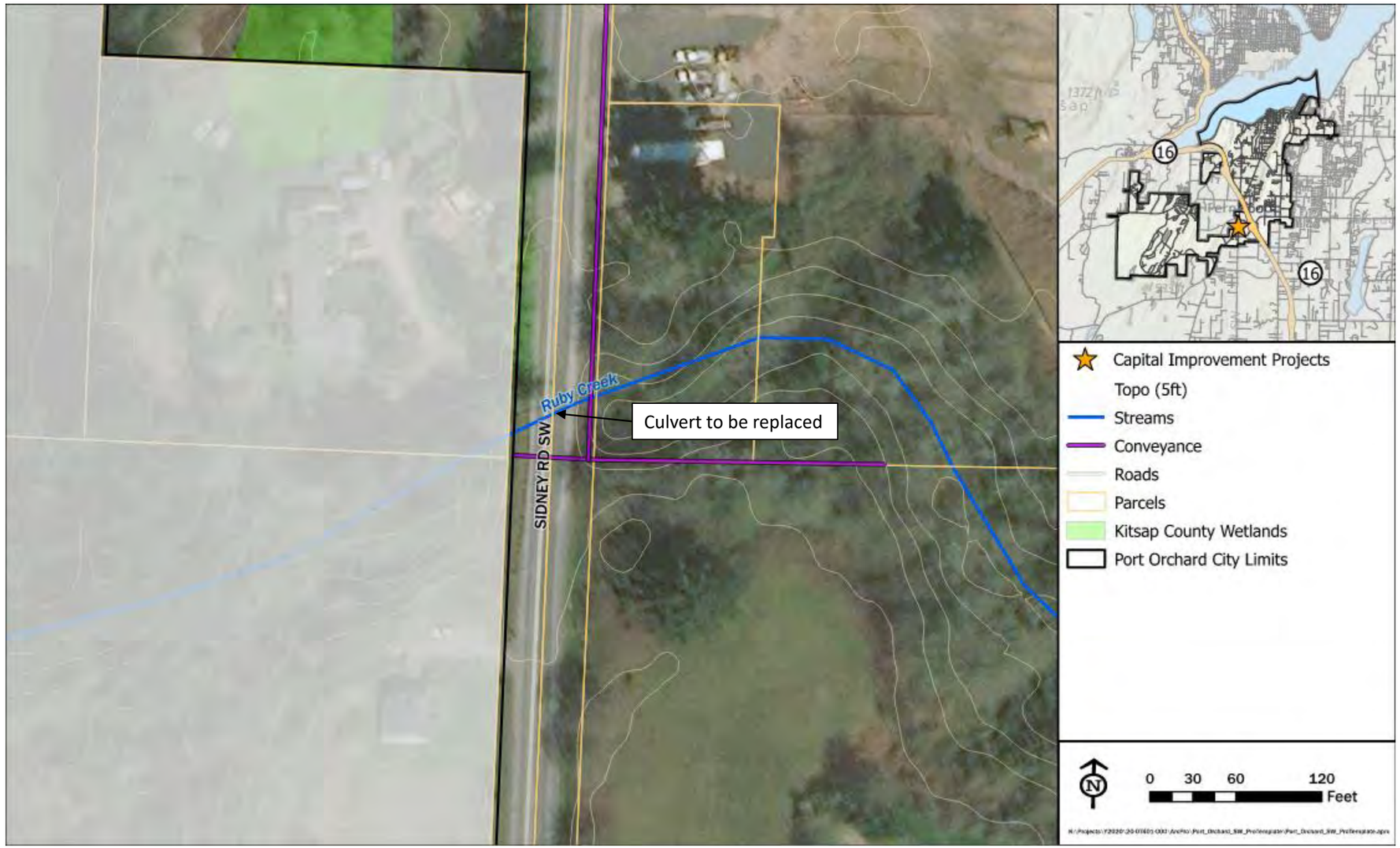
Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
15	15	0	0	10	0	15	55

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

RUBY CREEK CULVERT REPLACEMENT

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities	Other
• Ruby Creek Basin • Mixed – sparse residential, lawn/pasture, new dense residential, forested	• Sidney Rd ROW. • Need temporary construction easements on private property	• Flat stream gradient • Approximately 12 feet of fill cover over the culvert	• Site soils consist of Bellingham silty clay loam	• Streams and wetlands - WDFW habitat assessment reports frequent areas of ponding and beaver activity.	• Existing water main within Sidney Road. • Storm outfall enters downstream channel from the north	• New dense residential development under construction within contributing basin – new culvert should be sized appropriately for increased storm flood magnitude and time period.

Problem Description

Existing 8' wide CMP elliptical culvert has a damaged inlet and rusted bottom and is a partial fish barrier.

Existing Conditions

Damaged culvert inlet

Rusted culvert outfall with short water surface drop

Geotextile fabric-lined upstream right bank

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

RUBY CREEK CULVERT REPLACEMENT

Project Description

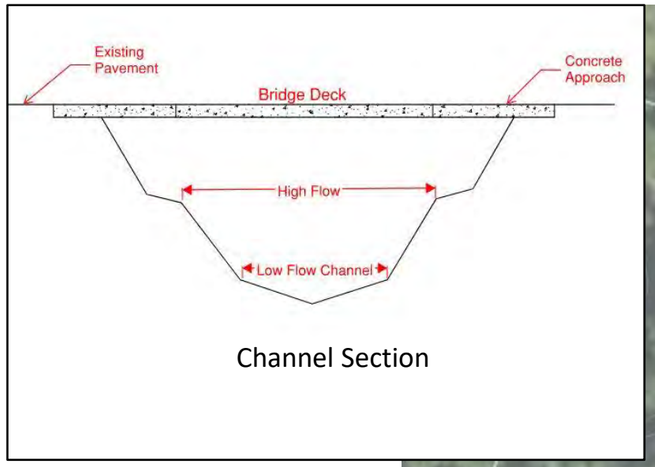
Replace existing culvert under Sidney Road SW with a proposed bottomless 14-ft wide box culvert using trenchless methods for installation.

This project aligns with the Ruby Creek Subrea Plan and Parks Plan.

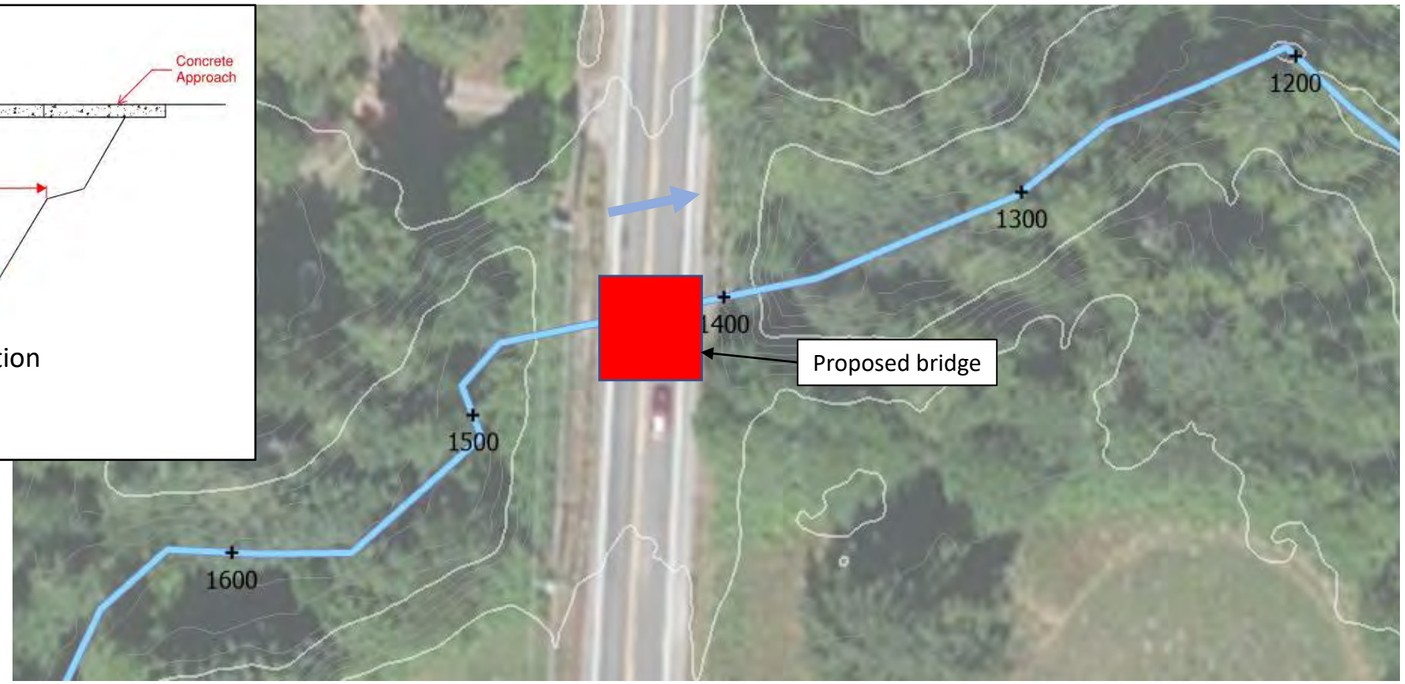
Permits Required

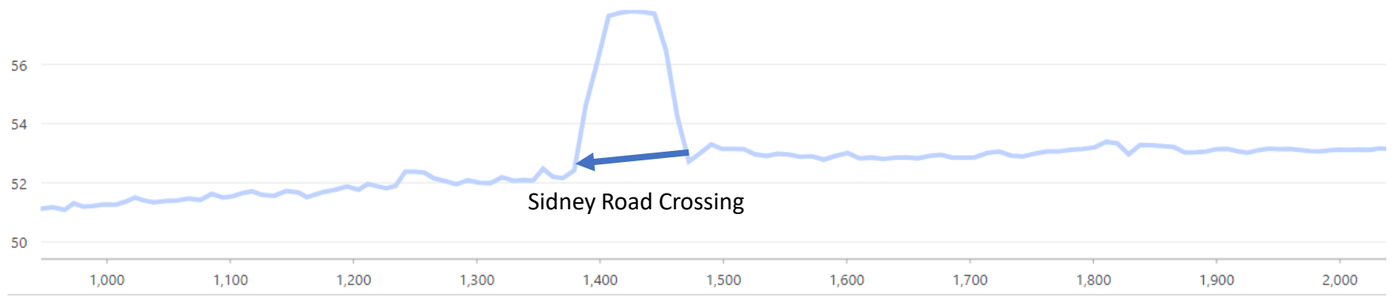
Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
SEPA DNS
Right-of-Way Permit
Commercial Permit
Critical Areas Documentation

Concept Site Plan



Channel Section





Distance (ft) from Blackjack Creek Confluence

Estimated Costs

Total Design + Permitting + Construction Cost (2022)
$1,600,000

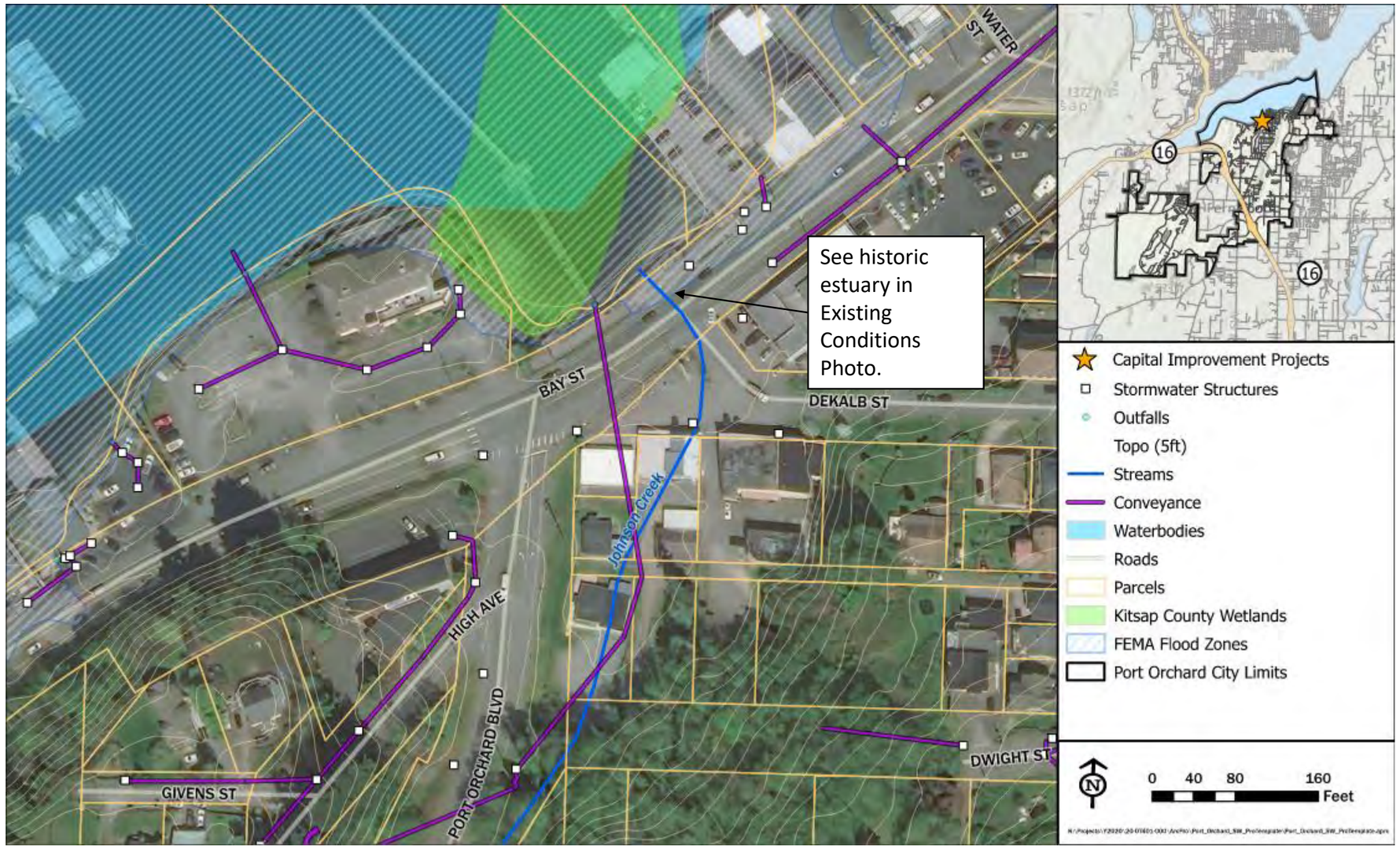
Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
5	0	5	10	5	0	10	35

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

JOHNSON CREEK ESTUARY RESTORATION

Existing Site Plan



Problem Description

Johnson Creek and its estuary were piped and filled during development of Port Orchard. Estuary habitat has been completely lost and fish passage is difficult at best. Several businesses and houses as well as SR 116 are built over the fill. Multiple major utility lines are routed along SR 116.

Existing Conditions

Johnson Creek shoreline area (historical estuary highlighted yellow)

Downstream end of culvert under public dock

Historical T-Sheet (#t1637, ca. 1881) showing extent of estuary fill

Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities	Other
• Johnson Creek Basin • Mouth of Johnson Creek, within middle to high end of tidal range of Sinclair Inlet	• Heavily constrained by existing structures, SR 116, and Port Orchard Boulevard	• Site is relatively flat and accessible	• Extensive fill • Area within historical tidal zone	• Marine Shoreline • Stream	• Multiple utilities cross Johnson Creek under SR 116	• Property acquisition is required

Port ORCHARD · HERRERA · ReidMiddleton · GeoEngineers

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

JOHNSON CREEK ESTUARY RESTORATION

Project Description

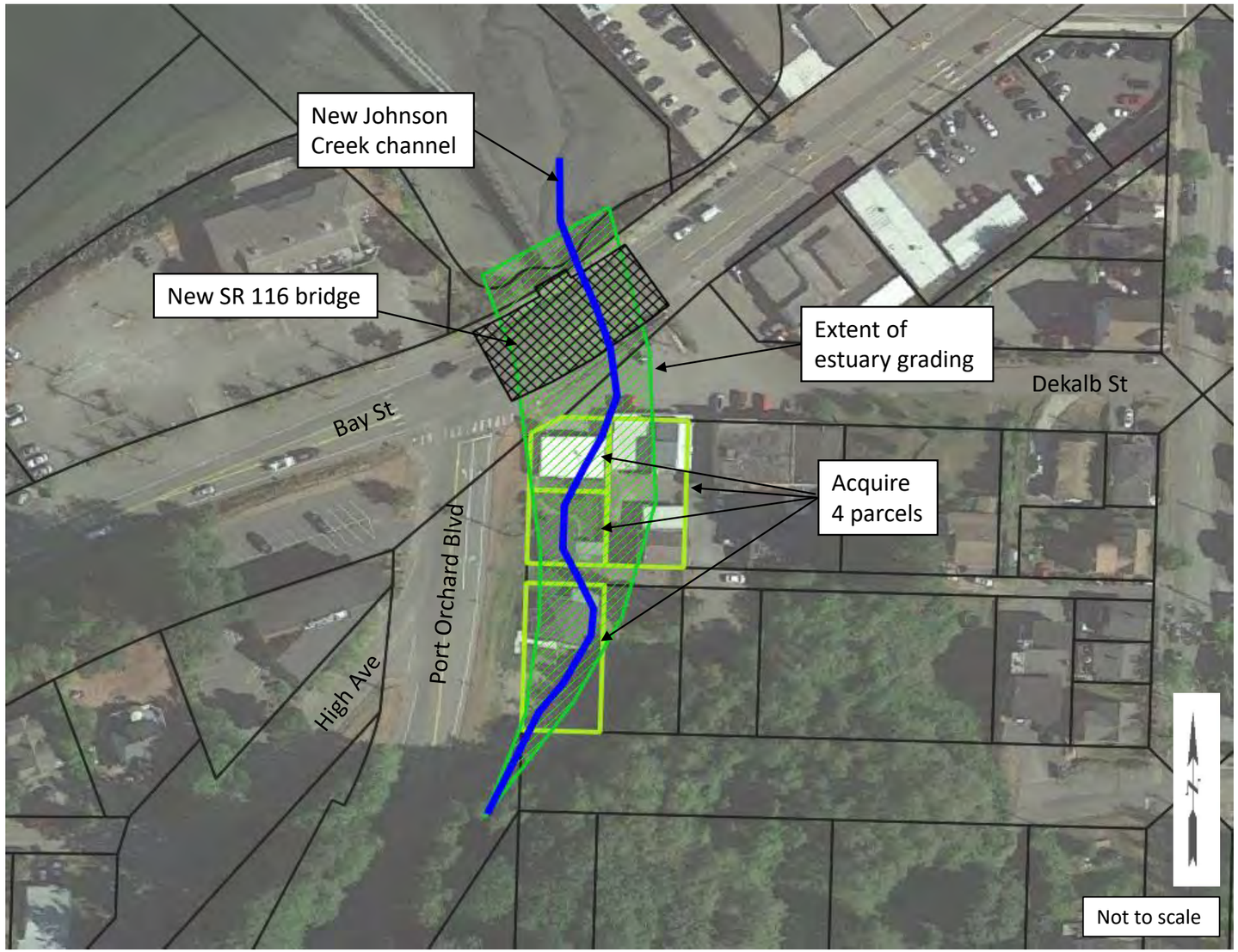
Restoration of the Johnson Creek Estuary will require acquisition of multiple properties prior to removal of structures and fill from the nearshore. Coordination with WSDOT will be required for construction of a bridge on SR 116, replacement of existing utility lines, and connection of pedestrian access to the public pier. Additional investigation of the stability of Port Orchard Boulevard will be required. The central location and nearby parking makes the estuary an excellent location for walkways, overlooks, and educational opportunities.

This project aligns with the Downtown Subarea Plan and Parks Plan.

Permits Required

Hydraulic Project Approval (WDFW)
USACE Section 404
SEPA DNS
Right-of-Way Permit
Cultural Resources (DHAP)
Critical Areas Documentation
Shoreline Permit

Concept Site Plan



Estimated Costs

Total Cost (2022)
Property Acquisition and Easements: $2,500,000 Planning, Design, and Permitting: $1,000,000 Construction: $2,500,000 **Total Project Cost: $6,000,000**

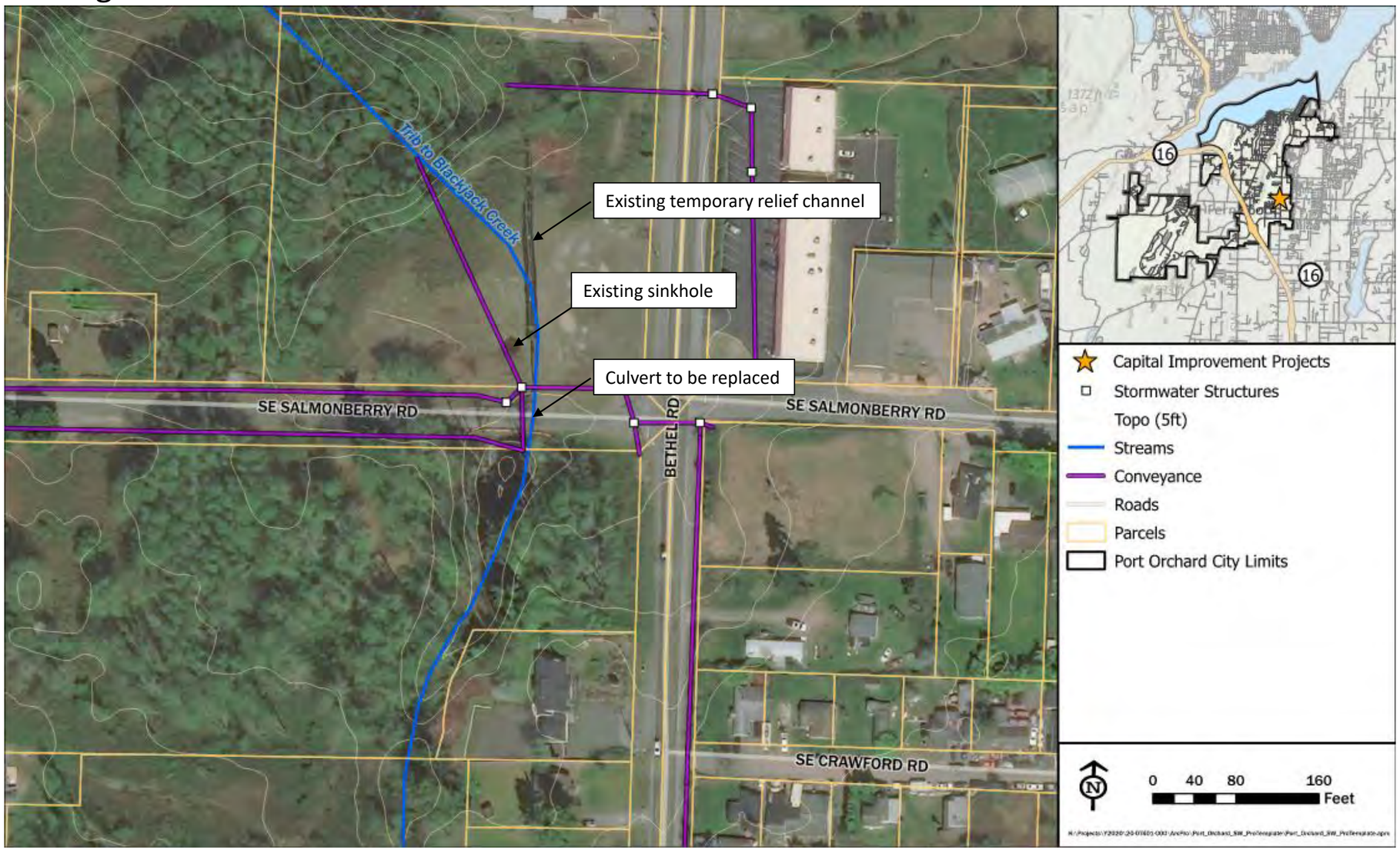
Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
5	10	5	15	10	10	15	70

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SE SALMONBERRY RD, LOWER BLACKJACK CREEK CULVERT RETROFIT

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities	Other
• Lower Blackjack Creek Basin • Wild Fish Conservancy (WFC) 2013 survey found the upstream headwaters at Bethel Road near Sylvis Lane	• SE Salmonberry Rd ROW • Will require property easements	• Flat road and culvert grades	• Site soils consist of Ragnar fine sandy loam	• Stream channel	• No existing water and sewer services within Salmonberry. • Storm culverts present	• WFC observed Type-F flow into the Salmonberry road culvert in 2013, pre-blockage

Problem Description

Previous work to convey stream channel under Salmonberry Road and through private property with a culvert has failed. Flooding occurs at the Salmonberry Road crossing. The culvert across the site is damaged and caused sinkhole on the property. Drainage fix with temporary relief channel and piping is not functioning properly.

Existing Conditions

Upstream stream/pond

Sinkhole on property from damaged culvert

Temporary relief channel dug on northern property

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SE SALMONBERRY RD, LOWER BLACKJACK CREEK CULVERT RETROFIT

Project Description

Remove and replace existing crossing culverts under SE Salmonberry Road with new storm conveyance system. New storm pipe system to extend from channel outfall to an existing swale channel west of the crossing. The swale drains to the Blackjack Creek tributary channel. It's anticipated that a fish passage culvert is not required since fish habitat only occurs north of SE Salmonberry Road.

This project is adjacent to the City's Bethel and Sedgwick Road Corridor Plan.

