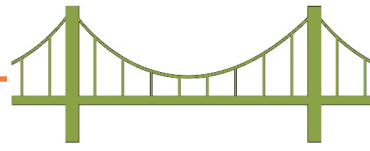


FINAL



CAPITAL FACILITIES PLAN FOR KITSAP COUNTY 2016 COMPREHENSIVE PLAN UPDATE

Recommendation to BOCC June 2016



KITSAP COUNTY CAPITAL FACILITIES PLAN

2016 Comprehensive Plan Update

Prepared by: BERK Consulting, BHC Consultants, and Heffron Transportation Inc. in collaboration with Kitsap County. With contributions by Cities and Special Districts.

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Appendix A. Sewer System Maps 2036 – Preferred Alternative

Appendix B. Sewer System Costs and Revenues

CAPITAL FACILITIES PLAN

1.0 PLAN FOUNDATION

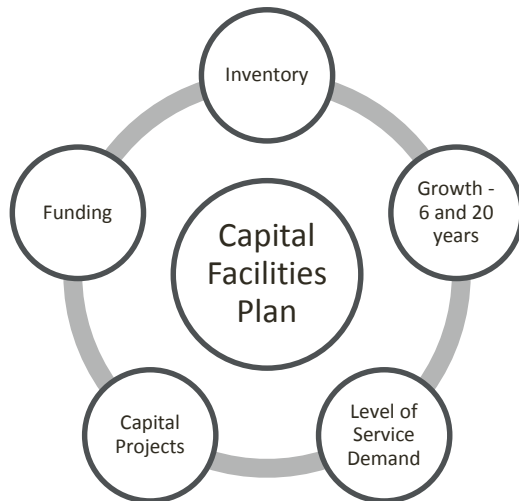
1.1 The Capital Facility Plan

The purpose of this Capital Facility Plan (CFP) appendix is to meet the requirements of the Growth Management Act (GMA) to identify capital improvements and associated funding that support the County’s land use plan and growth targets for the period 2016-2036. Investing in capital facilities will help support the community’s quality of life in urban and rural areas by ensuring responsive public safety services, access to parks and recreation, coordination of schools with student growth, necessary water supply, and wastewater treatment, stormwater management, and other important services. Providing quality facilities can also attract economic investment to Urban Growth Areas (UGAs) where denser employment and housing opportunities are desired.

Infrastructure and Services Addressed in the Capital Facility Plan