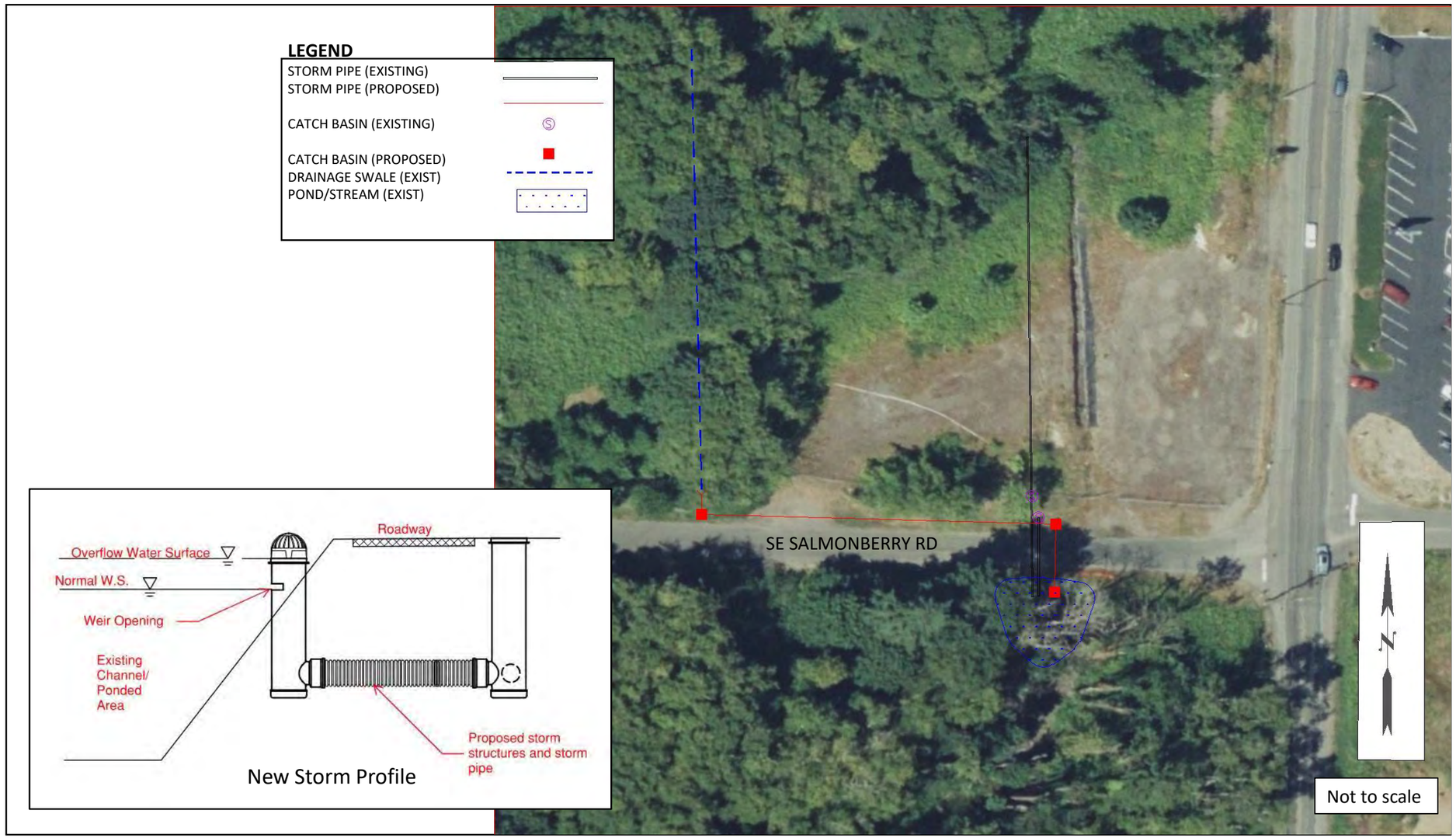
Permits Required

Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
SEPA DNS
Right-of-Way Permit
Commercial Permit
Critical Areas Documentation

Estimated Costs

Total Design + Permitting + Construction Cost (2022)
$300,000

Concept Site Plan



Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
15	0	5	5	10	0	5	40

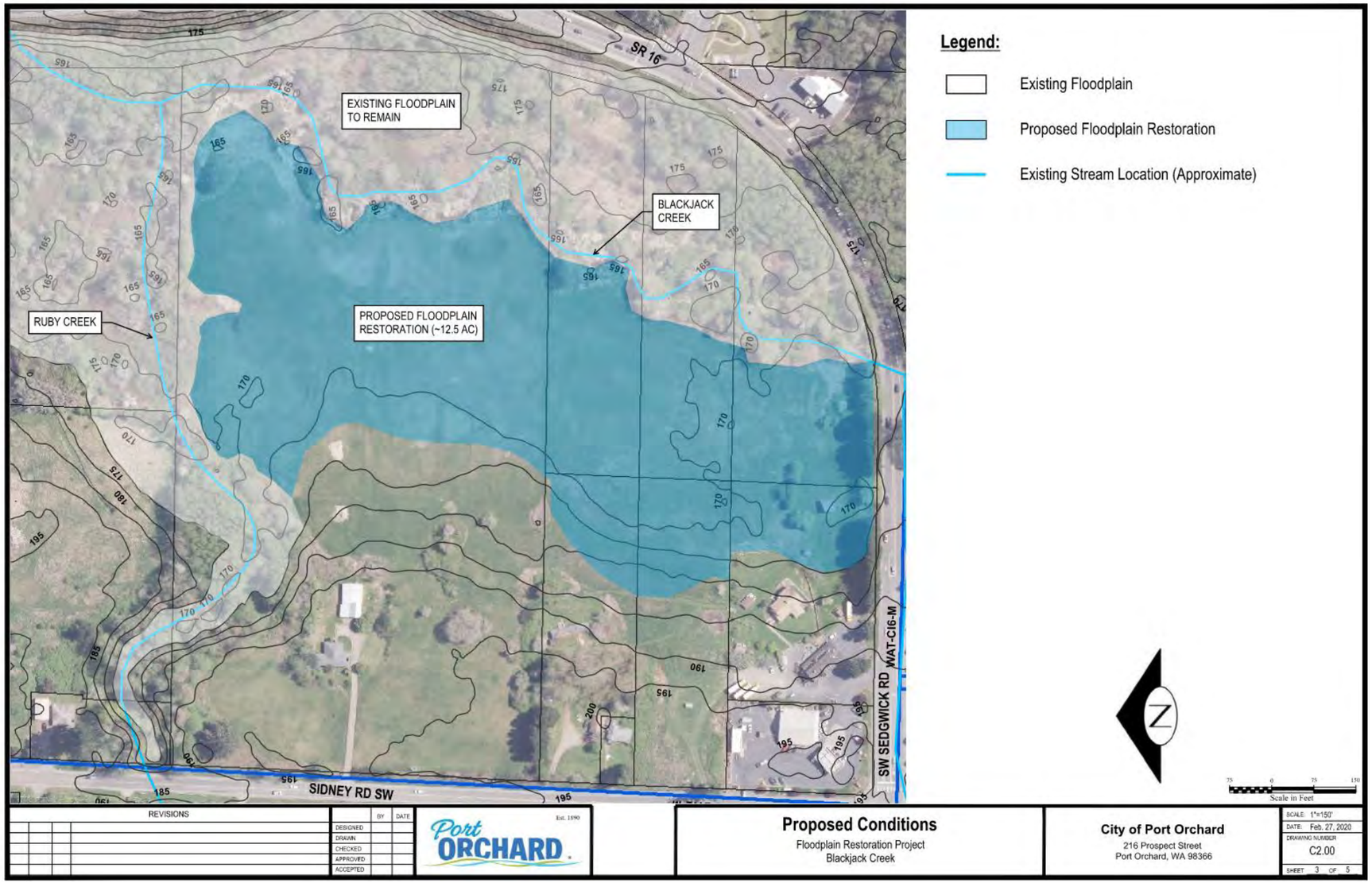
Port ORCHARD · HERRERA · ReidMiddleton · GeoEngineers

October 2022

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SOUTH BLACKJACK CREEK FLOODPLAIN RESTORATION

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities
• Stream with good fish habitat, but limited floodplain and wetland connectivity.	• Floodplain and wetland habitat, designated FEMA Flood Zone west of Blackjack Creek.	• Shallow gradient throughout open space, with slope upward towards Sidney Road SW.	• Soils in the flood zone are dominated by Kitsap silt loam and Bellingham silty clay loam.	• Freshwater emergent wetlands; Chinook and chum salmon and steelhead stream use; and FEMA flood zone.	• Existing water main along SW Sedgwick Road.

Problem Description

Existing reach of Blackjack Creek is confined along eastern edge of the open space with minimal floodplain and wetland connectivity. While the stream channel has good riparian cover, vegetation throughout the property is a mix of native and invasive species. A rock dam located approximately 50 feet upstream from the confluence with Ruby Creek likely contributes to the observed backwatered conditions and supports established wetlands within the floodplain.

Existing Conditions

Good riparian cover over stream

Adjacent floodplain and wetland habitat

Placed rock dam immediately downstream of confluence with Ruby Creek

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SOUTH BLACKJACK CREEK FLOODPLAIN RESTORATION

Project Description

The main objective of the project is to increase floodplain connectivity. The project includes creating alluvial streambeds for off channel habitat with depressional water storage and placing large woody debris on Blackjack and Ruby Creeks. A mix of coniferous trees and riparian understory will be planted to create a wetland forest complex. This project was designed by the City of Port Orchard. It may be impacted by upcoming work by the Washington Department of Transportation and Kitsap Transit on State Road (SR) 16 and SR 16 Park and Ride, respectively.

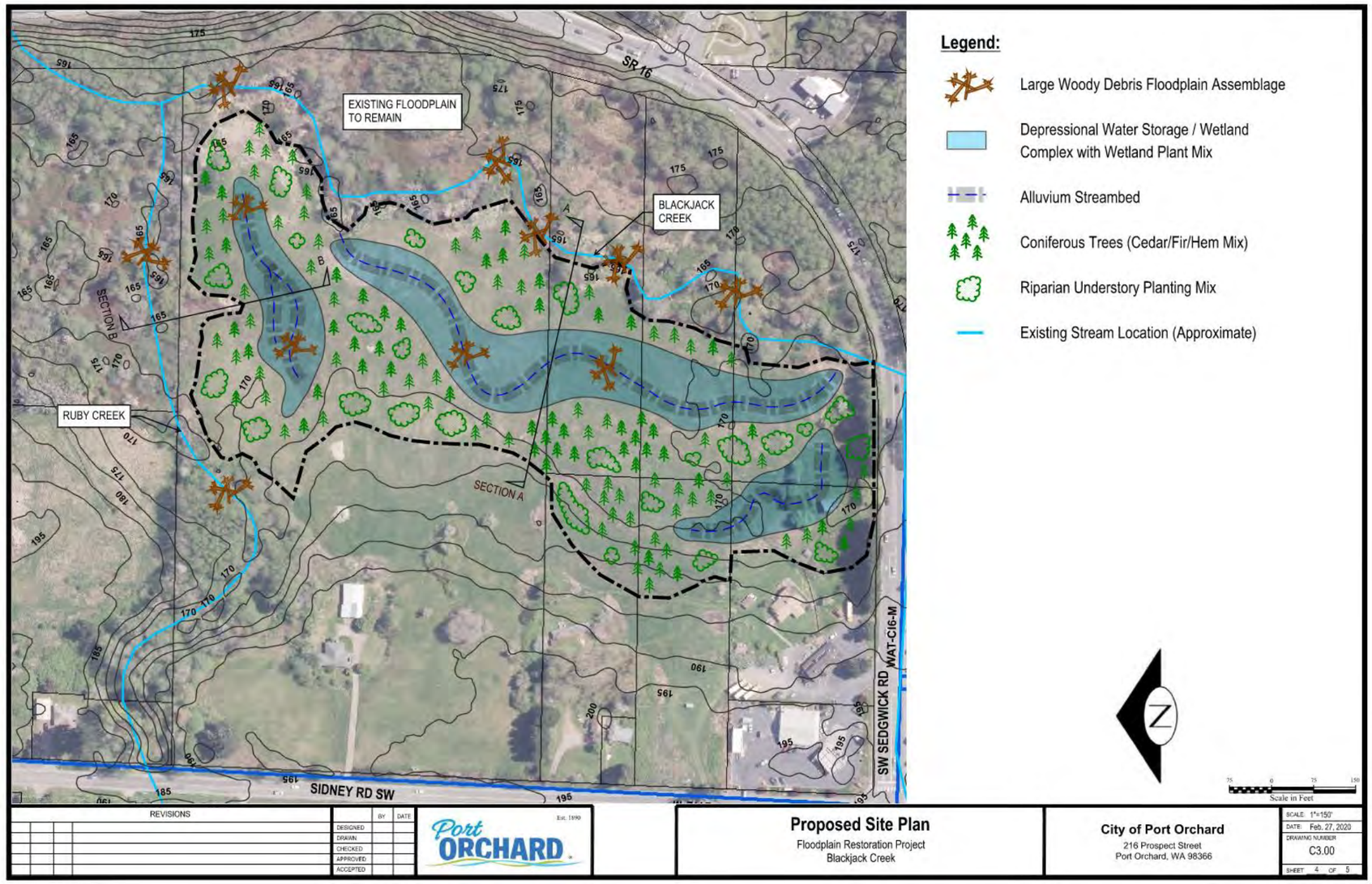
Permits Required

Section 7 ESA Consultation and Magnuson-Stevens Fishery and Conservation Act
Section 106 Review
SEPA DNS
Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
Critical Areas Documentation

Estimated Costs

Total Cost (2022)
Planning, Design, and Permitting: $1,000,000 Construction: $5,000,000 Property Acquisition: $1,000,000 **Total Project Cost: $7,000,000**

Concept Site Plan



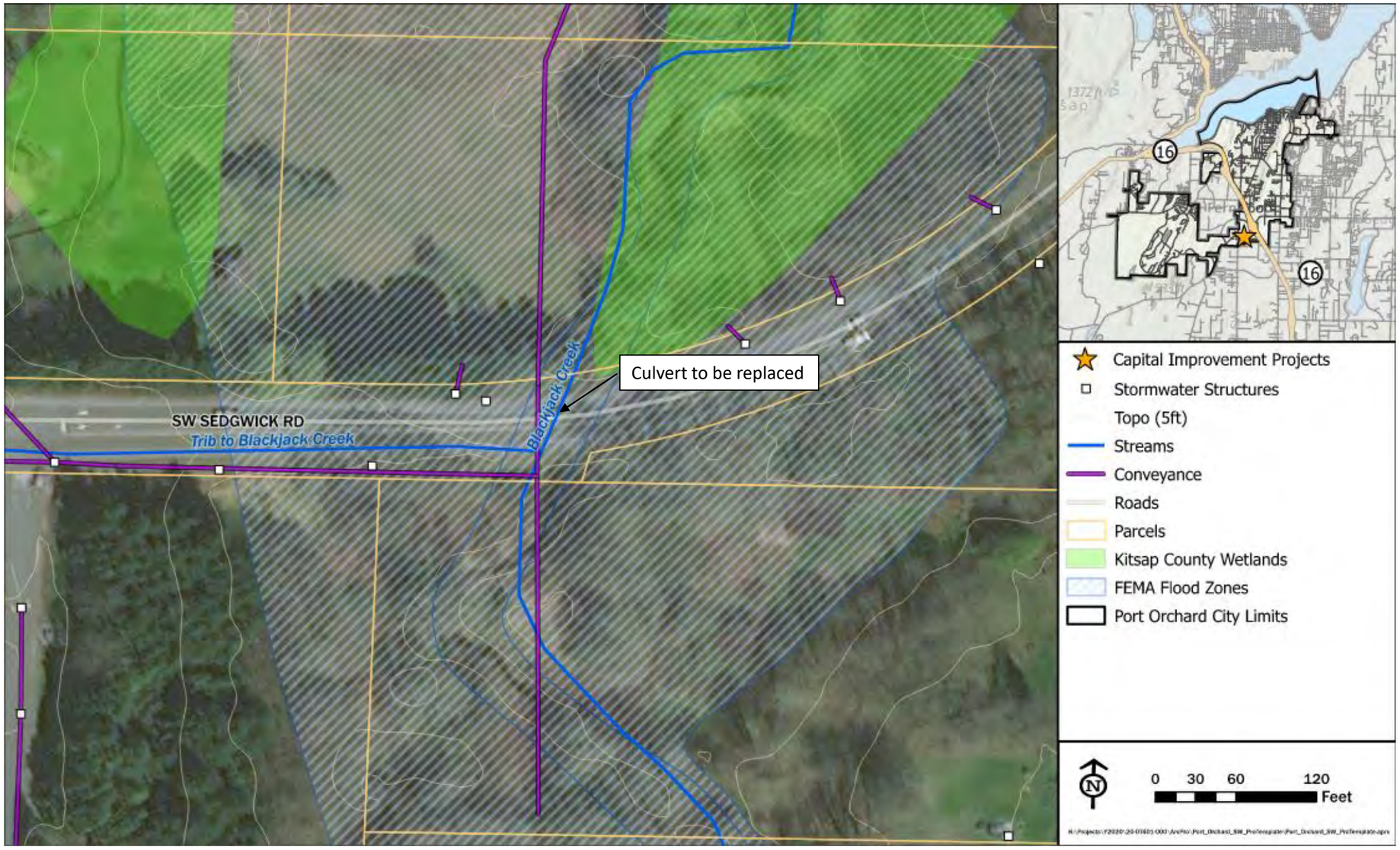
Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
15	0	15	15	0	5	5	55

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SOUTH BLACKJACK CREEK CULVERT REPLACEMENT

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities
• South Blackjack Creek Basin • Productive fish stream, areas of ditched channel through pasture and un-channelized wetland	• SW Sedgwick Road ROW • Need temporary construction easements on private property	• Flat road and culvert grades • Less than 5 feet of pipe cover	• Site soils consist of Bellingham silty clay loam	• Fish stream channel, FEMA flood zone, and overbank wetlands	• Existing water main within SW Sedgwick Road • Storm culverts present

Problem Description

Existing CMP culvert is undersized for the site and restricts ecological and floodplain function.

Existing Conditions

SW Sedgewick Road

Stream channel stretch upstream of crossing

Culvert inlet

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

SOUTH BLACKJACK CREEK CULVERT REPLACEMENT

Project Description

Replace existing culvert under SW Sedgwick Road with a bridge structure (40'x26'). A wider structure may be necessary to accommodate upstream debris potential and floodplain backwater effects. Further geomorphic investigation will be needed to access the stream sediment debris concerns.

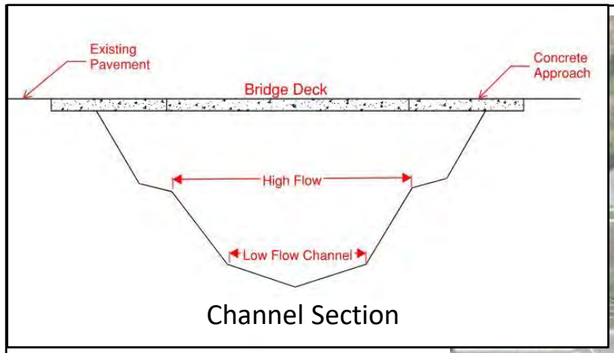
Permits Required

Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
SEPA DNS
Right-of-Way Permit
Commercial Permit
Critical Areas Documentation

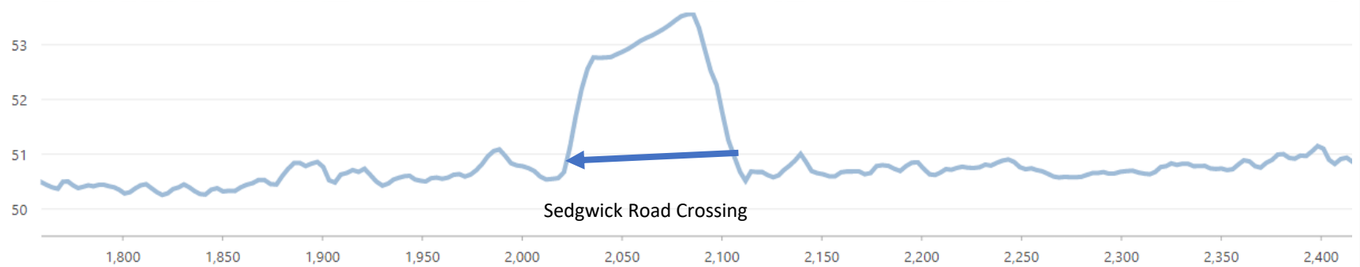
Estimated Costs

Total Design + Permitting + Construction Cost (2022)
$1,600,000

Concept Site Plan



Channel Section



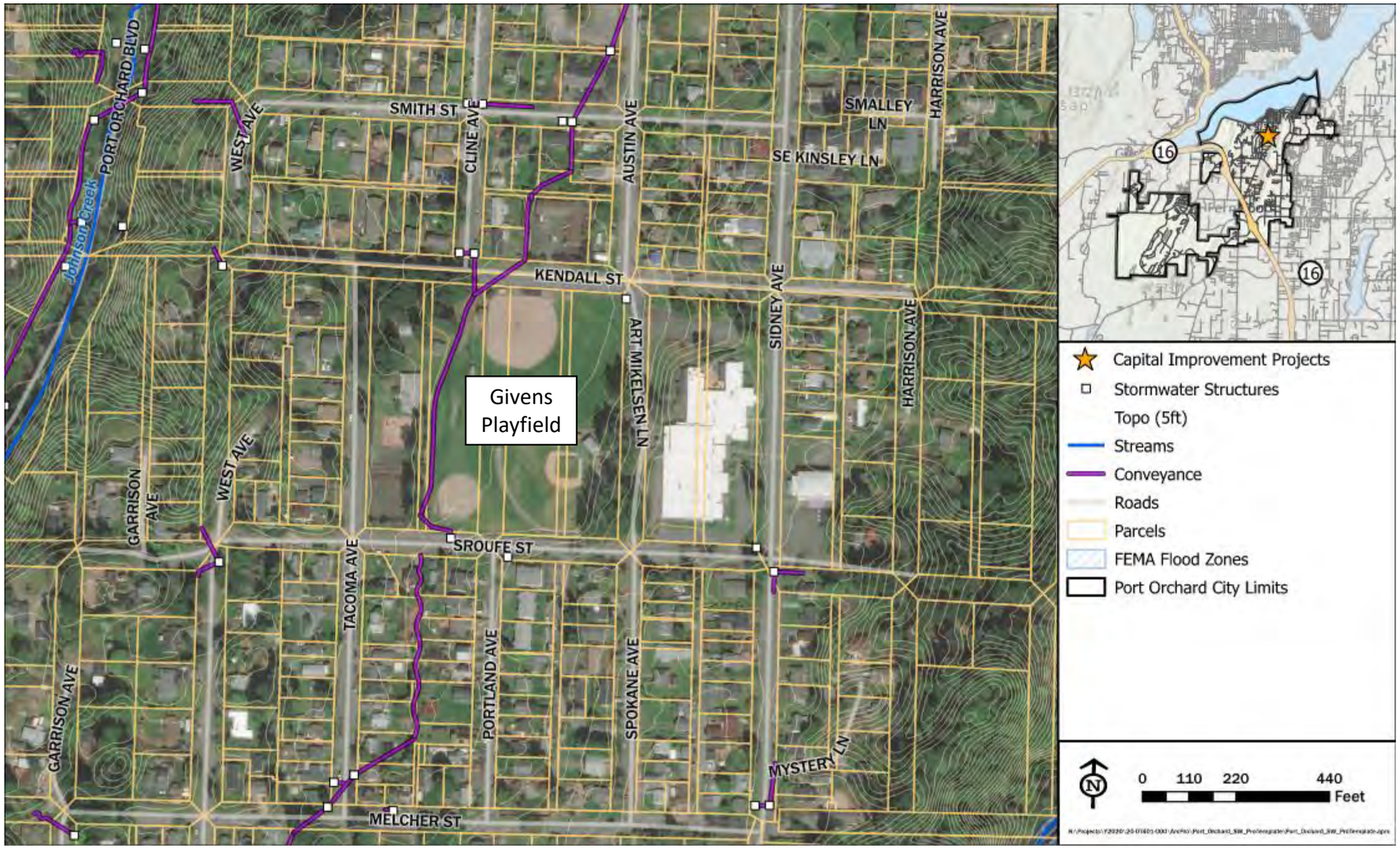
Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
5	15	10	5	5	0	10	35

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

CENTRAL SIDNEY STORMWATER IMPROVEMENTS

Existing Site Plan



Problem Description

Old and undersized stormwater infrastructure in the vicinity of Givens Playfield is resulting in frequent flooding of the roadway and private property. Stormwater runoff currently discharges untreated to Unnamed Stream (not shown) negatively affecting aquatic organisms.

Existing Conditions

Givens Playfield Facing East (Courtesy of Explore Port Orchard)

Givens Playfield Facing North (Courtesy of Google Earth)

Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities	Other
• Downtown-County Basin	• Available space is located near existing ditch and underneath the baseball fields	• Steeper slopes on eastern and southern sides of Givens Playfield	• Mostly Harstine gravelly ashy sandy loam (Hydrologic Soil Group C)	• No critical areas	• Existing stormwater ditch flows south to north through Givens Playfield • Overhead powerlines may be in conflict	• Givens Playfield is owned by the City of Port Orchard

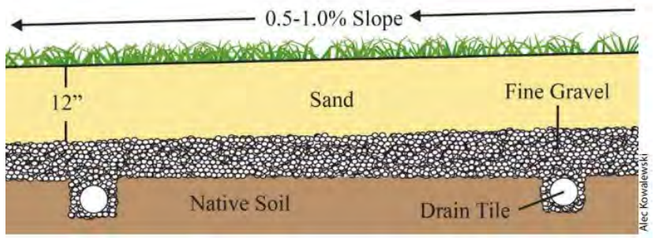
City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

CENTRAL SIDNEY STORMWATER IMPROVEMENTS

Project Description

Construct a bioswale through Givens Playfield to help convey flow and treat stormwater. Install new synthetic turf with a subsurface drainage system at Givens Playfield to provide additional flow control in accordance with current stormwater requirements.

Design Precedents



Subsurface Drainage Example (Courtesy of Pacific Northwest Extension)

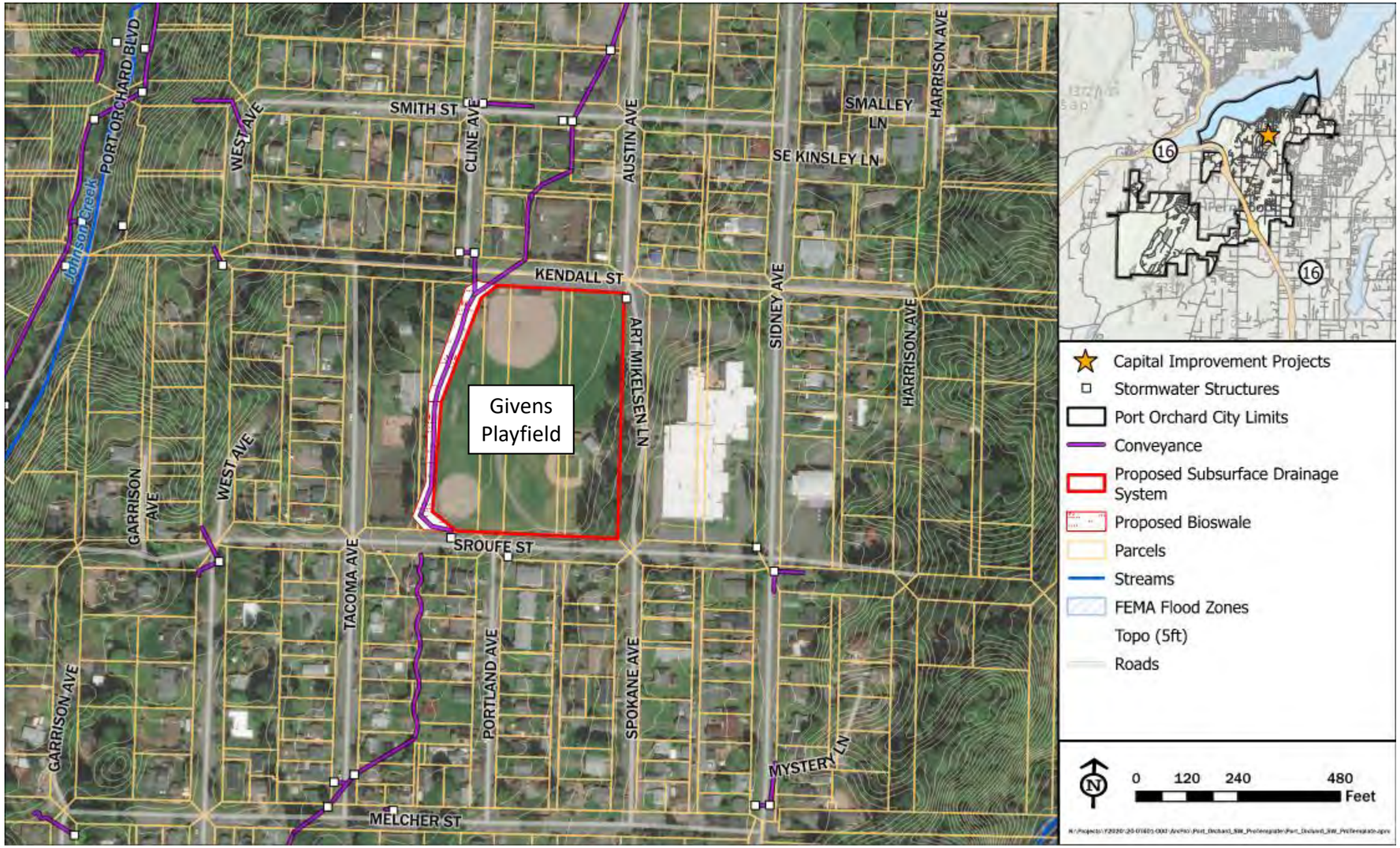
Bioswale Example

Estimated Costs

Total design + construction + permitting cost does not include lights, fencing, dugouts, walkways, and emergency vehicle access.

Total Design + Permitting + Construction Cost (2022)
$4,000,000

Concept Site Plan



Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
5	10	10	10	0	10	10	55

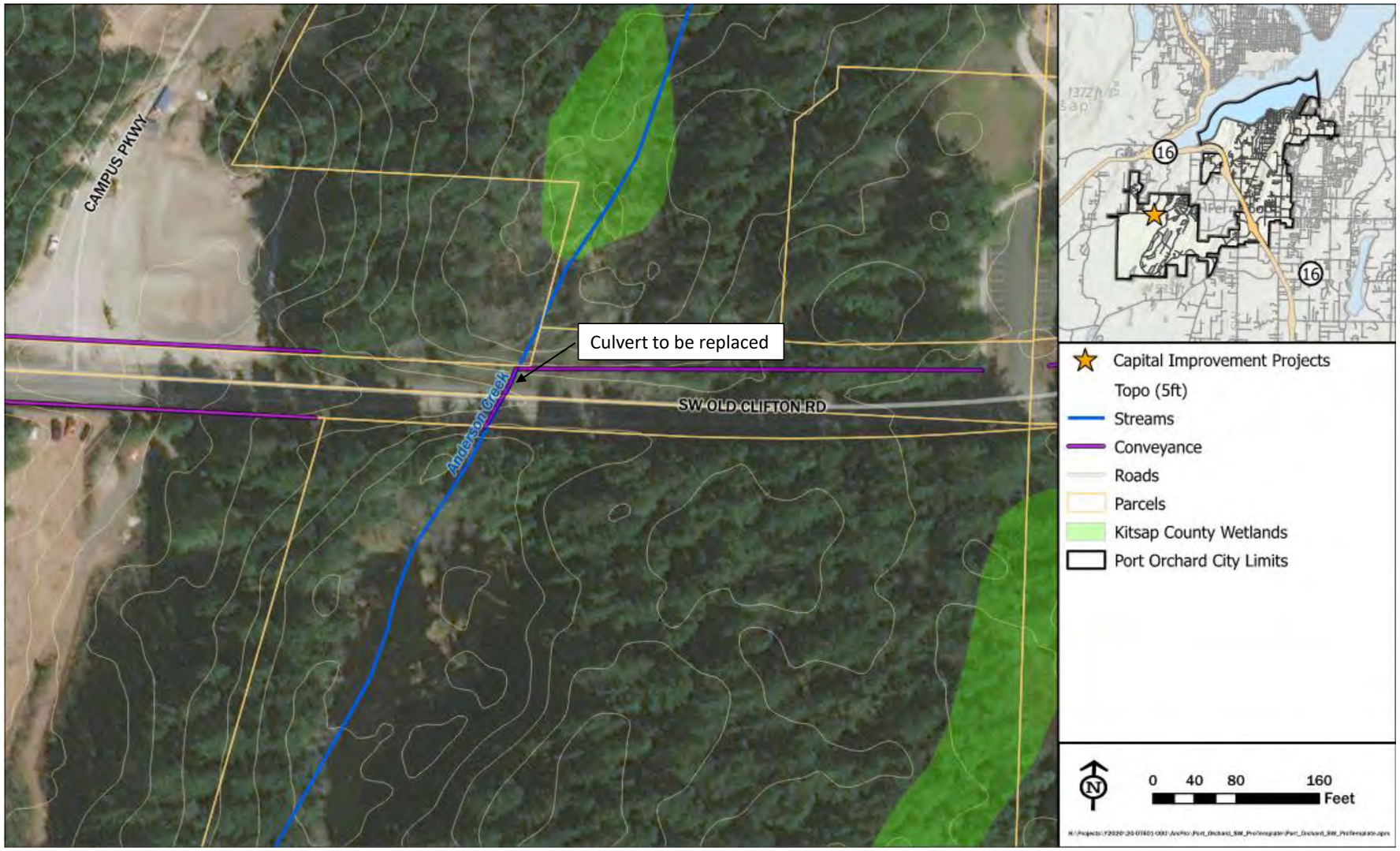
Port ORCHARD · HERRERA · ReidMiddleton · GeoEngineers

October 2022

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

ANDERSON CREEK CULVERT REPLACEMENT

Existing Site Plan



Site Characteristics and Constraints

Basin	Available Space	Grades and Elevations	Soils and Groundwater	Critical Areas	Utilities	Other
• Anderson Creek Basin • Crossing located in upper watershed • Tributary confluence ~2 miles downstream with multiple active and relic beaver ponds upstream and downstream	• Road ROW • City owned property downstream of crossing	• Flat stream grade • 15 feet of culvert cover	• Underlying soils consist of Shalcar muck • Very poorly drained soil	• Stream channel surrounded by wetlands and multiple beaver ponds	• Existing storm and water along Old Clifton Road • New development ongoing	• Semi-frequent wildlife/traffic incidents reported

Problem Description

The existing 36-inch concrete culvert is undersized and submerged due to upstream and downstream beaver activity, creating backwater conditions through the crossing.

Existing Conditions

Newly installed stormwater input at the crossing outlet

Channel conditions looking upstream from the crossing inlet

Wetland and stream conditions looking downstream from the crossing outlet

Port ORCHARD · HERRERA · ReidMiddleton · GeoEngineers

October 2022

City of Port Orchard Stormwater and Watersheds Comprehensive Plan – Capital Improvement Projects

ANDERSON CREEK CULVERT REPLACEMENT

Project Description

Replace existing 36-inch culvert with a bridge structure or large arch/box culvert to accommodate fish and wildlife passage through the crossing. A larger structure sized to accommodate flow, debris, and sediment transport during high flow events, including potential failure of the beaver dam will provide long-term resilience to local infrastructure and restore natural ecological processes.

Structure size likely 25 – 35 feet to accommodate geomorphic setting with wetlands and beaver activity.

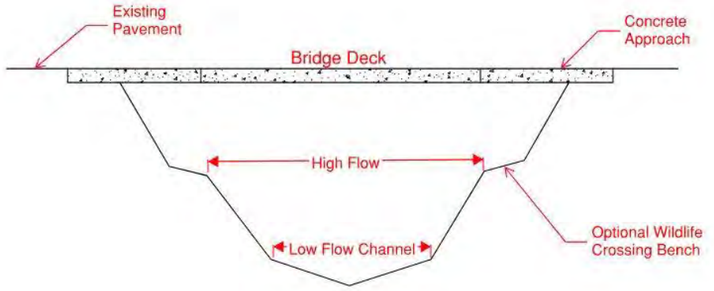
Permits Required

Hydraulic Project Approval (WDFW)
USACE Section 404 Permit
SEPA DNS
Right-of-Way Permit
Commercial Permit
Critical Areas Documentation

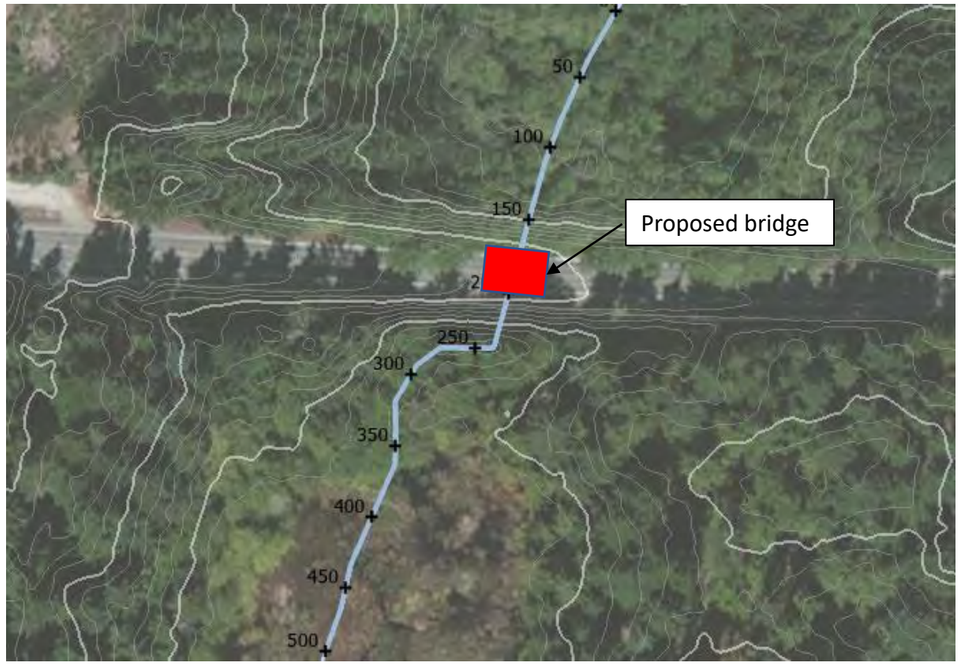
Estimated Costs

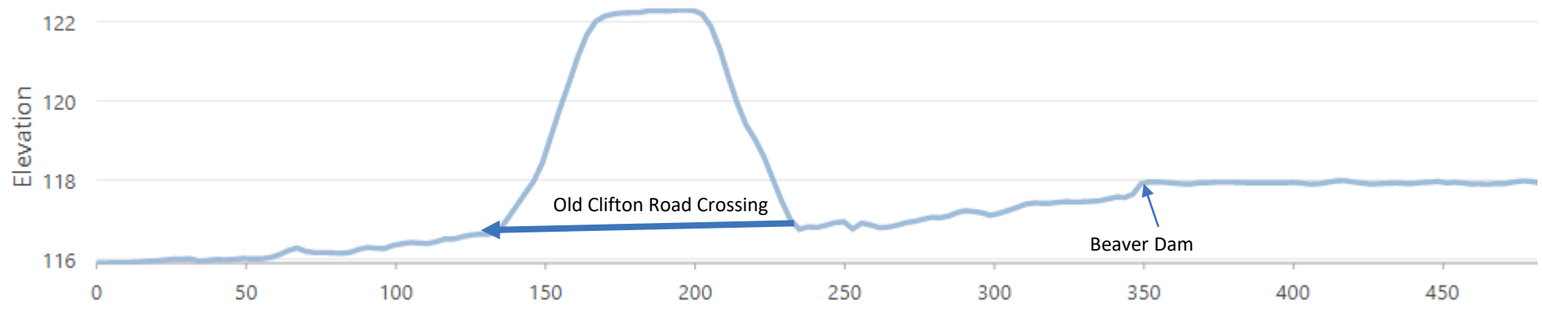
Total Design + Permitting + Construction Cost (2022)
$1,600,000

Concept Site Plan



Channel Section





Prioritization Matrix

Program Elements (0 - 15 Scale)							
Flood Reduction	Groundwater and Surface Water Quality	Groundwater and Surface Water Quantity	Habitat Enhancement	Infrastructure Operations and Maintenance	Public Participation (Education, Outreach, and Involvement)	Comprehensive Planning, Administration, and Funding	Total
5	0	5	10	5	0	5	30

APPENDIX B.3

Prioritization Results

		Anderson Creek Culvert Retrofits	Annapolis Creek Culvert Replacement	South Blackjack Creek Floodplain Restoration	Central Sidney Stormwater Improvements	Downtown Basin Stormwater Upgrades	Johnson Creek Estuary Restoration	Ruby Creek Culvert Replacement	SE Salmonberry Road, Lower Blackjack Creek Culvert Replacement	South Blackjack Creek Culvert Removal and Bridge Installation	South Sidney Regional Facility
Goals and Outcomes	**Primary Criteria**	**Habitat Enhancement**	**Flood Reduction**	**Groundwater and Surface Water Quality**	**Flood Reduction**	**Groundwater and Surface Water Quality**	**Groundwater and Surface Water Quality**	**Habitat Enhancement**	**Flood Reduction**	**Groundwater and Surface Water Quality**	**Flood Reduction**
Flood Reduction Outcomes	**Points**										
Prevents property damage caused by flooding or damage to other utilities	15		15	15		15			15		
Prevents flooding of a major street (arterial or larger)	10									10	
Prevent flooding of a low-volume street or improves City's ability to respond to flood events or minor nuisance flooding	5	5			5		5	5			5
No impact to flood reduction	0										
Groundwater and Surface Water Quality Improvement Outcomes	**Points**										
Major water quality improvements for receiving water bodies	15					15					15
Moderate water quality improvements for receiving water bodies or improves City's ability to control pollutants and perform water quality improvement activities	10				10		10				
Minor water quality improvements for receiving water bodies	5										
No water quality improvements for receiving water bodies	0	0	0	0				0	0	0	
Groundwater and Surface Water Quantity Improvement Outcomes	**Points**										
Major improvements to summer streamflow and/or groundwater supply	15			15							
Moderate improvements to summer streamflow and/or groundwater supply	10				10						10
Minor improvements to summer streamflow and/or groundwater supply	5	5	5				5	5	5	5	
No improvements to summer streamflow and/or groundwater supply	0					0					
Habitat Enhancement Outcomes	**Points**										
Corrects a significant fish passage barrier or creates significant habitat	15			15			15				
Corrects a fish passage barrier (but immediate benefits are limited due to other barriers) or creates a moderate amount of new habitat/public amenity	10	10	10		10			10			10
Minor improvements to habitat or public amenity	5								5	5	
No habitat enhancement	0					0					
Infrastructure Operations and Maintenance Outcomes	**Points**										
Major reduction level of effort needed by operations and maintenance	15										
Moderate reduction of level of effort needed by operations and maintenance	10					10	10		10		
Minor reduction of level of effort needed by operations and maintenance	5	5	5					5		5	
No benefit to operations and maintenance personnel	0			0	0						0
Public Participation (Education, Outreach, and Involvement) Outcomes	**Points**										
High-level opportunity for public participation	15										15
Mid-level opportunity for public participation	10				10		10				
Limited opportunity for public participation	5			5							
No opportunity for public participation	0	0	0			0		0	0	0	
Comprehensive Planning, Administration, and Funding Outcomes	**Points**										
Strong candidate for external funding (e.g., fish passage grant, water quality grant, transportation grant)	15					15	15				15
Average candidate for external funding (e.g., fish passage grant, water quality grant, transportation grant)	10		10		10			10		10	
Weak candidate for external funding (e.g., fish passage grant, water quality grant, transportation grant)	5	5		5					5		
Not a candidate for external funding	0										
TOTAL SCORE		**30**	**45**	**55**	**55**	**55**	**70**	**35**	**40**	**35**	**70**
RANK		**10**	**6**	**3**	**3**	**3**	**1**	**8**	**7**	**8**	**1**

APPENDIX B.4

Level 2 and Level 3 Implementation Schedules

City of Port Orchard Stormwater and Watersheds Capital Improvement Program (CIP) Projects
Stormwater and Watersheds Long-term CIP Project Implementation Schedule
Herrera Environmental Consultants

Level 2 includes:
Implementation of all projects within 20 years
Moderate grant funding. (projects would not proceed without grants)
Earlier implementation of Johnson Creek Estuary Restoration (begin 2027) and Downtown Basin Stormwater Upgrades (2024)
Infrastructucture rehab replacement funding increases to $1M+ per year in 2024 and continues through 2042 - Downtown Basin Plan Implementation and then $1M per year for ongoing conveyance system rehab / replacement
No funding for projects that are not currently defined aside from infrastructure rehab above.
Costs in 2022 dollars.

Project Name (Prioritization Score)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total Cost to City
South Sidney Regional Facility (70)		$700,000		$2,800,000																	
South Sidney Regional Facility (70) - SFAP Grant 50%		-$350,000		-$1,400,000																	
Johnson Creek Estuary Restoration (70)					$2,500,000	$500,000	$500,000	$2,500,000													
Johnson Creek Estuary Restoration - Estuary restoration, floodplains by design grant 50%					-$1,250,000	-$250,000	-$250,000	-$1,250,000													
South Blackjack Creek Floodplain Restoration (55)											$1,000,000	$1,000,000	$5,000,000								
South Blackjack Creek Floodplain Restoration - Salmon Recovery 50%											-$500,000	-$500,000	-$2,500,000								
Downtown Basin Stormwater Upgrades (55)		$1,760,000	$1,100,000	$982,000																	
Downtown Basin Stormwater Upgrades - Low Interest Loan																					
Ongoing Conveyance System Rehab / Replacement Program	$100,000	$100,000			$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	
Central Sidney Stormwater Improvements (55)															$500,000	$3,500,000					
Central Sidney Stormwater Improvements - SFAP Grant 50%															-$250,000	-$1,750,000					
Annapolis Creek Culvert Replacement (45)		$400,000	$800,000																		
Annapolis Creek Culvert Replacement - Brian Abbott Grant 50%		-$200,000	-$400,000																		
SE Salmonberry Road, Lower Blackjack Creek Culvert Retrofit (40)									$300,000												
None																					
South Blackjack Creek Culvert Removal and Bridge Installation (35)													$400,000	$1,200,000							
South Blackjack Creek Culvert Removal and Bridge Installation - Fish Passage Grant (TBD) 50%													-$200,000	-$600,000							
Ruby Creek Culvert Replacement (35)					$400,000	$1,200,000															
Ruby Creek Culvert Replacement - Brian Abbott Grant 50%					-$200,000	-$600,000															
Anderson Creek Culvert Replacement (30)																	$400,000	$1,200,000			
Anderson Creek Culvert Replacement - Fish Passage Grant (TBD) 50%																	-$200,000	-$600,000			
TOTAL - Cost to City (CIP Cost - Grant Funding)	**$100,000**	**$2,410,000**	**$1,500,000**	**$2,382,000**	**$2,450,000**	**$1,850,000**	**$1,250,000**	**$2,250,000**	**$1,300,000**	**$1,000,000**	**$1,500,000**	**$1,500,000**	**$3,700,000**	**$1,600,000**	**$1,250,000**	**$2,750,000**	**$1,200,000**	**$1,600,000**	**$1,000,000**	**$1,000,000**	**$33,592,000**

City of Port Orchard Stormwater and Watersheds Capital Improvement Program (CIP) Projects
Stormwater and Watersheds Long-term CIP Project Implementation Schedule
Herrera Environmental Consultants

Level 3 includes:

Implementation of all projects within 6 years.
No grant funding.
Infrastructucture rehab replacement funding of $1M per year begins in 2028 and continues through 2042.
No funding for projects that are not currently defined aside from infrastructure rehab above.
Costs in 2022 dollars.

Project Name (Prioritization Score)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total Cost to City
South Sidney Regional Facility (70)		$700,000	$700,000	$2,100,000																	
Johnson Creek Estuary Restoration (70)		$2,500,000	$500,000	$500,000	$2,500,000																
South Blackjack Creek Floodplain Restoration (55)			$1,000,000	$5,000,000																	
Downtown Basin Stormwater Upgrades (55)			$1,760,000	$1,100,000	$982,000																
Ongoing Conveyance System Rehab / Replacement Program	$100,000	$100,000				$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	
Central Sidney Stormwater Improvements (55)				$500,000	$3,500,000																
Annapolis Creek Culvert Replacement (45)					$400,000	$800,000															
SE Salmonberry Road, Lower Blackjack Creek Culvert Retrofit (40)						$300,000															
South Blackjack Creek Culvert Removal and Bridge Installation (35)					$400,000	$1,200,000															
Ruby Creek Culvert Replacement (35)					$400,000	$1,200,000															
Anderson Creek Culvert Replacement (30)					$400,000	$1,200,000															
TOTAL	**$100,000**	**$3,300,000**	**$3,960,000**	**$9,200,000**	**$8,582,000**	**$5,700,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$44,842,000**

APPENDIX C

Stormwater Management Action Plan

CITY OF PORT ORCHARD
STORMWATER MANAGEMENT ACTION PLAN

Prepared for
City of Port Orchard

Prepared by
Herrera Environmental Consultants, Inc.

HERRERA

Note:
Some pages in this document have been purposely skipped or blank pages inserted so that this document will print correctly when duplexed.

CITY OF PORT ORCHARD
STORMWATER MANAGEMENT ACTION PLAN

Prepared for
Zack Holt
City of Port Orchard
216 Prospect Street
Port Orchard, Washington 98366

Prepared by
Herrera Environmental Consultants, Inc.
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
Telephone: 206-441-9080

October 24, 2022

CONTENTS

APPENDICES

TABLES

FIGURES

PURPOSE

The City of Port Orchard (City) Stormwater Management Action Plan (SMAP) is prepared pursuant to requirements of S5.C.1.d.iii of the 2019 -2024 Western Washington Phase II National Pollutant Discharge Elimination System (NPDES) Stormwater Permit issued by the Washington Department of Ecology (Ecology).

The Plan is organized according to the permit language and identifies the following for the high priority catchment located in the Lower Blackjack Creek watershed:

A description of the stormwater facility retrofits needed for the area, including the best management practice (BMP) types and preferred locations.

Land management/development strategies and/or actions identified for water quality management.

Targeted, enhanced, or customized implementation of stormwater management actions related to permit sections within S5, including:

Illicit discharge detection and elimination (IDDE) field screening,

Prioritization of Source Control inspections,

Operations and Maintenance (O&M) inspections or enhanced maintenance, or

Public Education and Outreach behavior change programs.

If applicable, identification of changes needed to local long-range plans, to address SMAP priorities.

A proposed implementation schedule and budget sources for:

Short-term actions (i.e., actions to be accomplished within six years), and

Long-term actions (i.e., actions to be accomplished within seven to 20 years).

A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.

BACKGROUND

The City completed the "City of Port Orchard Watershed Inventory and Assessment" March 21, 2022 (Herrera 2022a) and the "City of Port Orchard Watershed Prioritization" June 22, 2022 (Herrera 2022b). Additionally, the City is in the process of developing their "Stormwater and Watersheds Comprehensive Plan", anticipated in 2023. This SMAP will be incorporated within the stormwater comprehensive planning process when developing programmatic and capital improvement programs. Additionally, much of the watershed data and analysis conducted for meeting the SMAP permit requirements will serve to better understand stormwater pressures upon water resources on a watershed basis.

WATERSHED PRIORITIZATION SUMMARY

Eighteen watersheds were originally identified during the first step of the City's watershed inventory. Thirteen watersheds were removed from the prioritization process due to low or no City stormwater influence or because the watershed was smaller than the 400 acre size threshold identified by Ecology in their SMAP guidance (Ecology 2019). The remaining five candidate watersheds were subjected to a prioritization and scoring process. The prioritization process resulted in selection of Lower Blackjack Creek watershed as the highest priority watershed based on the following characteristics:

High receiving water use support

Moderate level of development and future growth

Good water and habitat condition

Highest jurisdiction control

Promotes other plans and projects, most notably the Blackjack Creek Watershed Assessment Plan and Protection and Restoration Plan (ESA 2017).

LOWER BLACKJACK CREEK WATERSHED FUNCTION

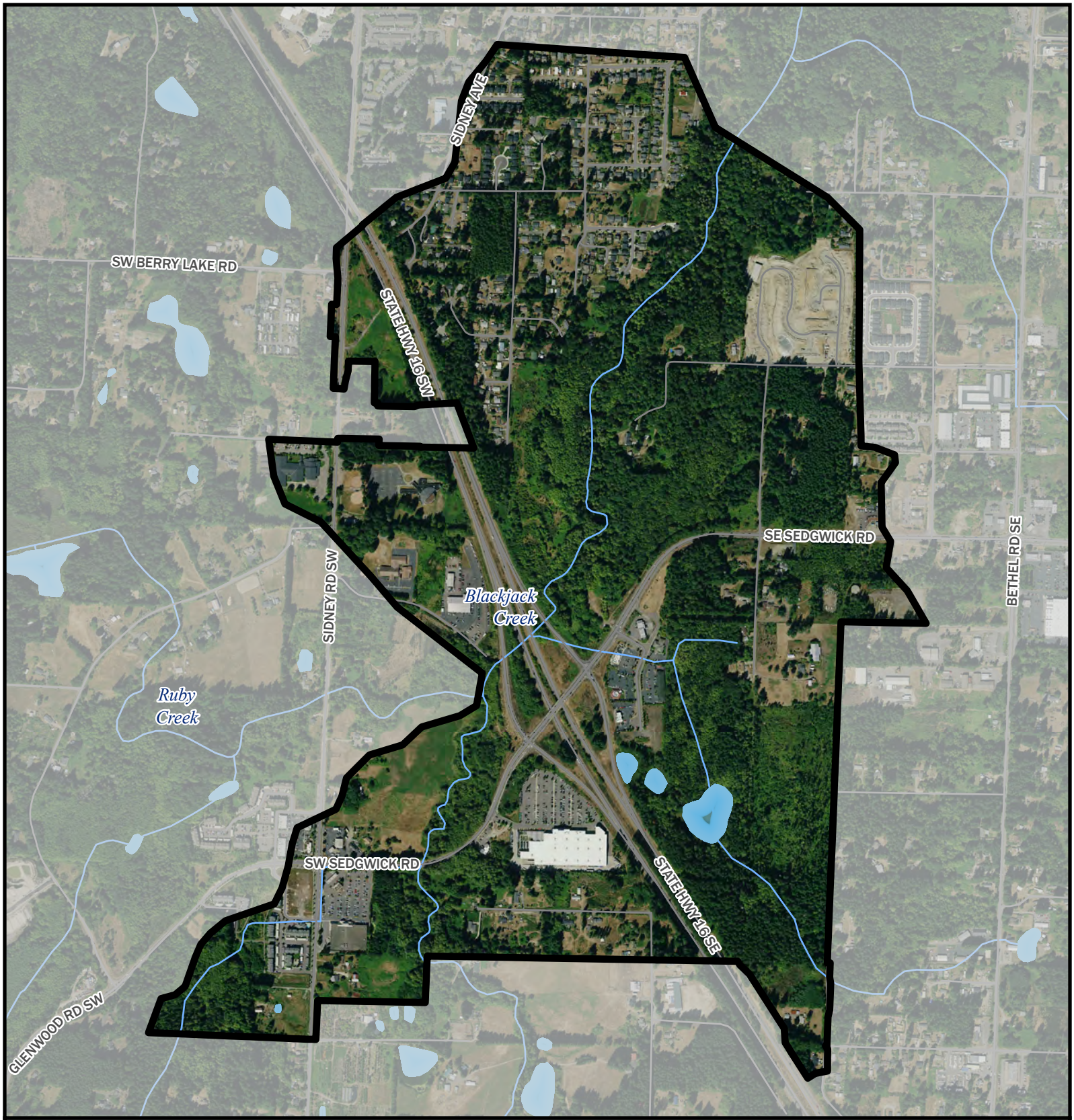
Lower Blackjack Creek watershed processes are considered "functioning" for hydrologic regime, sediment regime, riparian areas and wetlands, nutrient supply, floodplain channel interactions, habitat connectivity, fish passage and water quality (ESA 2017). Organic matter input is rated "Moderately Impaired" However, elevated summer stream temperatures and low dissolved oxygen levels are a concern.

Lower Blackjack Creek supports an abundance of salmonid species. The creek supports spawning and rearing activity for fall and summer chum and coastal cutthroat trout. The stream corridor supports migration of coho salmon to extensive upper watershed areas for spawning and rearing. Blackjack Creek is included in the area for endangered species for fall chinook and winter steelhead.

Lower Blackjack Creek stream health is good based upon aquatic insect scores. Aquatic insect diversity is monitored at multiple locations within the Lower Blackjack Creek watershed. This benthic index of biotic integrity (B-IBI) and many of the sub-indexes are strongly correlated with stormwater impacts (both erosive flows and water quality). Station KCSSWM-035 (Blackjack Middle) was monitored for 7 years between 2011 to 2021 with an average score of 52 and a standard deviation of 12. Scores range from 33 (2014) to 76 (2019). Overall, the stream aquatic

insect community index is classified as "Fair", where some years the score classifies as "Poor" and other years as "Good" (Puget Sound Benthos Database, 2022).

The watershed was subdivided into three catchments, A, B and C, and Catchment A was selected for development of the SMAP. This catchment has a greater concentration of older development for retrofit opportunities. Catchment A is depicted in Figure 1.



Legend

- Port Orchard City Limits
- Lower Blackjack Creek Watershed
- Catchment Boundary
- Waterbody
- City Roads
- Stream

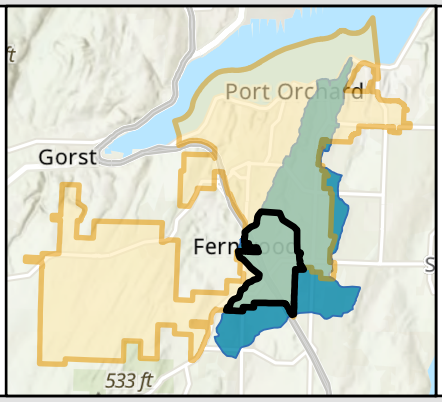


Figure 1. Lower Blackjack Creek Catchment A Overview Map.

0 500 1,000 2,000 Feet

HERRERA

Kitsap County, 2020

\\SEA-FILE-GIS01\gis-k\Projects\Y2020\20-07401-000\ArcPro\SMAP_PlanMaps\SMAP_PlanMaps.aprx

CATCHMENT CONDITIONS

Below is a brief description of the catchment for land use, growth and City stormwater influence. This information provides background about Catchment A existing characteristics and potential future conditions considered during development of the SMAP.

Land Use and Future Growth

Catchment A is 615 acres. Land use is diverse and comprised of commercial, single-family residential, multi-family residential, high use state highways and City roads. Vacant lands are targeted for development and the watershed within the City limits is developing rapidly. The City of Port Orchard, due to its proximity to the urban centers of Bremerton and Tacoma and connection to Seattle via ferry transportation, is designated as a "high capacity transit community" by the Puget Sound Regional Council (Puget Sound Regional Coordination Council, 2020). The City is expected to grow as much as 36% by 2044 (Kitsap Regional Coordinating Council, 2022).

Stormwater Influence

The City has four major stormwater outfalls (greater than 24" diameter) within Catchment A , and multiple smaller outfalls. Washington State Department of Transportation also discharges runoff within the catchment. Fourteen public and private stormwater ponds are located within the catchment.

STORMWATER MANAGEMENT ACTIONS

PROCESS TO IDENTIFY STORMWATER MANAGEMENT ACTIONS

The process to identity stormwater management actions included a detailed evaluation of landscape characteristics and the existing stormwater system. Landscape characteristics reviewed included zoning, vacant lands, stream buffers, wetlands, geohazard areas and roadways . In general, actions potentially effective to protect the receiving water of Lower Blackjack Creek were identified. All retrofit projects are one-time actions. However, programmatic and land management strategy actions can be conducted one time, annually during the term, or conducted during a three-year pilot project. Annual and pilot projects are evaluated to determine if it is beneficial to continue the action or to end the action due to completion, or if the action is determined to be ineffective.

The assessment of the stormwater system included identifying stormwater ponds (both City and private) and stormwater outfalls. Stormwater pond owners were identified and the year the pond built determined to assess the level of water quality and or flow control according to the design requirements of the era it was designed. For all roadways the owners (City or State) were identified. Current capital improvement projects (CIPs) that improve stormwater quality and/or flow control or floodplain reconnection were identified including the location, drainage area, and best management practice (BMP) type. Existing and future potential partnerships with local agencies were also reviewed.

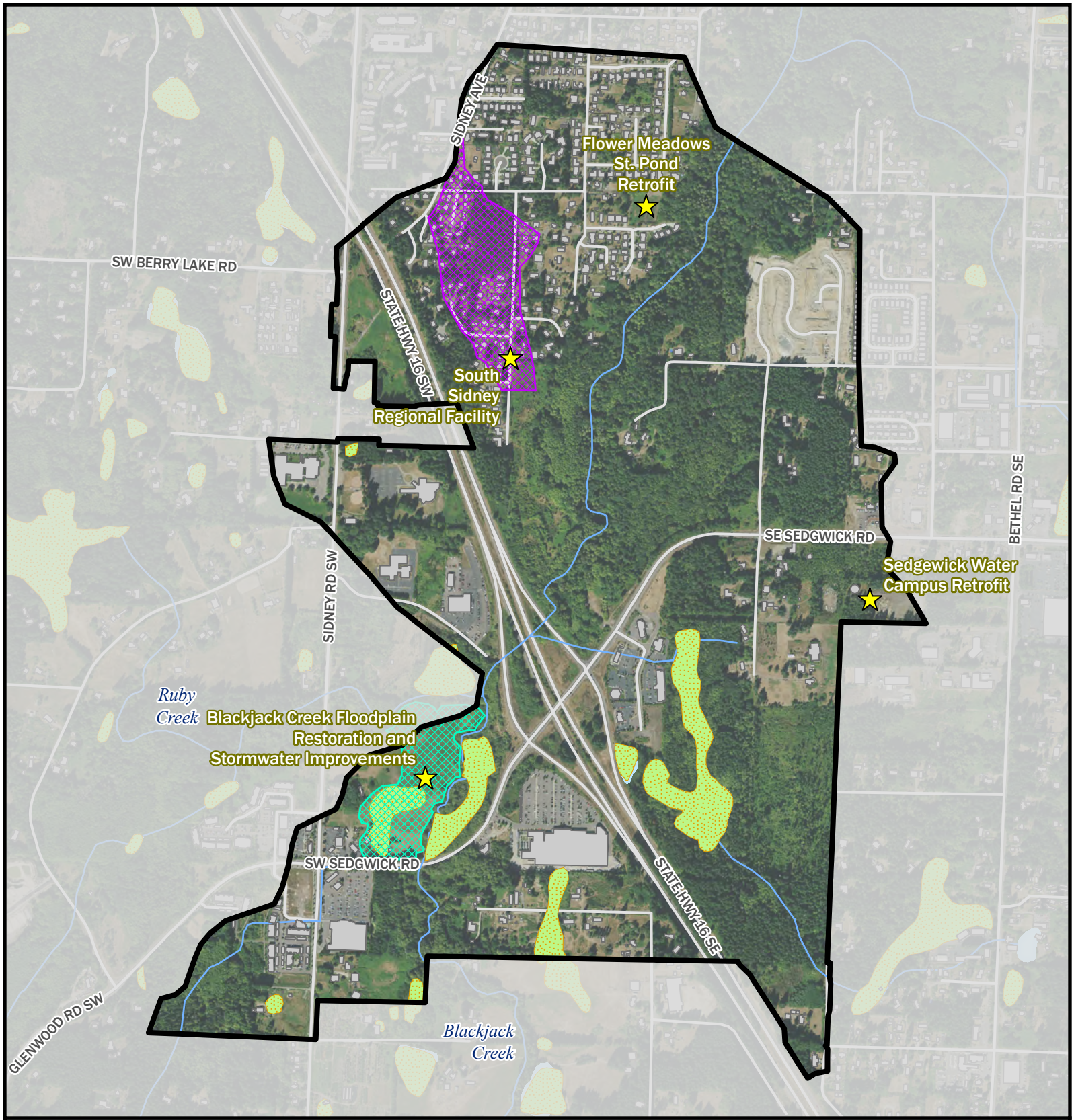
Based on this information a series of 'actions' were identified to further protect and/or enhance ecosystem function of Catchment A. The actions cover three categories: strategic retrofits, land management strategies and stormwater program enhancements. These actions were presented to internal City and local stormwater and natural resource stakeholders prior to conducting two workshops in August 2022. General cost estimates were provided for each action and stakeholders provided their input on selection of Catchment A and prioritization of actions. Stakeholder feedback was incorporated into this plan.

STRATEGIC STORMWATER RETROFIT PROJECTS

The potential benefits of stormwater retrofit implementation opportunities were examined based on factors including location, degree of existing water quality or flow control, ownership (more challenging to implement for private ownership versus City ownership), and likelihood to succeed.

Three retrofit projects were identified in Lower Blackjack Creek Catchment A. The projects are the South Sidney Regional Facility, Flowers Meadows St. Pond Retrofit and Naturalization, and

the Sedgewick Water Campus Pond Naturalization. The locations of the three projects and preliminary drainage areas are depicted in Figure 2. The projects and BMP types are described in Table 1. The project summary sheet for the South Sidney Regional Facility project is included in Appendix A.



Legend

- Stormwater Retrofits
- Catchment Boundary
- Preliminary South Sidney Regional Facility Drainage Area
- Preliminary Blackjack Creek Floodplain Restoration Project Area
- Wetlands
- Waterbody
- Stream

Figure 2. Lower Blackjack Creek Catchment A Stormwater Projects.

N

0 500 1,000 2,000 Feet

HERRERA

Kitsap County, 2020

\\SEA-FILE-GIS01\gis-k\Projects\Y2020\20-07401-000\ArcPro\SMAP_PlanMaps\SMAP_PlanMaps.aprx

Table 1. City of Port Orchard Lower Blackjack Creek Catchment A Stormwater Retrofit Projects.		
Action	**Best Management Practice(s) to Be Considered[a]**	**Cost**
South Sidney Regional Facility	Constructed wetlands Biofiltration Infiltration ponds	Design: $1,400,000 Construction: $2,100,000
Flower Meadows St. Pond Retrofit and Naturalization	Enhance flow control and water quality Naturalize pond	$45,000
Sedgewick Water Campus Pond Naturalization	Naturalize pond	$45,000
	Total Cost	$3,590,000

[a] These projects are still in early design phase and the specific BMP that will be implemented may change.

LAND MANAGEMENT STRATEGIES

The potential benefits of land management strategies were examined based on factors including but not limited to the age of existing development, potential future land use, and opportunities to enhance stream function. These were evaluated for opportunities to leverage and mitigate future development to improve watershed health and reduce negative impacts from development. As a result of this evaluation, three land management strategies were identified to help protect or enhance ecosystem functions in Lower Blackjack Creek Catchment A (Table 2). The strategies are the South Blackjack Creek Floodplain Restoration project, a pilot rain garden and low impact development cost share program and regular review of stormwater standards for new development and re-development. The project summary sheet for the South Blackjack Creek Floodplain Restoration project is included as Appendix B.

Table 2. City of Port Orchard Lower Blackjack Creek Catchment A Land Management Strategies.		
Action	**Description**	**Cost**
South Blackjack Creek Floodplain Restoration	Increase floodplain connectivity creating alluvial streambeds for off channel habitat with depressional water storage, plant coniferous trees and riparian buffer areas, and add large woody debris	Design: $1,000,000 Construction: $5,000,000
Rain Garden and Low Impact Development Cost Share Pilot Program	Implement a pilot private property rain garden or other low impact retrofit program with cost-share from the City	$60,000
Regular Review of Stormwater Standards	Annual meeting of stormwater review staff to identify process improvements in review, inspection and enforcement of new development projects	$5,000
	Total Cost	$6,065,000

Stormwater Program Enhancements

The City conducts a number of activities for compliance with the 2019–2024 Western Washington Phase II NPDES Stormwater Permit (permit). These include activities associated with Illicit Discharge Detection and Elimination, Source Control , Operations and Maintenance, and Public Education and Outreach.

The City's existing procedures for implementing these activities were reviewed to consider what enhancements would be beneficial for accelerating water quality and habitat improvements in the Catchment A. This section describes the enhancements implemented within Catchment A that will exceed NPDES permit required actions. Table 3 summarizes stormwater program enhancement actions.

Illicit Discharge Detection and Elimination Field Screening

The City is required to inspect 12 percent of stormwater outfalls annually. The City will conduct the following additional actions in Lower Blackjack Creek Catchment A:

Locate and map additional outfalls.

Visit and inspect stormwater outfalls annually.

Source Control Program for Existing Development

The City is required to implement an inspection program January 1, 2023. Twenty percent of the inventory list is to be inspected annually with provisions for response to complaints and re-inspection visits. The City will conduct the following additional actions in Lower Blackjack Creek Catchment A:

Prioritize businesses for inspections the first year of the Source Control Program.

Revisit Source Control Program sites that require additional attention to promote better use of BMPS to reduce pollution sources entering the storm drainage system.

Add multi-family properties to the Source Control Business Inspection inventory list.

Operations and Maintenance

The City is required to clean catch basins every two years, with provisions for reduced cleaning based upon inspection. The City will conduct the following additional actions in Lower Blackjack Creek Catchment A:

Clean City catch basins where inspection shows areas which accumulate sediment at higher rates annually.

Public Education and Outreach

The City is required to implement public education and outreach programs to build awareness, foster behavior change, and provide stewardship opportunities all related to water resource protection. The City will conduct the following additional actions in Lower Blackjack Creek Catchment A:

Identify new locations and add Mutt Mitt pet waste stations to key pet walking areas.

Conduct a one-time targeted public education effort to property owners to build awareness about stormwater impacts to surface waters and best management practices, including car washing, pet waste pickup, and other practices to reduce pollution.

Develop and distribute education materials to property owners about tree preservation and wetland buffer best management practices.

Implement a three year pilot program for education and public participation in a citizen volunteer stream team.

Implement a three year pilot program for technical assistance to property owners to improve or establish riparian plantings.

Table 3. City of Port Orchard Lower Blackjack Creek Catchment A Stormwater Program Enhancements.

Permit Section	Action	Cost
Illicit Discharge Detection and Elimination S.5.C.5	Locate and map additional outfalls one time	$1,200
	Inspect City stormwater outfalls annually	$7,200
Source Control Program for Existing Development S.5.C.8	Inspect businesses the first year of the program	$0
	Conduct enhanced technical assistance	$7,200
	Include and inspect multi-family properties	$0
Operations and Maintenance S.5.C.7	Clean targeted City catch basins annually	$25,000
Public Education and Outreach S.5.C.2	Add Mutt Mitt pet waste pick up stations	$4,000
	Conduct one time public education to build awareness about stormwater impacts to surface waters and best management practices	$6,000
	Conduct one time education about tree preservation and wetland buffer best management practices	$12,000
	Implement a citizen stream team pilot program	$60,000
	Implement a stream riparian planting pilot program	$60,000
	Total Cost	$182,600

CHANGES TO LONG RANGE PLANS

The SMAP will be incorporated into the City 2024 Comprehensive Plan Periodic Update by reference.

BUDGET AND SCHEDULE

Cost estimates for each SMAP action were developed and identified for either short-term (2024–2030) or long-term(2031–2044) implementation. These costs may be mitigated by grant funding programs; the retrofit projects, the floodplain project and some of the education projects may be grant eligible. For the purpose of this document, no assumptions have been included about grant funds.

Some actions are implemented annually while others are a one-time project implemented as a 3-year pilot (see Table 4). The schedule does not assume continuation of programs identified as "short-term" or "pilot" projects beyond the minimum time frame, either 2024–2030 or three year pilot.

The total estimated cost for short-term actions is $1,467,600. The total estimated cost for long-term actions is $8,370,000.

A summary of short-term and long-term actions costs are shown in Table 4.

Table 4. Lower Blackjack Creek Catchment A Stormwater Management Actions Schedule and Cost Summary.

Action	Schedule		Cost
	Short- or Long-Term[a]	Duration	
Design South Sidney Regional Facility	Short	One time	$1,400,000
Construct South Sidney Regional Facility	Long	One time	$2,100,000
Design and Construct Flower Meadows St. Pond Retrofit and Naturalization	Long	One time	$45,000
Design and Construct Sedgewick Water Campus Pond Naturalization	Long	One time	$45,000
Design South Blackjack Creek Floodplain Restoration	Long	One time	$1,000,000
Construct South Blackjack Creek Floodplain Restoration	Long	One time	$5,000,000
Conduct private property rain garden & LID retrofit program	Long	Annual for 3 year pilot	$60,000 (over 3 years)
Conduct review of stormwater standards	Short	Annual	$5,000 (over 5 years)
Locate and map additional outfalls	Short	One time	$1,200
Inspect City outfalls	Short	One time	$7,200
Inspect businesses the first year of the program	Short	One time	$0
Conduct enhanced Business Source Control technical assistance	Short	Annual	$7,200 (over 5 years)
Include and inspect multi-family properties in Business Source Control Program	Short	One time	$0
Clean targeted City catch basins	Short	Annual	$25,000
Add Mutt Mitt pet waste pick up stations	Short	One time	$4,000
Conduct private property stormwater impacts & practices outreach	Short	One time	$6,000
Conduct private property tree preservation and wetland buffer Outreach Program	Short	Annual for 3 year pilot	$12,000
Implement a citizen stream team pilot program	Long	Annual for- 3 year pilot	$60,000
Implement a stream riparian planting pilot program	Long	Annual for 3 year pilot	$60,000
		Total Short-Term Costs	$1,467,600
		Total Long-Term Costs	$9,837,600

Note=Cost estimates are in 2022 dollars. Inflation and escalation of costs were not incorporated into cost estimates.

[a] Short-term = implementation between 2024 to 2030

Long-term = implementation between 2031 and 2044

LID= low impact development

FUTURE ASSESSMENT AND FEEDBACK

The purpose of the SMAP is to conduct actions in Catchment A to protect or enhance the receiving water of Lower Blackjack Creek. The SMAP is comprised of retrofit projects, land management strategies and enhanced programmatic activities. The City will assess implementation by tracking project implementation, effectiveness and demand for programs, and environmental monitoring data. This tracking will provide feedback to the City about SMAP implementation.

Projects are typically reviewed and tracked as part of capital project planning and budgeting. More detailed program analysis, financial assessment and capital project planning occurs on a 6- to 7-year cycle as part of comprehensive planning and provides an additional opportunity for tracking. Projects (those shown in Figure 2) will be tracked for implementation. Design, construction, and potential grant oversight will require City staff time. Staff capacity or lack of grant funding may be limiting factors for implementation.

Programs are typically reviewed annually for NPDES permit reporting The City desires to implement programs that are effective, in demand, and worthwhile continuing. Programs will be evaluated to determine if they are not effective (due to lack of response or engagement) or no longer effective (catch basin cleaning, business source control assistance). Successful programs may be continued through the long term depending upon staff capacity and funding.

Environmental data collection also occurs annually as part of routine monitoring for stream flow and benthic macroinvertebrates. These data may be useful in assessing trends of stream health over time. B-IBI data will be evaluated for long-term trends and stream flow metrics related to stormwater impacts will be evaluated.

REFERENCES

Ecology. 2019. Stormwater Management Action Planning Guidance. Washington Department of Ecology-Water Quality Program. Publication Number 19-10-010.

ESA. 2017. Blackjack Creek Watershed Restoration Assessment and Protection and Restoration Plan. Prepared for Suquamish Tribe and Washington Department of Ecology, by ESA Consultants, Seattle, Washington.

Herrera. 2022a. City of Port Orchard Watershed Inventory and Assessment – Technical Memorandum. Prepared for the City of Port Orchard by Herrera Environmental Consultants, Seattle, Washington. March 21.<https://portorchardwa.gov/documents/port-orchard-watershed-inventory/>

Herrera. 2022b. City of Port Orchard Watershed Prioritization – Technical Memorandum. Prepared for the City of Port Orchard by Herrera Environmental Consultants, Seattle, Washington. June 22. <https://portorchardwa.gov/documents/port-orchard-watershed-prioritization/>

Kitsap Regional Coordination Council. 2022. Land Use Planning Policy Committee Meeting. February 15. <https://static1.squarespace.com/static/5660ba88e4b0e83ffe8032fc/t/6205b0f793b6a1302e7c8f41/1644540153978/KRCC+PlanPOL+Feb+15+2022+Meeting+Packet.pdf. >

Puget Sound Benthos Database. 2022. Accessed August 1, 2022. <https://pugetsoundstreambenthos.org/>

Puget Sound Regional Council. 2020. Vision 2050 A Plan for the Central Puget Sound Region. Puget Sound Regional Council, Seattle, Washington.

APPENDIX D

Financial Analysis

City of Port Orchard

Stormwater Utility Rate Study

FINAL REPORT

December 2022

Washington
7525 166th Avenue NE, Ste. D215
Redmond, WA 98052
425.867.1802

Oregon
5335 Meadows Road, Ste. 330
Lake Oswego, OR 97035
503.841.6543

Colorado
1320 Pearl St, Ste 120
Boulder, CO 80302
719.284.9168

www.fcsgroup.com

FCS GROUP
Solutions-Oriented Consulting

FCS GROUP
Solutions-Oriented Consulting

Firm Headquarters
Redmond Town Center
7525 166th Ave NE, Ste. D-215
Redmond, Washington 98052

Established 1988
Washington | 425.867.1802
Oregon | 503.841.6543
Colorado | 719.284.9168

December 15, 2022

Zack Holt, Public Works Stormwater Manager
City of Port Orchard
216 Prospect St.
Port Orchard, WA 98366

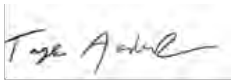
Subject: Stormwater Utility Rate Study

Dear Mr. Holt:

FCS GROUP is pleased to submit this report summarizing the results of the Stormwater Utility Rate Study. We want to thank you and City staff for your assistance and participation in data collection, analysis review, and discussion of key policy topics. This report includes consideration of three stormwater levels of service, each with varying levels of staffing and capital project considerations. The detailed methodologies used to derive the revenue needs for all levels of service (and a capital facility charge for each) are included in this report. It has been a pleasure to work with you and City staff on this study. Please let us know if you have any questions. Tage can be reached at (425) 615-6487 or TageA@fcsgroup.com.

Sincerely,

John Ghilarducci
Project Principal



Tage Aaker
Project Manager

Luke Rosson
Analyst

TABLE OF CONTENTS

Section I. INTRODUCTION/SUMMARY

Utility Background

According to the City's *Stormwater and Watersheds Comprehensive Plan 2023* (Comprehensive Plan) by Herrera Environmental Consultants, "the City of Port Orchard (City) operates a system of drainage pipes and ditches to convey stormwater runoff to receiving waters including streams and Sinclair Inlet. The drainage system prevents and minimizes damage to private properties, city streets, and other infrastructure… The City is faced with the challenge to convey runoff safely, while minimizing adverse high-flow impacts (erosion, flooding, and sediment deposition) and water quality degradation to receiving waters." The City bills and collects fees from customers within its service area to provide resources needed to plan, manage, design, construct, maintain, revise, and upgrade its stormwater system.

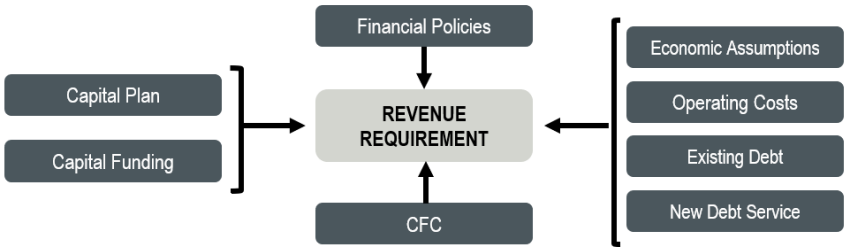
Rate Study

The rate study has two main goals – to develop revenue requirement analyses and capital facility charges for the City's stormwater utility. The results corresponding to each level of service vary because each level of service incorporates different operational and capital project needs.

Revenue Requirement

One main purpose of this rate study is to develop a funding plan ("revenue requirement") for the City's stormwater utility for the 2022-2041 study period. The revenue requirement identifies the total amount of rate revenue needed to fully fund the utility on a standalone basis, considering operating and maintenance expenditures, existing debt service, capital funding needs identified in the City's capital plan, and fiscal policies. **Exhibit 1** shows the general methodology of the rate study process.

Exhibit 1: Revenue Requirement Overview



Capital Facility Charge (CFC)

The other purpose of this rate study is to develop a capital facility charge, or CFC, for the City's stormwater utility. The City currently has water and sewer utility CFCs, but none for its stormwater utility. CFCs are designed to recover from new development a proportionate share of the cost of capital facilities. CFCs are one-time charges, not ongoing rates. They are typically payable at the time of development (or redevelopment to a higher intensity of development).

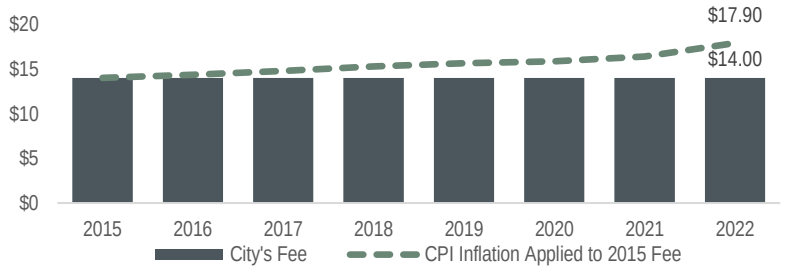
Capital facility charges serve two primary purposes: to provide equity between existing and new customers; and to provide a source of capital funding for system capital costs, as growth occurs.

Utility Rate and Inflation

In June 2015, the City increased its monthly stormwater utility fee from $9.70 to $14.00 per impervious surface unit (ISU). It has not increased since that time. **Exhibit 2** compares that fee against what that fee would have been if annual inflationary adjustments had been applied. The fee would need to be roughly $18 in 2022 to have a similar amount of buying power as it did in 2015.

Since 2015, the utility has faced significant cost inflation and development. While new development does result in new customers who pay the monthly rate, new development may also require additional services and can result in additional costs for the utility to build and maintain the infrastructure that serves the new development. Additionally, the City has gone through another iteration of the National Pollutant Discharge Elimination System (NPDES) Municipal stormwater permit (2019) which has resulted in increased regulatory requirements for the stormwater program.

Exhibit 2: **City's** Monthly Stormwater Fee vs. Consumer Price Index (CPI) Inflation



Revenue Requirement Results by Level of Service

The following sections summarize revenue requirement results by level of service (LOS). In each LOS, there is a three-year phase-in to help rates "catch up" to the level of service needs. After that, inflationary-level adjustments are assumed – 3% per year for each level of service. In LOS 3, increases drop to 1.5% in 2033 to avoid a large buildup of reserves. As previously noted, the forecast goes through the end of 2041, but the tables below show results through 2031 due to space limitations. To give City staff and City Council time to consider each level of service, and the associated rate adjustments, it is assumed initial rate adjustments would not be made until 2024. If the City were to incorporate rate increases earlier, say effective July 1, 2023, it would reduce future rate increases by roughly $1-2 per month per ISU. Among the information listed for each level of service are details regarding capital expenditures. Capital projects (net of grants) refers to net capital expenditures after receiving grant funding; both factors vary based on level of service.

Level of Service 1

Level of Service 1 requires monthly rate increases averaging $3.60 per year for 2024-26. This level of service funds approximately $36 million in capital projects (net of grants) inflated to the year of construction (2022-2041) and provides funding for up to 1.7 additional FTEs.

Exhibit 3: Level of Service 1: Rate Adjustments

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Monthly Rate / ISU	$14.00	$16.94	$20.50	$24.80	$25.55	$26.31	$27.10	$27.91	$28.75
Change in Monthly Rate		$2.94	$3.56	$4.30	$0.75	$0.76	$0.79	$0.81	$0.84

Level of Service 2

Level of Service 2 requires monthly rate increases averaging $5.82 per year for 2024-26. This level of service funds approximately $48 million in capital projects (net of grants) inflated to the year of construction (2022-2041) and provides funding for up to 4.7 additional FTEs.

Exhibit 4: Level of Service 2: Rate Adjustments

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Monthly Rate / ISU	$14.00	$18.34	$24.03	$31.47	$32.42	$33.39	$34.39	$35.42	$36.49
Change in Monthly Rate		$4.34	$5.69	$7.44	$0.95	$0.97	$1.00	$1.03	$1.07

Level of Service 3

Level of Service 3 requires monthly rate increases averaging $9.71 per year for 2024-26. This level of service funds approximately $58 million in capital projects (net of grants) inflated to the year of construction (2022-2041) and provides funding for up to 5.5 additional FTEs.

Exhibit 5: Level of Service 3: Rate Adjustments

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Monthly Rate / ISU	$14.00	$20.37	$29.64	$43.12	$44.42	$45.75	$47.12	$48.54	$49.99
Change in Monthly Rate		$6.37	$9.27	$13.48	$1.30	$1.33	$1.37	$1.42	$1.45

Capital Facility Charge by Level of Service

The calculated stormwater capital facility charge varies by level of service. Each level of service assumes a different amount of grants which are subtracted from the recoverable cost basis. The CFCs by level of service, per impervious surface unit (ISU), are shown below. Per the City's municipal code, one ISU is defined as one single-family residential account (including a mobile home) or 3,000 impervious square feet of ground cover for all other developed parcels.

- LOS 1: $2,469 per impervious surface unit
- LOS 2: $3,087 per impervious surface unit
- LOS 3: $3,914 per impervious surface unit

These charges reflect the maximum defensible CFC that the City Council could adopt, by level of service. The Council could adopt, by policy, a CFC that is lower than the indicated amounts. Lastly, the City should align its revenue requirement and CFC choices. For example, if the City Council adopts a rate plan supporting the revenue requirement for level of service 1, it should not adopt a CFC that aligns with level of service 2 or 3.

Section II. FISCAL POLICIES

The basic framework for evaluating utility revenue needs includes sound fiscal policies. Several policy topics are important to consider further as part of managing the finances of the City, including operating reserves, capital reserves, debt management, and rate funded capital. The City makes use of four different funds / reserves: operating, stabilization, capital, and debt service.

When evaluating reserve levels and objectives, it is important to recognize that the value of reserves lies in their potential use. A reserve strategy that deliberately avoids any use of reserves negates their purpose. The fluctuation of reserve levels may indicate that the system is working, while the lack of variation over many years strongly suggests that the reserves are, in fact, unnecessary.

Operating Reserve – Fund 421

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. Industry practice for utility operating reserves typically ranges from 30 days (8%) to 120 days (33%) of operating expenses, with the lower end more appropriate for utilities with stable revenue streams and the higher end of the range more appropriate for utilities with significant seasonal or consumption-based fluctuations.

Recommended Policy: Achieve a year-end balance target of 90 days (25%) of total annual operating *expenditures*. This equates to $397,000 for the 2022 budget, $486,000 for the 2023 budget, and $483,000 for the 2024 budget.

Capital Reserve – Fund 423

This reserve provides a source of emergency funding for unexpected asset failures or other unanticipated capital needs. This capital reserve policy is not intended to guard against catastrophic system failure or extreme acts of nature. Minimum balances for capital reserves are often based on a percentage (commonly 1% to 2%) of the original cost of utility fixed assets or an amount determined sufficient to fund an emergency capital project or equipment failure. Capital reserves larger than these amounts may be prudent if the City is saving for future capital projects that cannot be funded with same-year rate revenues.

Recommended Policy: Achieve a year-end target of at least 1% of the original cost of fixed assets. In 2022, the City had over $16 million in stormwater assets plus construction in progress, which results in a $160,000 capital reserve target. Capital reserves larger than this may be prudent if the City is saving in advance for future capital projects. This target is projected to grow over time as the City executes its capital improvement program.

Adopted City Fiscal Policies

Per Resolution No. 053-20, the City's stormwater operating reserve (Fund 421) balance must be sufficient to meet roughly two months of recurring *revenue*, with a goal to work towards a maximum of three months of *revenues.* The City does not have an adopted policy regarding its capital reserve (Fund 423).

Calculating a reserve based on revenue in the rate forecast model can create a circular type of argument, so it was not modeled that way. As previously noted, operating reserves are typically based on a certain number of days of operating *expenditures*. The American Water Works Association (AWWA) published a 2018 *Cash Reserve Policy Guidelines*, and it cites recommended reserve levels from the Water Environment Federation, International City/County Management Association, and the Government Finance Officers Association, all of which reference a certain number of days of operating expenses. Capital reserves are typically based on a percentage of fixed assets or an amount sufficient to respond to an emergency capital project.

To make sure the rate plan in each level of service met the City's adopted policy, we tested the combined operating reserve (90 days of operating expenses) plus the capital reserve (1% of fixed assets) to ensure that it was equal to or greater than two months of *revenues*.

Stabilization Reserve – Fund 422

The City maintains stabilization reserves for each of its water, sewer, and stormwater utilities. Per the City's adopted fiscal policies, this reserve "shall be used if all efforts have been exhausted to fund a qualifying event and no reasonable budget adjustments are available to continue to provide essential services to the public." The policy notes qualifying events as follows:

- The State of Washington or the Federal government formally declares a disaster or emergency.
- A natural or urgent event that jeopardizes public safety, impedes commerce, or threatens additional damage to City infrastructure.
- Unforeseen events or situations outside of the scope of contingency planning or planned normal course of government operations.
- An act of war, terrorism, or declaration of Martial law.

Recommended Policy: Per Resolution No. 053-20, the stabilization reserve should target having 90 days (25%) of annual expenditures. Per discussions with City staff, this reserve is fully funded through the end of 2024. The forecast did not assume these funds were available for use, nor did the forecast add any funds to this reserve throughout the study period.

Debt Management

The City currently has two outstanding stormwater utility-related loans. For the management of current as well as potential future debt, some considerations are provided below.

Types of Debt Considered as Part of this Forecast

For utilities, there are two primary sources of debt financing: State or federal loan programs, and market debt financing.

State-Administered Loan Programs

State-administered loans (including federal loans administered by the State) are generally preferable to market debt financing. The interest rate is generally lower for State loans, and the loan terms often offer more flexibility in administering the debt. For instance, most State loan programs do not include a requirement that the utility maintain a certain minimum level of debt service coverage.

Market Debt Financing

General Obligation Bonds

General Obligation (G.O.) bonds are voter-approved bonds secured by the full faith and credit of the issuing agency, committing all available tax and revenue resources to debt repayment. With this high level of commitment, G.O. bonds have relatively low interest rates. General Obligation taxing authority can be sought as a backup pledge to reduce the interest rate of utility debt, even if the actual source of repayment is intended to be utility rates. However, the use of G.O. bond financing is limited in relation to assessed valuation, and G.O. bonds must be authorized by 60% of the voters. For these reasons, G.O. bonds are not often used for utility capital projects.

Limited Tax General Obligation (LTGO) bonds can also be issued up to a statutory ceiling without a vote of the people. In Washington, they are sometimes referred to as "councilmanic" bonds. Unlike G.O. bonds, LTGO debt does not authorize additional property taxes; instead, it must be repaid within the City's existing taxing authority. Usually there are competing demands for that funding within a City, and for that reason, LTGO debt is not often used for utility capital projects either.

Revenue Bonds

Revenue bonds are secured by the revenues of the issuing utility; the debt obligation does not extend to the City's other revenue sources. With this limited commitment, revenue bonds usually bear higher interest rates than G.O. bonds. Revenue bonds typically require the achievement of minimum debt service coverage each year. Revenue bonds can be issued in Washington without a public vote. There is no limit, except the practical limit of the utility's ability to generate revenue to repay the debt and meet debt service coverage each year.

Forecast Assumption: The forecast assumes that the City will issue revenue bonds when debt is needed. While low-cost state loans are typically preferred, revenue bonds are conservatively assumed as they require the forecast to cover higher interest rates and debt service coverage requirements. If the City secures low-cost state loans, that will be a positive result that will not negatively impact the forecast, while the inverse could have a negative impact on the forecast (relying on state loans but ultimately needing to rely on revenue bonds instead which have higher interest and debt service coverage requirements).

Debt Service / Reserve – Fund 424

A debt reserve is most often required as a condition of bond issuance, though some state loan programs also require a reserve. The reserve intends to protect bondholders (or the agency issuing loans) from the risk of the borrower defaulting on their payments and is most often linked to either average annual debt service or maximum annual debt service.

Recommended Policy: The policy should be dictated by terms outlined in contracts for debt obligations.

Debt Service Coverage

Debt service coverage is typically a requirement associated with revenue bonds and some state loans, and it is an important benchmark to measure the riskiness of the water utility's capital funding plans. Coverage is most easily understood as a factor applied to annual debt service. In such a case, if it issues revenue bonds, the utility agrees to collect enough revenue to meet operating expenses and not only pay debt service but to collect an additional factor (often 25%) above bonded debt service. The extra revenue is a "cushion" that makes bondholders more confident that debt service will be paid on time.

Recommended Policy: While a factor of 1.25 is a common legal minimum coverage requirement for revenue bonds, we recommend a more conservative internal policy coverage target of at least 1.50 to 2.00 for revenue bond debt. We are not currently aware of any debt service coverage requirements related to the City's existing stormwater-related loans.

Rate Funded System Reinvestment (Rate Funded Capital)

Rate funded system reinvestment is the funding of long-term infrastructure replacement needs through a regular (annual) and predictable rate provision. Most commonly, utilities that have addressed replacement funding needs have used historical (original cost) depreciation expense as the basis for a reasonable level of reinvestment in the system. In other cases, utilities strive to rate fund routine repair and replacement projects, saving debt for larger and / or more one-time type projects.

Recommended Policy: Set rates to fund a majority of routine repair and replacement projects with cash, such as the City's *Ongoing Conveyance System Improvement Program.* This annual program is expected to cost approximately $1,000,000 per year in 2022 dollars.

Summary of Fiscal Policies

Exhibit 6 provides a summary of the recommended fiscal policies for the City.

Exhibit 6: Summary of Fiscal Policies

Policy	Recommended Target
Operating Reserve	Achieve a year-end minimum balance target of 90 days (25%) of total annual operating expenditures. This target increases as the City's operating costs increase.
Capital Reserve	Achieve a year-end target of at least 1% of the original cost of fixed assets.
Operating plus Capital	Compare the combined operating plus capital targets against the City's adopted policy of two to three months of recurring revenues.
Rate Funded Capital	Strive to rate fund a majority of the City's ongoing Conveyance System Improvement Program, which is estimated to be roughly $1,000,000 per year, plus inflation.
Debt Service Coverage	While a factor of 1.25 is a common legal minimum coverage for revenue bonds, achieve an internal policy coverage target of at least 1.50 to 2.00 when possible.

Section III. Revenue Requirement

As previously mentioned, the main purpose of the revenue requirement analysis is to develop a funding plan ("revenue requirement") for the 2022-2041 study period. For each level of service, the revenue requirement identifies the total rate revenue needed to fully fund the utility on a standalone basis considering current financial obligations including operating expenditures, existing debt service, policy-driven commitments, and future capital project needs. Rate increases are applied "across-the-board" – that is, it is assumed that each charge on the rate schedule increases by the same percentage, which maintains the existing rate structure.

Economic & Inflation Factors

The operating and maintenance expenditure forecast largely relies on the City's 2022-2024 budgets. The line items in the budget are then adjusted each year by utilizing one of the following applicable factors:

- General Cost Inflation. Assumed to be 3.0 percent per year based on both the Washington State Economic & Revenue Forecast Council projection for the Consumer Price Index and the recent historical performance of the Seattle-Tacoma-Bellevue Consumer Price Index.
- Construction Cost Inflation. Assumed to be 3.5 percent per year based on the Engineering News-Record's Construction Cost Index (20-City Average).
- Taxes. State Business and Occupation tax rate of 1.75 percent (taxable revenue goes above the $1.0 million threshold) and the City utility tax rate of 5.00 percent.
- Personnel Cost Inflation. Based on Employment Cost Indices (U.S. Bureau of Labor Statistics), experience with other stormwater utilities, and discussions with City staff.
  - Labor inflation: assumed to be 3.0 percent per year.
  - Benefits inflation: assumed to be 5.0 percent per year.
- Cost per Additional Full-Time Equivalent (FTE). Each level of service incorporates additional staff. Based on discussions with City staff, we assumed a "fully loaded" cost of $125,000 per FTE (2022 $), which is assumed to include both wages and benefits.
- Fund Earnings. Assumed to be 2.25% percent per year based on recent earnings reports from the State's Local Government Investment Pool (LGIP) at the time of the analysis.
- Customer Account Growth. City staff provided a detailed growth forecast for the 2023-2025 period, based on projects currently identified in the City's permitting pipeline. Based on that forecast, City staff estimated that 300 impervious surface units would be added each year through 2025, and that 150 units per year would be added after that. This equates to annual growth rates of approximately 2.75% per year through 2025 and 1.25% for each year thereafter.

Fund Balances

The 2022 starting cash balances associated with the stormwater utility funds are shown below in **Exhibit 7** and total $2.5 million.

Exhibit 7: 2022 Beginning Fund Balances

Fund	Balance
Operating Reserve - 421	$2,116,000
Rate Stabilization Reserve - 422	343,000
Capital Reserve - 423	94,000
Debt Reserve - 424	0
Total	$2,553,000

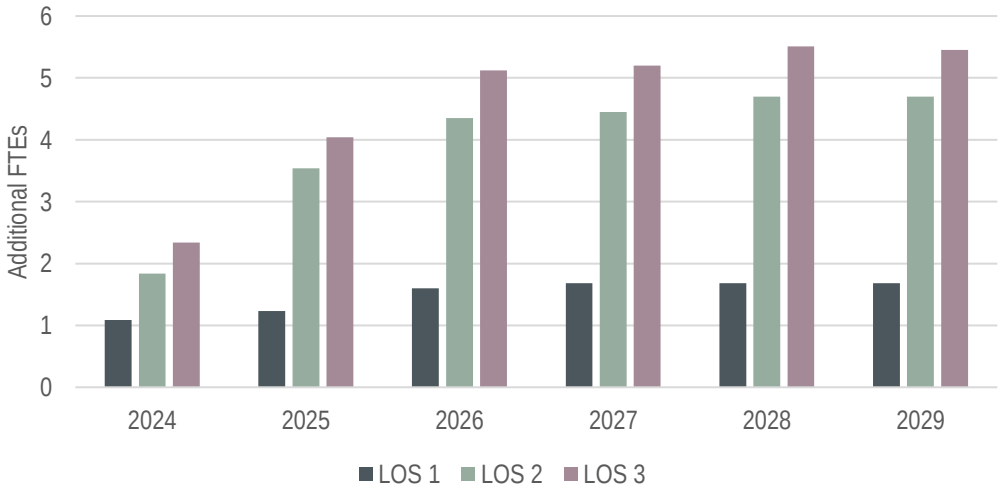
Staffing & Other Operational Funding Needs

According to the City's 2023 Comprehensive Plan, "City staff can address surface water and stormwater problems that arise on a daily basis and troubleshoot specific issues that arise with development project reviews. However, they are not fully able to perform activities that would enable continual improvement of the City's surface water management program. Current staffing levels will not be adequate to meet the rest of the requirements of the 2019–2024 Phase II Permit and long-term goals defined as part of this Plan." The resulting staffing requirements and other funding needs (e.g., consultant support) are shown by level of service in **Exhibits 8** and **9**.

Additional Staffing Requirements

Herrera Environmental Consultants (Herrera) worked with City staff to identify the following staffing requirements (above those that are included in the 2023-24 budget). By 2029, LOS 1 would require 1.7 additional full-time equivalents (FTEs), LOS 2 would require 4.7 additional FTEs, and LOS 3 would require 5.5 additional FTEs.

Exhibit 8: Total Additional Staffing Needs by Level of Service

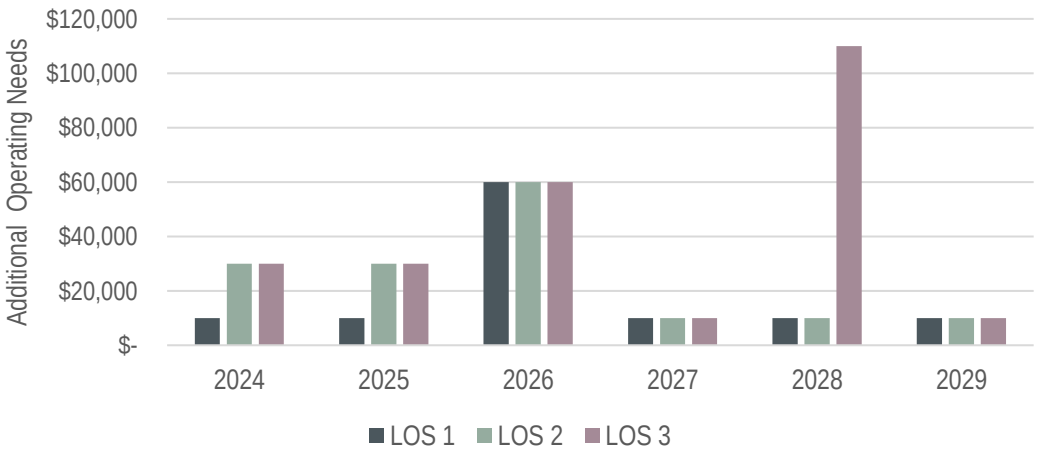


Other Operational Funding Needs

Herrera worked with City staff to identify other funding needs, primarily in the form of consultant support to assist City staff in certain programmatic areas. These costs, shown in **Exhibit 9,** are in addition to the City's adopted 2023-24 budget and are summarized below:

- **LOS 1:** Stormwater planning, climate change in capital projects support.
- **LOS 2:** LOS 1, plus public education & outreach for low impact development practices.
- **LOS 3:** LOS 2, plus climate change in private development projects support. The $100,000 bump in 2028 is related to developing policy and standards for new and redevelopment projects to design for more intense future precipitation.

Exhibit 9: Other Operational Funding Needs by Level of Service (2022 $)



Capital Expenditures

Herrera worked with City staff to develop three levels of service for the stormwater capital program, each with varied timelines and grant assumptions, shown in **Exhibit 10**.

Exhibit 10: Capital Program Assumptions by Level of Service

Level of Service	Capital Timeline	Capital Grants
Level of Service 1	Implementation of all projects within 20 years	Maximum grant funding (many projects would not proceed without grants)
Level of Service 2	Implementation of all projects within 20 years	Moderate grant funding (some projects would not proceed without grants)
Level of Service 3	Implementation of all projects within 6 years	No grant funding assumed

Given these assumptions, **Exhibit 11** shows the assumed level of annual capital expenditures, after the assumed grants have been deducted.

Exhibit 11: Annual Capital Costs by Level of Service (Net of Assumed Grants) in 2022 $

Summary notes related to the capital plan are provided below for the three levels of service:

- **Level of Service 1**: The 2022-2041 CIP totals $25 million ($1.2 million per year) in 2022 dollars and $36 million with forecasted inflation ($1.8 million per year).
- **Level of Service 2**: The 2022-2041 CIP totals $34 million ($1.7 million per year) in 2022 dollars and $48 million with forecasted inflation ($2.4 million per year).
- **Level of Service 3**: The 2022-2041 CIP totals $45 million ($2.3 million per year) in 2022 dollars and $58 million with forecasted inflation ($2.9 million per year).

Capital Funding Strategy

The 2022-2041 capital plan varies in funding sources as well as total capital. The latter is due to changes in capital timing and associated inflation. A few observations are shown below:

- Rate funded capital ranges from $17.4 to $23.4 million in each level of service.
- Borrowing increases from $15 million in LOS 1 to $34 million in LOS 3.
- Assumed grants and other sources decrease from $28.6 million in LOS 1 to just $0.5 million in LOS 3; it is assumed that the general fund contributes $0.5 million in each level of service for a multi-purpose land acquisition budgeted for 2023.
- Total capital in LOS 3 is much less than LOS 1 or LOS 2 because most projects are assumed to be completed in the next six years, which reduces the impact of inflation compared to a twenty-year completion schedule.

Exhibit 12: Capital Funding Strategy by Level of Service

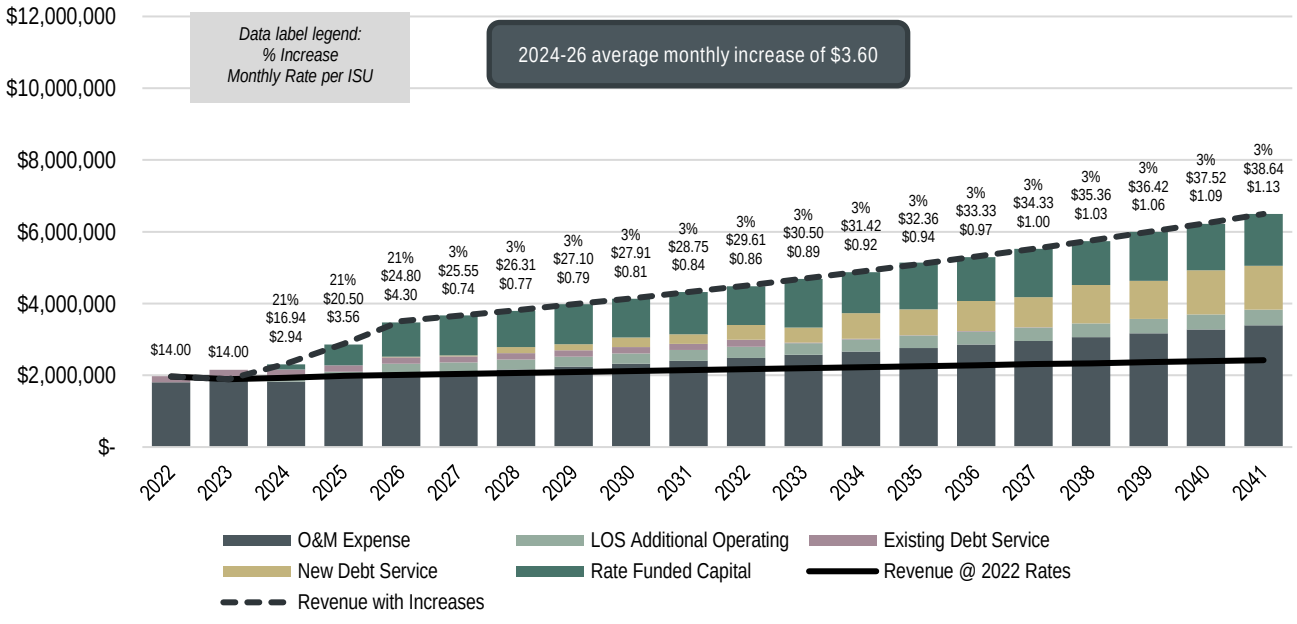
Description	Level of Service 1	Level of Service 2	Level of Service 3
Drawdown of Existing Reserves	$640,000	$530,000	$-
Rate Funded Capital	$19,900,000	$17,240,000	$23,350,000
Debt (Borrowing)	$15,300,000	$29,700,000	$33,800,000
Grants & General Fund	$28,550,000	$19,480,000	$500,000
Total	$64,390,000	$66,950,000	$57,650,000

Revenue Requirement for **Level of Service 1**

Exhibit 13 graphically represents the LOS 1 revenue requirement forecast through 2041. The stacked columns represent the costs and obligations of the utility such as operating expenses and annual rate spending for capital projects, while the lines represent utility revenues.

- Solid black line: Revenue at existing rates.
  - » Stormwater rate revenue is expected to be roughly $1.8 million in 2022 and is expected to grow at a varying rate ranging from 1.2%-2.5% per year with customer growth.
- Dashed black line: Revenues with rate increases.
  - » Rate revenue must increase to allow the utility to cover its financial obligations.
- Dark blue bar: 2022-24 budgets plus inflation.
  - » Operating expenses are based on the adopted 2022-2024 budgets and increase with the annual cost escalation assumptions previously discussed.
- Green bar: Additional FTEs and operating costs associated with each LOS.
  - » Level of Service 1 incorporates funding for 1.7 FTEs and the other operational needs identified in **Exhibit 9**.
- Purple bar: Existing debt service.
  - » The stormwater utility has two loans with annual debt service totaling $177,000 per year.
- Gold bar: Net debt service.
  - » Annual principal and interest resulting from this borrowing are expected to be $1.2 million per year by 2041.
- Dark green bar: Rate Funded Capital (i.e., cash available for capital).
  - » Rates cannot support annual rate funded capital until the first scheduled increase in 2024. With rate increases, this amount is projected to increase to $1.4 million by 2041.

Exhibit 13: Level of Service 1: Annual Revenue Requirement Forecast 2022-2041

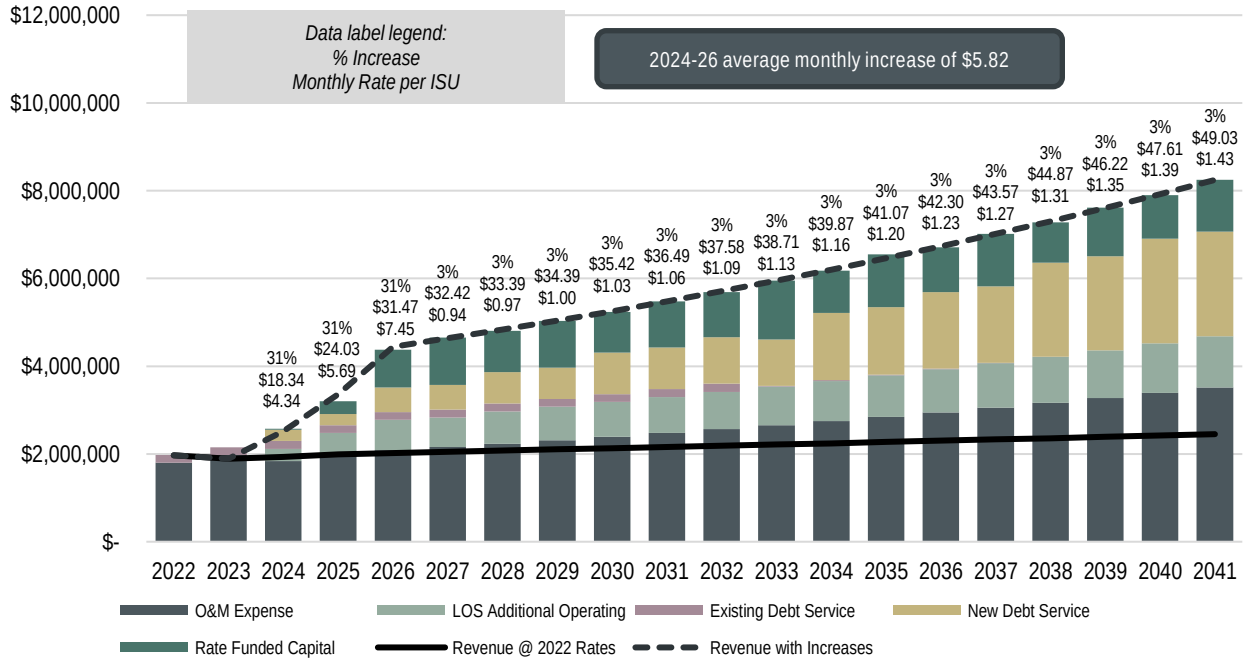


Revenue Requirement for **Level of Service 2**

Exhibit 14 graphically represents the LOS 2 revenue requirement forecast through 2041.

- Solid black line: Revenue at existing rates.
  - » Stormwater rate revenue is expected to be roughly $1.8 million in 2022 and is expected to grow at a varying rate ranging from 1.2%-2.5% per year with customer growth.
- Dashed black line: Revenues with rate increases.
  - » Rate revenue must increase to allow the utility to cover its existing financial obligations while also funding capital improvement projects. These rate increases start in 2024.
- Dark blue bar: 2022-24 Budgets plus Inflation
  - » Operating expenses are based on the adopted 2022-2024 budgets and increase with the annual cost escalation assumptions previously discussed.
- Green bar: Additional FTEs and Operating Costs from LOS.
  - » Level of Service 2 incorporates funding for 4.7 FTEs and the other operational needs identified in **Exhibit 9**.
- Purple bar: Existing debt service.
  - » The stormwater utility has two loans with annual debt service totaling $177,000 per year.
- Gold bar: Net debt service.
  - » Annual principal and interest resulting from this borrowing are expected to be $2.4 million per year by 2041.
- Dark green bar: Rate Funded Capital (i.e., cash available for capital).
  - » Rates cannot support meaningful annual rate funded capital until 2025. With rate increases, this amount is projected to increase to $1.2 million by 2041.

Exhibit 14: Level of Service 2: Annual Revenue Requirement Forecast 2022-2041

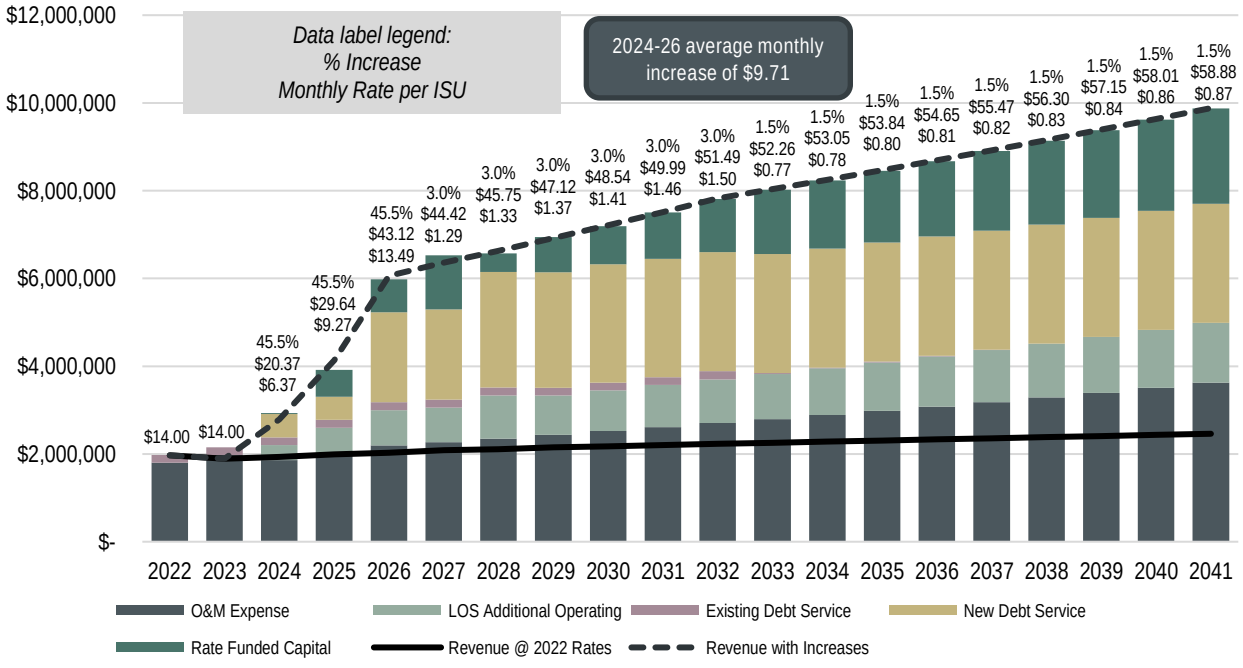


Revenue Requirement for **Level of Service 3**

Exhibit 15 graphically represents the LOS 3 revenue requirement forecast through 2041.

- Solid black line: Revenue at existing rates.
  - » Stormwater rate revenue is expected to be roughly $1.8 million in 2022 and is expected to grow at a varying rate ranging from 1.2%-2.5% per year with customer growth.
- Dashed black line: Revenues with rate increases.
  - » Rate revenue must increase to allow the utility to cover its existing financial obligations while also funding capital improvement projects. These rate increases start in 2024.
- Dark blue bar: 2022-24 Budgets plus Inflation
  - » Operating expenses are based on the adopted 2022-2024 budgets and increase with the annual cost escalation assumptions previously discussed.
- Green bar: Additional FTEs and Operating Costs from LOS.
  - » Level of Service 3 incorporates funding for 5.5 FTEs and the other operational needs identified in **Exhibit 9**.
- Purple bar: Existing debt service.
  - » The stormwater utility has two loans with annual debt service totaling $177,000 per year.
- Gold bar: Net debt service.
  - » Annual principal and interest resulting from this borrowing are expected to be $2.7 million per year by 2041.
- Dark green bar: Rate Funded Capital (i.e., cash available for capital).
  - » Rates cannot support meaningful annual rate funded capital until 2025. With rate increases, this amount is projected to increase to $2.2 million by 2041.

Exhibit 15: Level of Service 3: Annual Revenue Requirement Forecast 2022-2041



Section IV. Capital Facility Charges

Introduction

Capital Facility Charges (CFCs) are one-time fees, paid at the time of development, intended to recover a share of the cost of system capacity needed to serve growth. As part of the rate study, the City tasked FCS GROUP with calculating a CFC for the City's stormwater utility. As noted previously, some of the capital cost elements vary based on the level of service which results in a unique CFC for each level of service. CFCs serve two primary purposes:

- to provide equity between existing and new customers; and
- to provide a source of funding for system capital costs, as growth occurs.

The CFC is an upfront charge imposed on growth and is primarily a charge on new development, although also applicable to expansion or densification of development when such actions increase requirements for utility system capacity. Charges imposed on redevelopment should be net of any existing developed area on the site.

The City of Port Orchard has water and sewer CFCs but does not currently have a stormwater CFC. This report documents the methodology and resulting CFC for the City's consideration.

Legal Basis

There are a variety of approaches that are used in the industry to establish a defensible capital facility charge. The City is authorized to assess such charges under Section 35.92.025 of the Revised Code of Washington (RCW). It is important that the City's methodology to determine cost-based CFCs is consistent with RCW 35.92.025 and applicable case law. Additionally, under RCW 35.67.010, "system of sewerage" is defined to include stormwater facilities.

> RCW 35.92.025: "Cities and towns are authorized to charge property owners seeking to connect to the water or sewerage system of the city or town as a condition to granting the right to so connect, in addition to the cost of such connection, such reasonable connection charge as the legislative body of the city or town shall determine proper in order that such property owners shall bear their equitable share of the cost of such system."

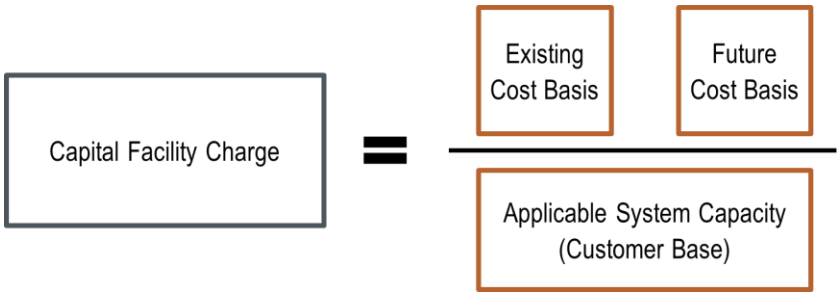
RCW 35.92.025 is silent regarding specific methodology to be used in the charge calculation. However, language contained in the Special District RCW 57.08.005 (11) does provide some guidance regarding specific methodology. While this guidance does not legally apply to municipal stormwater utilities, there are elements that help inform the methodology used for stormwater CFCs. Since the calculated charges represent the maximum allowable charge, the City may choose to implement a charge at any level up to the calculated charge.

Methodology

Exhibit 16 shows the recommended approach for the CFC calculation. Under this methodology, all capital costs (existing assets and future projects net of provisions for retirement) are divided by the estimated future customer base. This calculation is like a simple buy-in charge (which consists of

existing costs divided by existing customers), except that it is projected into a future year after the planned capital projects are completed and after incorporating estimated customer growth. The resulting CFC is generally stable over time. The main policy emphasis here is on intergenerational equity — there is no cost advantage for either existing or new customers.

Exhibit 16: CFC Calculation Methodology



The capital costs used in the CFC calculation can be separated into two major categories:

- Existing system costs: These costs represent the net investment in assets that currently provide service to customers (and that presumably have some amount of capacity to serve growth).
- Future capital costs: These costs refer to capital improvement projects that the utility plans to undertake within a period of time specified in the system planning documents. A provision for capital retirement – a calculation to account for the original value of the assets any new capital projects are repairing or replacing – is deducted from the total future capital projects.

The existing estimated system capacity is measured in impervious service units (ISUs).

Existing Cost Basis

The existing cost portion of the calculation is intended to recognize the current ratepayers' net investment in the original cost of system assets. The main provisions of the calculation include the following elements:

- Utility Plant-In-Service: The existing cost basis is comprised of the original cost of plant-in-service, as documented in the fixed asset schedule of the stormwater utility.
  - The City's records as of the end of 2021 identify $13.3 million in stormwater-related assets.
- Plus: Construction-Work-in-Progress: Projects that the City is currently constructing are eligible to be included in the cost basis, similar to an existing asset.
  - As of the end of 2021, the City had $3.0 million in construction-work-in-progress.
- Less: Contributed Capital: Assets funded by developers, grants, or from any agency other than the City of Port Orchard are excluded from the cost basis on the premise that the CFC should only recover costs actually incurred by City ratepayers.
  - The City's records identified $5.0 million in stormwater grants and contributions in aid of construction (developer donations) received by the utility.
- Plus: Interest on Non-Contributed Plant: The RCW and subsequent legal interpretations provide such charges can include interest on an asset at the rate applicable at the time of construction. Interest can accumulate for a maximum of ten years from the date of construction for any particular asset. Conceptually, this interest provision attempts to account for the opportunity

costs that the City's customers incurred by supporting investments in infrastructure rather than having it available for other needs.

  - » Accumulated interest on non-contributed assets adds approximately $2.4 million to the existing cost basis.

- Less: Net Debt Principal Outstanding: Another adjustment to the existing cost basis is to deduct the net liability of outstanding utility debt, since that new customers will bear a proportionate share of annual debt service through ongoing utility rates. Outstanding debt represents assets that have been placed into service, but that today's ratepayers have not yet paid for.
  - » The City currently has two outstanding loans relating to its stormwater utility, with $1.8 million in debt principal outstanding. As of the beginning of 2022, however, beginning cash balances total $2.5 million. Since cash balances exceed the outstanding debt, no deduction is made from the cost basis as cash could theoretically be used to reduce the debt principal.

The sum of these elements results in a total existing cost basis of $13.6 million.

Exhibit 17: Stormwater Utility Existing Cost Basis

Description	Amount
Utility Capital Assets	$13,264,328
Less: Contributed Capital	(5,010,051)
Plus: Interest on Non-Contributed Plant	2,353,859
Plus: Construction-Work-in-Progress	2,976,234
Less: Net Debt Principal Outstanding	-
Total Existing Cost Basis	$ 13,584,371

Future Cost Basis

The future cost basis is intended to recognize the ratepayers' net investment in the projects to be completed in the future. The main elements of the calculation include the capital improvement plan, and in some cases, offsetting grants. One additional adjustment to these numbers is a provision for capital retirements, which is also discussed below. **Exhibit 18** summarizes these elements for each level of service. Each level of service has a unique future cost basis.

- Capital Improvement Plan: A utility capital improvement plan (CIP) includes projects that address many needs, including system expansion, upgrades and the repair and replacement of infrastructure. In some cases, a single CIP project can serve more than one of these purposes. The City's CIP covers years 2022 through 2041 and project costs are in 2022 dollars.

  Note: We do not escalate capital projects in a CFC for a couple of reasons. First, we do not know with certainty when projects will be constructed or what inflation will be. Second, we prefer to use the original cost in the calculation, and then the City can increase the charges with the Engineering News-Record Construction Cost Index or another inflator to accomplish the same thing with more accuracy.

- Less: Developer Contributions/Grants: Projects or portions of projects assumed to be funded by grants may be excluded from the calculation. It is assumed that without the level of grant funding noted, corresponding projects would not be executed.
  - » All levels of service include $500,000 in assistance from the general fund, as listed in the City's 2023 budget. Our understanding is that this is a contribution from the general fund for a portion of a multi-purpose property acquisition.
- Less: Provision for Capital Retirement: Many capital projects are replacing existing assets. To avoid including the value of these projects twice – once in the existing assets and again in the capital plan – a provision for capital retirement is used on projects or portions thereof that are deemed repair and replacement (R&R). The provision for capital retirement determines the approximate original cost of the asset the R&R project is replacing, using the useful life of the new project and the historic ENR Construction Cost Index. The sum of the provision for capital retirement calculations is then removed from the future capital project total. In simple terms, if a retention pond expected to last 50 years is being installed in 2018 (and replacing an existing pond), the provision for retirement determines how much that asset cost in 1968 and removes that portion of the project cost from the calculation.

Exhibit 18: SWM Utility Future Project Costs Summary by LOS (2022 $)

Description	LOS 1	LOS 2	LOS 3
Total Citywide Projects (uninflated, before grants)	$44,150,628	$46,950,628	$45,010,628
Less: Assumed Grants	(19,365,000)	(13,250,000)	-
Less: General Fund Contribution	(500,000)	(500,000)	(500,000)
Less: Provision for Repair & Replacement	(3,487,088)	(3,797,339)	(3,584,445)
Total Future Cost Basis	$20,798,540	$29,403,289	$40,926,183

Estimated Customer Base (System Capacity)

So far, the report has discussed the numerator in the CFC, with its two main components: the value of existing assets and future capital costs. The denominator in the CFC calculation is the projected number of impervious surface units, or ISUs. The same time horizon for both the capital improvement plan and assumed customer growth is used in the CFC calculation – 2022 through 2041. This ensures that the numerator and the denominator cover the same period.

Exhibit 19: Estimated Customer Base by 2041

Customer Base	ISUs
Existing ISUs as of 8/2022	10,376
Estimated ISUs added from 8/2022 through 12/2022	250
Additional ISUs with Growth 2023-2041	3,300
Projected ISUs by 2041	13,926

CFC Results

The following exhibit shows summary calculations for the City's stormwater CFC for each level of service. Per the City's municipal code, one impervious surface unit (ISU) is defined as a single-family residential account (including mobile homes) or 3,000 impervious square feet of ground cover for all other developed parcels. It is assumed that the City would use the same definition when administering a stormwater capital facility charge if a stormwater CFC were to be implemented.

Exhibit 20: CFC Calculation

Description	LOS 1	LOS 2	LOS 3
Existing Cost Basis	$13,584,371	$13,584,371	$13,584,371
Future Cost Basis	20,798,540	29,403,289	40,926,183
Total Cost Basis	34,283,911	42,987,660	54,510,554
Future System Capacity	13,926 ISUs	13,926 ISUs	13,926 ISUs
Calculated Maximum CFC per ISU	$2,469	$3,087	$3,914

As noted previously, these charges reflect the maximum defensible CFC by level of service. The Council could adopt, by policy, a CFC that is lower than the indicated amounts and / or choose to phase-in to a targeted level over a multi-year period.

Section V. SUMMARY

Exhibits 21, Exhibit 22, and **Exhibit 23** detail the rate plans that support each defined level of service. These increases allow the utility to accomplish the following:

- Fund existing and forecasted operating expenses, plus cost escalation;
- Cover existing and future debt service obligations;
- Allow the utility to fund $36 to $58 million in capital projects from 2022-2041, net of grants;
- Generate $1.4 to $2.2 million per year for rate-funded capital by 2041; and
- Maintain utility reserves at recommended levels throughout the forecast.

Exhibit 21: Level of Service 1: Rate Increases

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Monthly Rate / ISU	$14.00	$16.94	$20.50	$24.80	$25.55	$26.31	$27.10	$27.91	$28.75
Change in Monthly Rate		$2.94	$3.56	$4.30	$0.75	$0.76	$0.79	$0.81	$0.84

Exhibit 22: Level of Service 2: Rate Adjustments

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Monthly Rate / ISU	$14.00	$18.34	$24.03	$31.47	$32.42	$33.39	$34.39	$35.42	$36.49
Change in Monthly Rate		$4.34	$5.69	$7.44	$0.95	$0.97	$1.00	$1.03	$1.07

Exhibit 23: Level of Service 3: Rate Adjustments

	2023	2024	2025	2026	2027	2028	2029	2030	2031
Monthly Rate / ISU	$14.00	$20.37	$29.64	$43.12	$44.42	$45.75	$47.12	$48.54	$49.99
Change in Monthly Rate		$6.37	$9.27	$13.48	$1.30	$1.33	$1.37	$1.42	$1.45

Capital Facility Charge

The recommended maximum CFC is $2,469 per ISU for Level of Service 1, $3,087 for Level of Service 2, and $3,914 for Level of Service 3. It is recommended that the CFC be revisited every few years to ensure that the charge is keeping pace with the utility's capital investments and that the adopted charge be indexed for inflation.

Single-Family Residential Rate Comparison

As a resource to the City and its customers, a rate survey of western Washington stormwater utilities was performed. **Exhibit 24** shows monthly single-family residential stormwater bills for a few

neighboring jurisdictions. It also features Port Orchard's existing rate as well as potential rates for each level of service in 2024.

Exhibit 24: Regional Jurisdictional Survey – Monthly Single Family Stormwater Rates

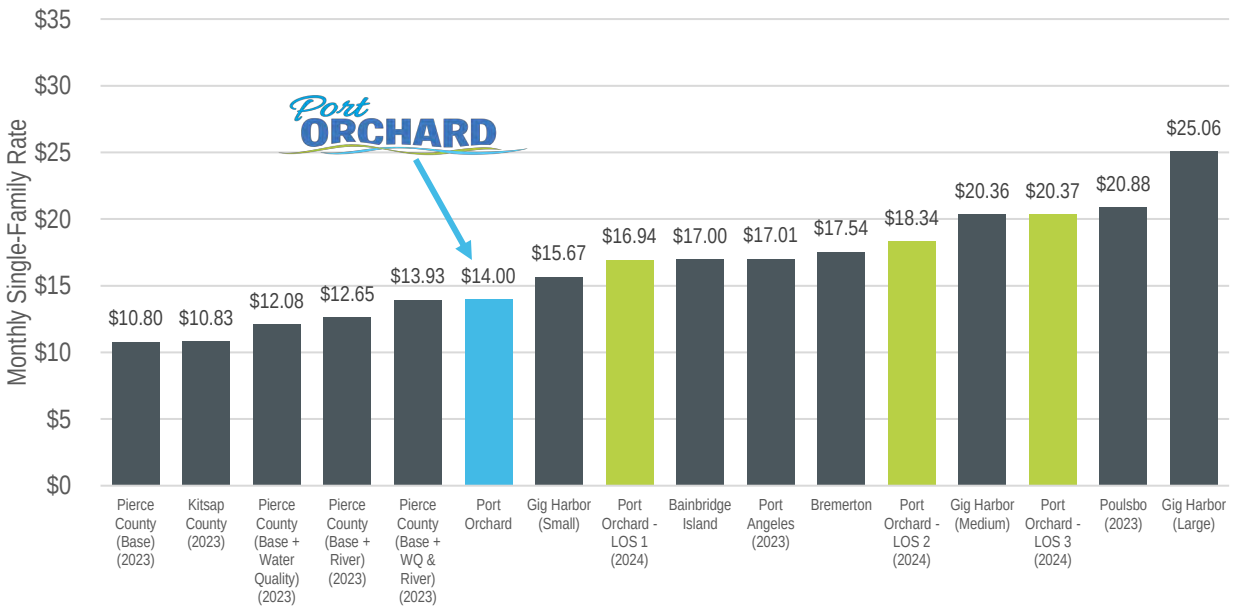
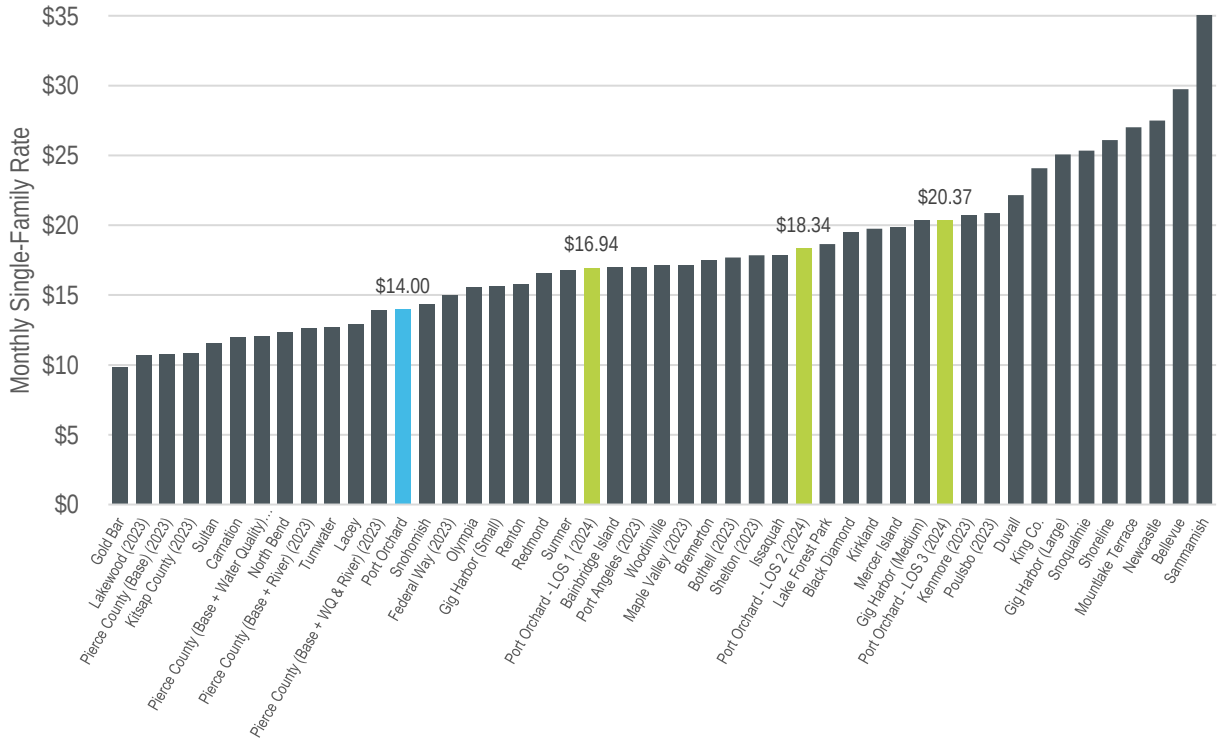


Exhibit 25 shows a wider range of jurisdictions from around western Washington in case that type of comparison is helpful to the City or its customers.

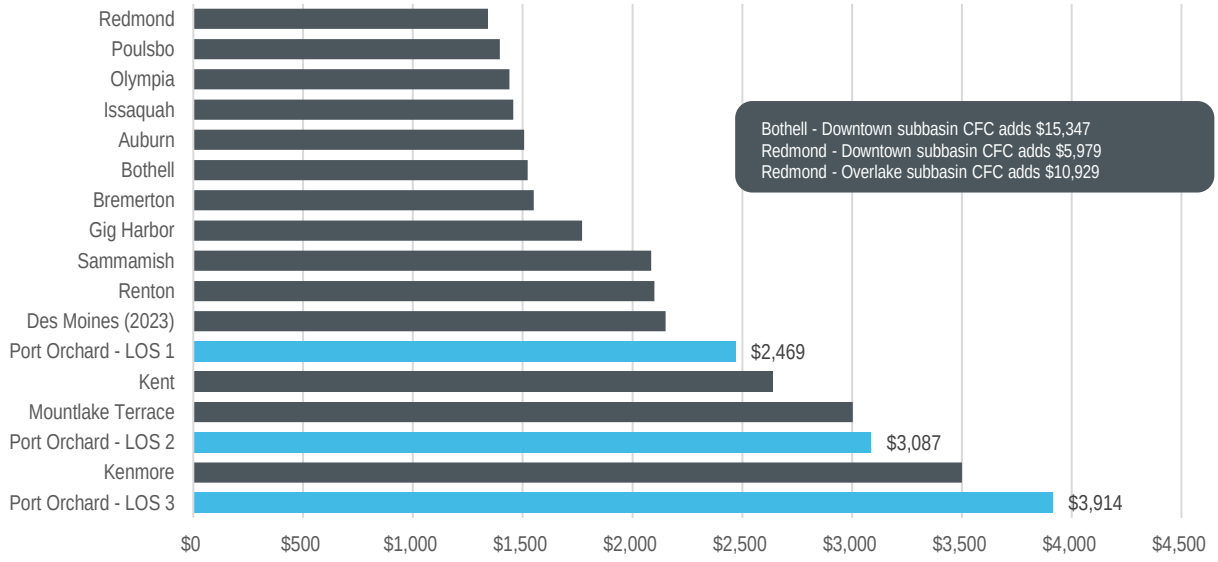
Exhibit 25: Western Washington Jurisdictional Survey – Monthly Single Family Stormwater Rates



Single-Family Stormwater CFC Comparison

FCS GROUP also conducted a survey of western Washington stormwater CFCs. The three potential CFCs of $2,469 for Level of Service 1, $3,087 for Level of Service 2, and $3,914 for Level of Service 3 are on the higher end of charges in the area, but it is important to remember these are simply legal maximums, not required charges. By policy, the City could adopt a charge at any amount up to the calculated charge. Note that some cities, such as Bothell and Redmond, have basin-specific charges that range from $6,000 to $15,000.

Exhibit 26: Western Washington Jurisdictional Survey – Single Family Stormwater CFC



Updating This Study's Findings

It is recommended that the City revisit the study findings during the forecast period to check that the assumptions used are still appropriate and no significant changes have occurred that would alter the results of the study. The City should use the study findings as a living document, routinely comparing the study outcomes to actual revenues and expenses. Any significant or unexpected changes will require adjustments to the rate strategy proposed in this report.

MODEL APPENDICES

Port Orchard
Utility Rate Study: Stormwater Utility
Summary

Level of Service 1

Revenue Requirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Revenues																				
Rate Revenues Under Existing Rates	$ 1,766,827	$ 1,816,709	$ 1,866,592	$ 1,916,474	$ 1,941,415	$ 1,966,356	$ 1,991,297	$ 2,016,238	$ 2,041,179	$ 2,066,120	$ 2,091,061	$ 2,116,003	$ 2,140,944	$ 2,165,885	$ 2,190,826	$ 2,215,767	$ 2,240,708	$ 2,265,649	$ 2,290,590	$ 2,315,531
Non-Rate Revenues	201,380	72,892	66,976	67,861	68,475	70,184	70,559	74,266	74,737	77,394	77,900	81,858	82,402	89,650	90,234	93,730	94,358	100,068	100,742	105,055
Total Revenues	**$ 1,968,207**	**$ 1,889,601**	**$ 1,933,567**	**$ 1,984,334**	**$ 2,009,890**	**$ 2,036,540**	**$ 2,061,856**	**$ 2,090,504**	**$ 2,115,917**	**$ 2,143,514**	**$ 2,168,962**	**$ 2,197,860**	**$ 2,223,345**	**$ 2,255,535**	**$ 2,281,060**	**$ 2,309,497**	**$ 2,335,066**	**$ 2,365,717**	**$ 2,391,332**	**$ 2,420,586**
Expenses																				
Cash Operating Expenses	$ 1,610,383	$ 1,974,677	$ 1,957,605	$ 2,041,830	$ 2,218,577	$ 2,245,086	$ 2,318,786	$ 2,395,059	$ 2,474,002	$ 2,555,716	$ 2,640,307	$ 2,727,883	$ 2,818,558	$ 2,912,450	$ 3,009,683	$ 3,110,383	$ 3,214,685	$ 3,322,726	$ 3,434,652	$ 3,550,611
Existing Debt Service	177,047	177,877	176,883	177,604	178,251	177,075	177,612	178,077	178,468	177,036	189,615	16,525	16,525	16,525	16,525	8,263	-	-	-	-
New Debt Service	-	-	-	-	24,088	24,088	168,615	168,615	264,966	264,966	417,522	417,522	714,606	714,606	843,074	843,074	1,067,894	1,067,894	1,228,479	1,228,479
Total Expenses	**$ 1,787,429**	**$ 2,152,554**	**$ 2,134,488**	**$ 2,219,434**	**$ 2,420,916**	**$ 2,446,249**	**$ 2,665,013**	**$ 2,741,750**	**$ 2,917,436**	**$ 2,997,718**	**$ 3,247,444**	**$ 3,161,931**	**$ 3,549,689**	**$ 3,643,581**	**$ 3,869,282**	**$ 3,961,720**	**$ 4,282,579**	**$ 4,390,620**	**$ 4,663,131**	**$ 4,779,090**
Net Surplus (Deficiency)	$ 180,778	$ (262,953)	$ (200,921)	$ (235,099)	$ (411,026)	$ (409,710)	$ (603,158)	$ (651,247)	$ (801,519)	$ (854,204)	$ (1,078,482)	$ (964,070)	$ (1,326,343)	$ (1,388,046)	$ (1,588,222)	$ (1,652,222)	$ (1,947,512)	$ (2,024,903)	$ (2,271,798)	$ (2,358,504)
Additions to Meet Coverage	-	-	-	-	-	-	-	-	-	-	-	-	(45,169)	-	(72,770)	(65,918)	(141,254)	(122,588)	(176,114)	(157,428)
Total Surplus (Deficiency)	**$ 180,778**	**$ (262,953)**	**$ (200,921)**	**$ (235,099)**	**$ (411,026)**	**$ (409,710)**	**$ (603,158)**	**$ (651,247)**	**$ (801,519)**	**$ (854,204)**	**$ (1,078,482)**	**$ (964,070)**	**$ (1,371,513)**	**$ (1,388,046)**	**$ (1,660,992)**	**$ (1,718,141)**	**$ (2,088,766)**	**$ (2,147,491)**	**$ (2,447,913)**	**$ (2,515,932)**
Annual Rate Increase		**0.00%**	**21.00%**	**21.00%**	**21.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**
Cumulative Rate Increase		**0.00%**	**21.00%**	**46.41%**	**77.16%**	**82.47%**	**87.94%**	**93.58%**	**99.39%**	**105.37%**	**111.53%**	**117.88%**	**124.42%**	**131.15%**	**138.08%**	**145.23%**	**152.58%**	**160.16%**	**167.96%**	**176.00%**
Revenues After Rate Increases	$ 1,766,827	$ 1,816,709	$ 2,258,576	$ 2,805,909	$ 3,439,335	$ 3,588,025	$ 3,742,541	$ 3,903,099	$ 4,069,923	$ 4,243,242	$ 4,423,299	$ 4,610,339	$ 4,804,621	$ 5,006,411	$ 5,215,984	$ 5,433,625	$ 5,659,630	$ 5,894,306	$ 6,137,969	$ 6,390,946
Additional Taxes from Rate Increase	-	-	26,459	60,037	101,110	109,463	118,209	127,363	136,940	146,956	157,426	168,368	179,798	191,736	204,198	217,205	230,777	244,934	259,698	275,090
Net Cash Flow After Rate Increase	**$ 180,778**	**$ (262,953)**	**$ 164,604**	**$ 594,299**	**$ 985,785**	**$ 1,102,497**	**$ 1,029,878**	**$ 1,108,252**	**$ 1,090,284**	**$ 1,175,963**	**$ 1,096,329**	**$ 1,361,899**	**$ 1,157,536**	**$ 1,260,744**	**$ 1,232,738**	**$ 1,348,430**	**$ 1,240,633**	**$ 1,358,819**	**$ 1,315,882**	**$ 1,441,820**
Coverage After Rate Increase: Bonded Debt	n/a	n/a	n/a	n/a	54.16	59.32	8.77	9.39	6.20	6.59	4.35	4.61	2.81	3.04	2.63	2.77	2.28	2.41	2.18	2.30
Coverage After Rate Increase: Total Debt	2.03	0.22	2.57	4.96	6.45	7.10	4.27	4.56	3.70	3.95	2.99	4.43	2.74	2.97	2.58	2.74	2.28	2.41	2.18	2.30
Sample Residential Bill (1 ISU)	$14.00	$14.00	$16.94	$20.50	$24.80	$25.55	$26.31	$27.10	$27.91	$28.75	$29.61	$30.50	$31.42	$32.36	$33.33	$34.33	$35.36	$36.42	$37.52	$38.64
Increase ($)		$0.00	$2.94	$3.56	$4.30	$0.74	$0.77	$0.79	$0.81	$0.84	$0.86	$0.89	$0.92	$0.94	$0.97	$1.00	$1.03	$1.06	$1.09	$1.13

Fund Balance	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Operating Reserve - 421																				
Beginning Balance	$ 2,116,332	$ 706,309	$ 443,357	$ 482,697	$ 509,989	$ 561,850	$ 578,514	$ 598,746	$ 619,710	$ 641,433	$ 663,943	$ 687,270	$ 711,446	$ 736,502	$ 762,472	$ 789,391	$ 817,294	$ 846,220	$ 876,206	$ 907,295
plus: Net Cash Flow after Rate Increase	180,778	(262,953)	164,604	594,299	985,785	1,102,497	1,029,878	1,108,252	1,090,284	1,175,963	1,096,329	1,361,899	1,157,536	1,260,744	1,232,738	1,348,430	1,240,633	1,358,819	1,315,882	1,441,820
less: Transfer of Surplus to Capital Fund	(1,400,000)	-	(125,264)	(567,007)	(933,924)	(1,085,833)	(1,009,646)	(1,087,288)	(1,068,561)	(1,153,452)	(1,073,002)	(1,337,723)	(1,132,480)	(1,234,774)	(1,205,819)	(1,320,527)	(1,211,707)	(1,328,832)	(1,284,793)	(1,409,587)
less: Transfer to Stabilization Fund	(190,800)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Balance	**$ 706,309**	**$ 443,357**	**$ 482,697**	**$ 509,989**	**$ 561,850**	**$ 578,514**	**$ 598,746**	**$ 619,710**	**$ 641,433**	**$ 663,943**	**$ 687,270**	**$ 711,446**	**$ 736,502**	**$ 762,472**	**$ 789,391**	**$ 817,294**	**$ 846,220**	**$ 876,206**	**$ 907,295**	**$ 939,528**
Actual Days of O&M	*160 days*	*82 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*
Minimum Balance Requirement	*$ 264,720*	*$ 324,605*	*$ 321,798*	*$ 339,993*	*$ 374,567*	*$ 385,676*	*$ 399,164*	*$ 413,140*	*$ 427,622*	*$ 442,628*	*$ 458,180*	*$ 474,297*	*$ 491,001*	*$ 508,315*	*$ 526,261*	*$ 544,863*	*$ 564,146*	*$ 584,138*	*$ 604,863*	*$ 626,352*
Maximum Balance Requirement	*$ 397,081*	*$ 486,907*	*$ 482,697*	*$ 509,989*	*$ 561,850*	*$ 578,514*	*$ 598,746*	*$ 619,710*	*$ 641,433*	*$ 663,943*	*$ 687,270*	*$ 711,446*	*$ 736,502*	*$ 762,472*	*$ 789,391*	*$ 817,294*	*$ 846,220*	*$ 876,206*	*$ 907,295*	*$ 939,528*
Capital Reserve - 423																				
Beginning Balance	$ 94,014	$ 1,488,130	$ 872,113	$ 615,290	$ 863,525	$ 1,198,860	$ 102,570	$ 1,193,566	$ 263,157	$ 1,056,229	$ 291,318	$ 978,651	$ 440,433	$ 3,318,433	$ 530,307	$ 1,146,633	$ 608,192	$ 1,382,360	$ 732,259	$ 1,507,343
plus: Transfers from Operating Fund	1,400,000	-	125,264	567,007	933,924	1,085,833	1,009,646	1,087,288	1,068,561	1,153,452	1,073,002	1,337,723	1,132,480	1,234,774	1,205,819	1,320,527	1,211,707	1,328,832	1,284,793	1,409,587
plus: Transfers From General Fund	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: Assumed Capital Grants	-	-	883,761	665,231	2,409,798	356,306	1,106,330	2,385,524	493,803	511,087	2,644,873	1,021,979	1,057,748	5,911,754	1,359,703	628,256	4,551,713	502,509	1,560,291	-
plus: CFC Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: Revenue Bond Proceeds	-	-	-	-	300,000	-	1,800,000	-	1,200,000	-	1,900,000	-	3,700,000	-	1,600,000	-	2,800,000	-	2,000,000	-
plus: Interest Earnings	2,115	33,483	19,623	13,844	19,429	26,974	2,308	26,855	5,921	23,765	6,555	22,020	9,910	74,665	11,932	25,799	13,684	31,103	16,476	33,915
Total Funding Sources	**$ 1,496,130**	**$ 2,021,613**	**$ 1,900,760**	**$ 1,861,371**	**$ 4,526,677**	**$ 2,667,973**	**$ 4,020,854**	**$ 4,693,233**	**$ 3,031,443**	**$ 2,744,533**	**$ 5,915,747**	**$ 3,360,372**	**$ 6,340,570**	**$ 10,539,625**	**$ 4,707,761**	**$ 3,121,215**	**$ 9,185,297**	**$ 3,244,805**	**$ 5,593,819**	**$ 2,950,845**
less: Capital Expenditures (Before Grants)	(8,000)	(1,149,500)	(1,285,470)	(997,846)	(3,327,817)	(2,565,402)	(2,827,287)	(4,430,076)	(1,975,214)	(2,453,215)	(4,937,096)	(2,919,939)	(3,022,137)	(10,009,319)	(3,561,128)	(2,513,023)	(7,802,937)	(2,512,546)	(4,086,476)	(2,095,526)
Ending Capital Fund Balance	**$ 1,488,130**	**$ 872,113**	**$ 615,290**	**$ 863,525**	**$ 1,198,860**	**$ 102,570**	**$ 1,193,566**	**$ 263,157**	**$ 1,056,229**	**$ 291,318**	**$ 978,651**	**$ 440,433**	**$ 3,318,433**	**$ 530,307**	**$ 1,146,633**	**$ 608,192**	**$ 1,382,360**	**$ 732,259**	**$ 1,507,343**	**$ 855,318**
Minimum Target Balance	*$ 132,723*	*$ 144,218*	*$ 148,235*	*$ 151,562*	*$ 160,742*	*$ 182,833*	*$ 200,042*	*$ 220,488*	*$ 235,302*	*$ 254,723*	*$ 277,645*	*$ 296,625*	*$ 316,269*	*$ 357,245*	*$ 379,259*	*$ 398,106*	*$ 430,619*	*$ 450,719*	*$ 475,981*	*$ 496,936*
Combined Beginning Balance	**$ 2,210,346**	**$ 2,194,439**	**$ 1,315,470**	**$ 1,097,987**	**$ 1,373,514**	**$ 1,760,710**	**$ 681,085**	**$ 1,792,313**	**$ 882,867**	**$ 1,697,662**	**$ 955,261**	**$ 1,665,921**	**$ 1,151,879**	**$ 4,054,935**	**$ 1,292,779**	**$ 1,936,024**	**$ 1,425,486**	**$ 2,228,580**	**$ 1,608,465**	**$ 2,414,638**
Combined Ending Balance	**$ 2,194,439**	**$ 1,315,470**	**$ 1,097,987**	**$ 1,373,514**	**$ 1,760,710**	**$ 681,085**	**$ 1,792,313**	**$ 882,867**	**$ 1,697,662**	**$ 955,261**	**$ 1,665,921**	**$ 1,151,879**	**$ 4,054,935**	**$ 1,292,779**	**$ 1,936,024**	**$ 1,425,486**	**$ 2,228,580**	**$ 1,608,465**	**$ 2,414,638**	**$ 1,794,847**
Ending Total Days of Operating Expenditures	*497 days*	*243 days*	*202 days*	*239 days*	*277 days*	*106 days*	*268 days*	*128 days*	*237 days*	*129 days*	*217 days*	*145 days*	*494 days*	*152 days*	*220 days*	*156 days*	*236 days*	*165 days*	*239 days*	*171 days*
Combined Minimum Target Balance	*397,444*	*468,823*	*470,033*	*491,554*	*535,308*	*568,509*	*599,206*	*633,628*	*662,924*	*697,352*	*735,826*	*770,922*	*807,270*	*865,559*	*905,519*	*942,969*	*994,765*	*1,034,857*	*1,080,844*	*1,123,288*

Port Orchard
Utility Rate Study: Stormwater Utility
Summary

Level of Service 2

Revenue Requirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Revenues																				
Rate Revenues Under Existing Rates	$ 1,766,827	$ 1,816,709	$ 1,866,592	$ 1,916,474	$ 1,941,415	$ 1,966,356	$ 1,991,297	$ 2,016,238	$ 2,041,179	$ 2,066,120	$ 2,091,061	$ 2,116,003	$ 2,140,944	$ 2,165,885	$ 2,190,826	$ 2,215,767	$ 2,240,708	$ 2,265,649	$ 2,290,590	$ 2,315,531
Non-Rate Revenues	201,380	72,892	66,976	71,854	76,234	84,666	85,304	89,504	90,084	95,925	96,548	99,543	100,212	111,746	112,465	117,908	118,681	128,514	129,345	135,625
Total Revenues	**$ 1,968,207**	**$ 1,889,601**	**$ 1,933,567**	**$ 1,988,328**	**$ 2,017,649**	**$ 2,051,021**	**$ 2,076,601**	**$ 2,105,742**	**$ 2,131,263**	**$ 2,162,045**	**$ 2,187,610**	**$ 2,215,545**	**$ 2,241,156**	**$ 2,277,631**	**$ 2,303,291**	**$ 2,333,675**	**$ 2,359,389**	**$ 2,394,164**	**$ 2,419,935**	**$ 2,451,157**
Expenses																				
Cash Operating Expenses	$ 1,610,383	$ 1,974,677	$ 2,079,445	$ 2,385,850	$ 2,614,565	$ 2,658,705	$ 2,785,932	$ 2,879,022	$ 2,975,388	$ 3,075,152	$ 3,178,443	$ 3,285,391	$ 3,396,137	$ 3,510,822	$ 3,629,596	$ 3,752,613	$ 3,880,035	$ 4,012,029	$ 4,148,769	$ 4,290,437
Existing Debt Service	177,047	177,877	176,883	177,604	178,251	177,075	177,612	178,077	178,468	177,036	189,615	16,525	16,525	16,525	16,525	8,263	-	-	-	-
New Debt Service	-	-	256,937	256,937	562,049	562,049	714,606	714,606	947,455	947,455	1,051,835	1,051,835	1,533,592	1,533,592	1,742,353	1,742,353	2,143,817	2,143,817	2,384,695	2,384,695
Total Expenses	**$ 1,787,429**	**$ 2,152,554**	**$ 2,513,265**	**$ 2,820,391**	**$ 3,354,865**	**$ 3,397,829**	**$ 3,678,150**	**$ 3,771,704**	**$ 4,101,310**	**$ 4,199,643**	**$ 4,419,892**	**$ 4,353,752**	**$ 4,946,254**	**$ 5,060,939**	**$ 5,388,474**	**$ 5,503,229**	**$ 6,023,852**	**$ 6,155,846**	**$ 6,533,464**	**$ 6,675,132**
Net Surplus (Deficiency)	$ 180,778	$ (262,953)	$ (579,698)	$ (832,063)	$ (1,337,216)	$ (1,346,808)	$ (1,601,549)	$ (1,665,963)	$ (1,970,047)	$ (2,037,597)	$ (2,232,283)	$ (2,138,207)	$ (2,705,098)	$ (2,783,308)	$ (3,085,183)	$ (3,169,554)	$ (3,664,463)	$ (3,761,682)	$ (4,113,529)	$ (4,223,975)
Additions to Meet Coverage	-	-	-	-	-	-	-	-	-	-	-	(110,588)	(248,804)	(141,863)	(295,871)	(279,605)	(407,182)	(379,925)	(462,461)	(438,203)
Total Surplus (Deficiency)	**$ 180,778**	**$ (262,953)**	**$ (579,698)**	**$ (832,063)**	**$ (1,337,216)**	**$ (1,346,808)**	**$ (1,601,549)**	**$ (1,665,963)**	**$ (1,970,047)**	**$ (2,037,597)**	**$ (2,232,283)**	**$ (2,248,795)**	**$ (2,953,902)**	**$ (2,925,171)**	**$ (3,381,053)**	**$ (3,449,159)**	**$ (4,071,645)**	**$ (4,141,608)**	**$ (4,575,990)**	**$ (4,662,179)**
Annual Rate Increase		**0.00%**	**31.00%**	**31.00%**	**31.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**
Cumulative Rate Increase		**0.00%**	**31.00%**	**71.61%**	**124.81%**	**131.55%**	**138.50%**	**145.65%**	**153.02%**	**160.62%**	**168.43%**	**176.49%**	**184.78%**	**193.32%**	**202.12%**	**211.19%**	**220.52%**	**230.14%**	**240.04%**	**250.25%**
Revenues After Rate Increases	$ 1,766,827	$ 1,816,709	$ 2,445,235	$ 3,288,861	$ 4,364,477	$ 4,553,164	$ 4,749,243	$ 4,952,989	$ 5,164,686	$ 5,384,627	$ 5,613,116	$ 5,850,469	$ 6,097,010	$ 6,353,079	$ 6,619,024	$ 6,895,209	$ 7,182,007	$ 7,479,808	$ 7,789,013	$ 8,110,039
Additional Taxes from Rate Increase	-	-	39,058	92,636	163,557	174,610	186,161	198,231	210,837	223,999	237,739	252,076	267,034	282,636	298,903	315,862	333,538	351,956	371,144	391,129
Net Cash Flow After Rate Increase	**$ 180,778**	**$ (262,953)**	**$ (40,113)**	**$ 447,688**	**$ 922,290**	**$ 1,065,391**	**$ 970,235**	**$ 1,072,558**	**$ 942,623**	**$ 1,056,910**	**$ 1,052,033**	**$ 1,344,183**	**$ 983,934**	**$ 1,121,250**	**$ 1,044,112**	**$ 1,194,026**	**$ 943,299**	**$ 1,100,521**	**$ 1,013,750**	**$ 1,179,403**
Coverage After Rate Increase: Bonded Debt	n/a	n/a	1.97	3.94	3.14	3.47	2.75	2.92	2.30	2.44	2.29	2.42	1.73	1.89	1.68	1.77	1.50	1.59	1.48	1.56
Coverage After Rate Increase: Total Debt	2.03	0.22	1.17	2.33	2.38	2.64	2.20	2.33	1.93	2.05	1.94	2.39	1.71	1.87	1.66	1.77	1.50	1.59	1.48	1.56
Sample Residential Bill (1 ISU)	$14.00	$14.00	$18.34	$24.03	$31.47	$32.42	$33.39	$34.39	$35.42	$36.49	$37.58	$38.71	$39.87	$41.07	$42.30	$43.57	$44.87	$46.22	$47.61	$49.03
Increase ($)		$0.00	$4.34	$5.69	$7.45	$0.94	$0.97	$1.00	$1.03	$1.06	$1.09	$1.13	$1.16	$1.20	$1.23	$1.27	$1.31	$1.35	$1.39	$1.43

Fund Balance	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Operating Reserve - 421																				
Beginning Balance	$ 2,116,332	$ 706,309	$ 443,357	$ 403,244	$ 597,923	$ 667,529	$ 695,900	$ 729,997	$ 755,799	$ 782,536	$ 810,244	$ 838,958	$ 868,717	$ 899,559	$ 931,526	$ 964,660	$ 999,004	$ 1,034,605	$ 1,071,510	$ 1,109,768
plus: Net Cash Flow after Rate Increase	180,778	(262,953)	(40,113)	447,688	922,290	1,065,391	970,235	1,072,558	942,623	1,056,910	1,052,033	1,344,183	983,934	1,121,250	1,044,112	1,194,026	943,299	1,100,521	1,013,750	1,179,403
less: Transfer of Surplus to Capital Fund	(1,400,000)	-	-	(253,009)	(852,684)	(1,037,019)	(936,139)	(1,046,756)	(915,886)	(1,029,202)	(1,023,319)	(1,314,424)	(953,092)	(1,089,283)	(1,010,979)	(1,159,682)	(907,698)	(1,063,616)	(975,492)	(1,139,740)
less: Transfer to Stabilization Fund	(190,800)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Balance	**$ 706,309**	**$ 443,357**	**$ 403,244**	**$ 597,923**	**$ 667,529**	**$ 695,900**	**$ 729,997**	**$ 755,799**	**$ 782,536**	**$ 810,244**	**$ 838,958**	**$ 868,717**	**$ 899,559**	**$ 931,526**	**$ 964,660**	**$ 999,004**	**$ 1,034,605**	**$ 1,071,510**	**$ 1,109,768**	**$ 1,149,431**
Actual Days of O&M	*160 days*	*82 days*	*71 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*
Minimum Balance Requirement	*$ 264,720*	*$ 324,605*	*$ 341,826*	*$ 398,615*	*$ 445,019*	*$ 463,933*	*$ 486,664*	*$ 503,866*	*$ 521,691*	*$ 540,163*	*$ 559,306*	*$ 579,145*	*$ 599,706*	*$ 621,017*	*$ 643,107*	*$ 666,003*	*$ 689,737*	*$ 714,340*	*$ 739,845*	*$ 766,287*
Maximum Balance Requirement	*$ 397,081*	*$ 486,907*	*$ 512,740*	*$ 597,923*	*$ 667,529*	*$ 695,900*	*$ 729,997*	*$ 755,799*	*$ 782,536*	*$ 810,244*	*$ 838,958*	*$ 868,717*	*$ 899,559*	*$ 931,526*	*$ 964,660*	*$ 999,004*	*$ 1,034,605*	*$ 1,071,510*	*$ 1,109,768*	*$ 1,149,431*
Capital Reserve - 423																				
Beginning Balance	$ 94,014	$ 1,488,130	$ 872,113	$ 1,510,083	$ 133,992	$ 2,056,291	$ 229,746	$ 796,932	$ 271,269	$ 1,130,438	$ 413,309	$ 1,335,328	$ 489,843	$ 5,187,353	$ 606,715	$ 1,641,433	$ 743,861	$ 1,899,834	$ 852,586	$ 1,875,278
plus: Transfers from Operating Fund	1,400,000	-	-	253,009	852,684	1,037,019	936,139	1,046,756	915,886	1,029,202	1,023,319	1,314,424	953,092	1,089,283	1,010,979	1,159,682	907,698	1,063,616	975,492	1,139,740
plus: Transfers From General Fund	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: Assumed Capital Grants	-	-	589,174	443,487	1,606,532	1,722,145	1,044,867	318,070	1,646,011	-	-	729,985	755,534	4,222,681	971,217	418,837	3,034,476	358,935	1,114,494	-
plus: CFC Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: Revenue Bond Proceeds	-	-	3,200,000	-	3,800,000	-	1,900,000	-	2,900,000	-	1,300,000	-	6,000,000	-	2,600,000	-	5,000,000	-	3,000,000	-
plus: Interest Earnings	2,115	33,483	19,623	33,977	3,015	46,267	5,169	17,931	6,104	25,435	9,299	30,045	11,021	116,715	13,651	36,932	16,737	42,746	19,183	42,194
Total Funding Sources	**$ 1,496,130**	**$ 2,021,613**	**$ 4,680,909**	**$ 2,240,556**	**$ 6,396,223**	**$ 4,861,722**	**$ 4,115,921**	**$ 2,179,688**	**$ 5,739,270**	**$ 2,185,075**	**$ 2,745,927**	**$ 3,409,782**	**$ 8,209,490**	**$ 10,616,033**	**$ 5,202,561**	**$ 3,256,884**	**$ 9,702,771**	**$ 3,365,132**	**$ 5,961,755**	**$ 3,057,212**
less: Capital Expenditures (Before Grants)	(8,000)	(1,149,500)	(3,170,826)	(2,106,564)	(4,339,932)	(4,631,977)	(3,318,989)	(1,908,419)	(4,608,832)	(1,771,767)	(1,410,599)	(2,919,939)	(3,022,137)	(10,009,319)	(3,561,128)	(2,513,023)	(7,802,937)	(2,512,546)	(4,086,476)	(2,095,526)
Ending Capital Fund Balance	**$ 1,488,130**	**$ 872,113**	**$ 1,510,083**	**$ 133,992**	**$ 2,056,291**	**$ 229,746**	**$ 796,932**	**$ 271,269**	**$ 1,130,438**	**$ 413,309**	**$ 1,335,328**	**$ 489,843**	**$ 5,187,353**	**$ 606,715**	**$ 1,641,433**	**$ 743,861**	**$ 1,899,834**	**$ 852,586**	**$ 1,875,278**	**$ 961,686**
Minimum Target Balance	*$ 132,723*	*$ 144,218*	*$ 170,035*	*$ 186,666*	*$ 214,000*	*$ 243,098*	*$ 265,839*	*$ 281,743*	*$ 311,371*	*$ 329,088*	*$ 343,194*	*$ 365,094*	*$ 387,760*	*$ 445,626*	*$ 471,526*	*$ 492,467*	*$ 540,152*	*$ 561,688*	*$ 591,408*	*$ 612,363*
Combined Beginning Balance	**$ 2,210,346**	**$ 2,194,439**	**$ 1,315,470**	**$ 1,913,327**	**$ 731,915**	**$ 2,723,820**	**$ 925,646**	**$ 1,526,928**	**$ 1,027,068**	**$ 1,912,974**	**$ 1,223,553**	**$ 2,174,286**	**$ 1,358,560**	**$ 6,086,912**	**$ 1,538,241**	**$ 2,606,093**	**$ 1,742,865**	**$ 2,934,439**	**$ 1,924,096**	**$ 2,985,046**
Combined Ending Balance	**$ 2,194,439**	**$ 1,315,470**	**$ 1,913,327**	**$ 731,915**	**$ 2,723,820**	**$ 925,646**	**$ 1,526,928**	**$ 1,027,068**	**$ 1,912,974**	**$ 1,223,553**	**$ 2,174,286**	**$ 1,358,560**	**$ 6,086,912**	**$ 1,538,241**	**$ 2,606,093**	**$ 1,742,865**	**$ 2,934,439**	**$ 1,924,096**	**$ 2,985,046**	**$ 2,111,116**
Ending Total Days of Operating Expenditures	*497 days*	*243 days*	*330 days*	*108 days*	*358 days*	*119 days*	*188 days*	*122 days*	*219 days*	*135 days*	*232 days*	*140 days*	*607 days*	*148 days*	*242 days*	*156 days*	*254 days*	*161 days*	*241 days*	*165 days*
Combined Minimum Target Balance	*397,444*	*468,823*	*511,861*	*585,281*	*659,019*	*707,031*	*752,504*	*785,608*	*833,062*	*869,251*	*902,500*	*944,239*	*987,466*	*1,066,644*	*1,114,632*	*1,158,470*	*1,229,889*	*1,276,028*	*1,331,253*	*1,378,650*

Port Orchard
Utility Rate Study: Stormwater Utility
Summary

Level of Service 3

Revenue Requirement	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Revenues																				
Rate Revenues Under Existing Rates	$ 1,766,827	$ 1,816,709	$ 1,866,592	$ 1,916,474	$ 1,941,415	$ 1,966,356	$ 1,991,297	$ 2,016,238	$ 2,041,179	$ 2,066,120	$ 2,091,061	$ 2,116,003	$ 2,140,944	$ 2,165,885	$ 2,190,826	$ 2,215,767	$ 2,240,708	$ 2,265,649	$ 2,290,590	$ 2,315,531
Non-Rate Revenues	201,380	72,892	66,976	76,023	82,864	119,173	120,132	134,666	134,636	136,737	137,417	138,482	139,212	139,925	140,663	141,426	142,215	143,032	143,877	144,752
Total Revenues	**$ 1,968,207**	**$ 1,889,601**	**$ 1,933,567**	**$ 1,992,497**	**$ 2,024,279**	**$ 2,085,529**	**$ 2,111,429**	**$ 2,150,904**	**$ 2,175,816**	**$ 2,202,858**	**$ 2,228,478**	**$ 2,254,485**	**$ 2,280,156**	**$ 2,305,810**	**$ 2,331,488**	**$ 2,357,192**	**$ 2,382,923**	**$ 2,408,681**	**$ 2,434,467**	**$ 2,460,283**
Expenses																				
Cash Operating Expenses	$ 1,610,383	$ 1,974,677	$ 2,146,526	$ 2,455,346	$ 2,725,819	$ 2,770,589	$ 3,029,991	$ 3,008,164	$ 3,109,179	$ 3,213,759	$ 3,322,039	$ 3,434,158	$ 3,550,259	$ 3,670,492	$ 3,795,014	$ 3,923,987	$ 4,057,578	$ 4,195,964	$ 4,339,325	$ 4,487,853
Existing Debt Service	177,047	177,877	176,883	177,604	178,251	177,075	177,612	178,077	178,468	177,036	189,615	16,525	16,525	16,525	16,525	8,263	-	-	-	-
New Debt Service	-	-	529,932	529,932	2,055,495	2,055,495	2,633,603	2,633,603	2,697,837	2,697,837	2,713,895	2,713,895	2,713,895	2,713,895	2,713,895	2,713,895	2,713,895	2,713,895	2,713,895	2,713,895
Total Expenses	**$ 1,787,429**	**$ 2,152,554**	**$ 2,853,341**	**$ 3,162,882**	**$ 4,959,565**	**$ 5,003,159**	**$ 5,841,206**	**$ 5,819,843**	**$ 5,985,483**	**$ 6,088,632**	**$ 6,225,549**	**$ 6,164,578**	**$ 6,280,679**	**$ 6,400,913**	**$ 6,525,435**	**$ 6,646,144**	**$ 6,771,473**	**$ 6,909,859**	**$ 7,053,221**	**$ 7,201,748**
Net Surplus (Deficiency)	$ 180,778	$ (262,953)	$ (919,774)	$ (1,170,385)	$ (2,935,286)	$ (2,917,630)	$ (3,729,777)	$ (3,668,938)	$ (3,809,667)	$ (3,885,774)	$ (3,997,071)	$ (3,910,094)	$ (4,000,523)	$ (4,095,103)	$ (4,193,946)	$ (4,288,952)	$ (4,388,550)	$ (4,501,178)	$ (4,618,753)	$ (4,741,465)
Additions to Meet Coverage	-	-	-	-	(234,568)	(27,737)	(372,042)	(356,472)	(381,437)	(373,694)	(370,751)	(542,673)	(541,336)	(539,218)	(536,382)	(541,112)	(544,988)	(539,774)	(538,391)	(532,933)
Total Surplus (Deficiency)	**$ 180,778**	**$ (262,953)**	**$ (919,774)**	**$ (1,170,385)**	**$ (3,169,854)**	**$ (2,945,367)**	**$ (4,101,819)**	**$ (4,025,410)**	**$ (4,191,104)**	**$ (4,259,468)**	**$ (4,367,822)**	**$ (4,452,766)**	**$ (4,541,859)**	**$ (4,634,321)**	**$ (4,730,328)**	**$ (4,830,064)**	**$ (4,933,538)**	**$ (5,040,951)**	**$ (5,157,145)**	**$ (5,274,398)**
Annual Rate Increase		**0.00%**	**45.50%**	**45.50%**	**45.50%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**1.50%**	**1.50%**	**1.50%**	**1.50%**	**1.50%**	**1.50%**	**1.50%**	**1.50%**	**1.50%**
Cumulative Rate Increase		**0.00%**	**45.50%**	**111.70%**	**208.03%**	**217.27%**	**226.79%**	**236.59%**	**246.69%**	**257.09%**	**267.80%**	**273.32%**	**278.92%**	**284.60%**	**290.37%**	**296.23%**	**302.17%**	**308.20%**	**314.32%**	**320.54%**
Revenues After Rate Increases	$ 1,766,827	$ 1,816,709	$ 2,715,891	$ 4,057,223	$ 5,980,085	$ 6,238,617	$ 6,507,280	$ 6,786,447	$ 7,076,508	$ 7,377,865	$ 7,690,935	$ 7,899,408	$ 8,112,405	$ 8,330,015	$ 8,552,328	$ 8,779,436	$ 9,011,433	$ 9,248,414	$ 9,490,478	$ 9,737,722
Additional Taxes from Rate Increase	-	-	57,328	144,501	272,610	288,378	304,829	321,989	339,885	358,543	377,991	390,380	403,074	416,079	429,401	443,048	457,024	471,337	485,992	500,998
Net Cash Flow After Rate Increase	**$ 180,778**	**$ (262,953)**	**$ (127,803)**	**$ 825,864**	**$ 830,774**	**$ 1,066,254**	**$ 481,377**	**$ 779,282**	**$ 885,777**	**$ 1,067,428**	**$ 1,224,811**	**$ 1,482,932**	**$ 1,567,865**	**$ 1,652,949**	**$ 1,738,155**	**$ 1,831,670**	**$ 1,925,151**	**$ 2,010,251**	**$ 2,095,142**	**$ 2,179,728**
Coverage After Rate Increase: Bonded Debt	n/a	n/a	1.31	3.24	1.54	1.76	1.29	1.41	1.44	1.51	1.56	1.60	1.63	1.66	1.69	1.73	1.76	1.79	1.82	1.86
Coverage After Rate Increase: Total Debt	2.03	0.22	0.98	2.43	1.42	1.62	1.21	1.32	1.35	1.41	1.46	1.59	1.62	1.65	1.68	1.72	1.76	1.79	1.82	1.86
Sample Residential Bill (1 ISU)	$14.00	$14.00	$20.37	$29.64	$43.12	$44.42	$45.75	$47.12	$48.54	$49.99	$51.49	$52.26	$53.05	$53.84	$54.65	$55.47	$56.30	$57.15	$58.01	$58.88
Increase ($)		$0.00	$6.37	$9.27	$13.49	$1.29	$1.33	$1.37	$1.41	$1.46	$1.50	$0.77	$0.78	$0.80	$0.81	$0.82	$0.83	$0.84	$0.86	$0.87

Fund Balance	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Operating Reserve - 421																				
Beginning Balance	$ 2,116,332	$ 706,309	$ 443,357	$ 315,554	$ 619,563	$ 707,750	$ 750,378	$ 818,228	$ 816,902	$ 846,041	$ 876,241	$ 907,541	$ 939,982	$ 971,664	$ 1,004,441	$ 1,038,352	$ 1,073,438	$ 1,109,743	$ 1,147,312	$ 1,186,191
plus: Net Cash Flow after Rate Increase	180,778	(262,953)	(127,803)	825,864	830,774	1,066,254	481,377	779,282	885,777	1,067,428	1,224,811	1,482,932	1,567,865	1,652,949	1,738,155	1,831,670	1,925,151	2,010,251	2,095,142	2,179,728
less: Transfer of Surplus to Capital Fund	(1,400,000)	-	-	(521,855)	(742,587)	(1,023,626)	(413,527)	(780,607)	(856,638)	(1,037,228)	(1,193,511)	(1,450,491)	(1,536,182)	(1,620,172)	(1,704,244)	(1,796,583)	(1,888,846)	(1,972,682)	(2,056,263)	(2,139,491)
less: Transfer to Stabilization Fund	(190,800)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Balance	**$ 706,309**	**$ 443,357**	**$ 315,554**	**$ 619,563**	**$ 707,750**	**$ 750,378**	**$ 818,228**	**$ 816,902**	**$ 846,041**	**$ 876,241**	**$ 907,541**	**$ 939,982**	**$ 971,664**	**$ 1,004,441**	**$ 1,038,352**	**$ 1,073,438**	**$ 1,109,743**	**$ 1,147,312**	**$ 1,186,191**	**$ 1,226,428**
Actual Days of O&M	*160 days*	*82 days*	*54 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*	*90 days*
Minimum Balance Requirement	*$ 264,720*	*$ 324,605*	*$ 352,854*	*$ 413,042*	*$ 471,833*	*$ 500,252*	*$ 545,485*	*$ 544,602*	*$ 564,028*	*$ 584,161*	*$ 605,027*	*$ 626,655*	*$ 647,776*	*$ 669,627*	*$ 692,234*	*$ 715,625*	*$ 739,829*	*$ 764,875*	*$ 790,794*	*$ 817,618*
Maximum Balance Requirement	*$ 397,081*	*$ 486,907*	*$ 529,280*	*$ 619,563*	*$ 707,750*	*$ 750,378*	*$ 818,228*	*$ 816,902*	*$ 846,041*	*$ 876,241*	*$ 907,541*	*$ 939,982*	*$ 971,664*	*$ 1,004,441*	*$ 1,038,352*	*$ 1,073,438*	*$ 1,109,743*	*$ 1,147,312*	*$ 1,186,191*	*$ 1,226,428*
Capital Reserve - 423																				
Beginning Balance	$ 94,014	$ 1,488,130	$ 872,113	$ 3,956,693	$ 177,050	$ 9,366,409	$ 408,055	$ 1,024,008	$ 555,376	$ 907,701	$ 602,456	$ 598,923	$ 602,920	$ 641,599	$ 712,251	$ 813,826	$ 953,372	$ 1,129,682	$ 1,135,692	$ 1,322,869
plus: Transfers from Operating Fund	1,400,000	-	-	521,855	742,587	1,023,626	413,527	780,607	856,638	1,037,228	1,193,511	1,450,491	1,536,182	1,620,172	1,704,244	1,796,583	1,888,846	1,972,682	2,056,263	2,139,491
plus: Transfers From General Fund	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: Assumed Capital Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: CFC Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
plus: Revenue Bond Proceeds	-	-	6,600,000	-	19,000,000	-	7,200,000	-	800,000	-	200,000	-	-	-	-	-	-	-	-	-
plus: Interest Earnings	2,115	33,483	19,623	89,026	3,984	210,744	9,181	23,040	12,496	20,423	13,555	13,476	13,566	14,436	16,026	18,311	21,451	25,418	25,553	29,765
Total Funding Sources	**$ 1,496,130**	**$ 2,021,613**	**$ 7,491,735**	**$ 4,567,573**	**$19,923,621**	**$10,600,779**	**$ 8,030,764**	**$ 1,827,656**	**$ 2,224,510**	**$ 1,965,353**	**$ 2,009,522**	**$ 2,062,890**	**$ 2,152,668**	**$ 2,276,207**	**$ 2,432,521**	**$ 2,628,720**	**$ 2,863,668**	**$ 3,127,782**	**$ 3,217,508**	**$ 3,492,124**
less: Capital Expenditures (Before Grants)	(8,000)	(1,149,500)	(3,535,043)	(4,390,523)	(10,557,212)	(10,192,724)	(7,006,755)	(1,272,279)	(1,316,809)	(1,362,897)	(1,410,599)	(1,459,970)	(1,511,069)	(1,563,956)	(1,618,695)	(1,675,349)	(1,733,986)	(1,992,090)	(1,894,639)	(1,960,951)
Ending Capital Fund Balance	**$ 1,488,130**	**$ 872,113**	**$ 3,956,693**	**$ 177,050**	**$ 9,366,409**	**$ 408,055**	**$ 1,024,008**	**$ 555,376**	**$ 907,701**	**$ 602,456**	**$ 598,923**	**$ 602,920**	**$ 641,599**	**$ 712,251**	**$ 813,826**	**$ 953,372**	**$ 1,129,682**	**$ 1,135,692**	**$ 1,322,869**	**$ 1,531,173**
Minimum Target Balance	*$ 132,723*	*$ 144,218*	*$ 179,569*	*$ 223,474*	*$ 329,046*	*$ 430,973*	*$ 501,041*	*$ 513,764*	*$ 526,932*	*$ 540,561*	*$ 554,667*	*$ 569,266*	*$ 584,377*	*$ 600,017*	*$ 616,204*	*$ 632,957*	*$ 650,297*	*$ 670,218*	*$ 689,164*	*$ 708,774*
Combined Beginning Balance	**$ 2,210,346**	**$ 2,194,439**	**$ 1,315,470**	**$ 4,272,247**	**$ 796,614**	**$10,074,159**	**$ 1,158,433**	**$ 1,842,236**	**$ 1,372,279**	**$ 1,753,743**	**$ 1,478,696**	**$ 1,506,464**	**$ 1,542,902**	**$ 1,613,264**	**$ 1,716,692**	**$ 1,852,178**	**$ 2,026,810**	**$ 2,239,425**	**$ 2,283,004**	**$ 2,509,060**
Combined Ending Balance	**$ 2,194,439**	**$ 1,315,470**	**$ 4,272,247**	**$ 796,614**	**$10,074,159**	**$ 1,158,433**	**$ 1,842,236**	**$ 1,372,279**	**$ 1,753,743**	**$ 1,478,696**	**$ 1,506,464**	**$ 1,542,902**	**$ 1,613,264**	**$ 1,716,692**	**$ 1,852,178**	**$ 2,026,810**	**$ 2,239,425**	**$ 2,283,004**	**$ 2,509,060**	**$ 2,757,600**
Ending Total Days of Operating Expenditures	*497 days*	*243 days*	*708 days*	*112 days*	*1,226 days*	*138 days*	*202 days*	*150 days*	*186 days*	*151 days*	*149 days*	*147 days*	*149 days*	*153 days*	*160 days*	*169 days*	*181 days*	*179 days*	*190 days*	*202 days*
Combined Minimum Target Balance	*397,444*	*468,823*	*532,422*	*636,516*	*800,879*	*931,225*	*1,046,526*	*1,058,365*	*1,090,959*	*1,124,721*	*1,159,694*	*1,195,921*	*1,232,153*	*1,269,644*	*1,308,438*	*1,348,582*	*1,390,126*	*1,435,092*	*1,479,958*	*1,526,392*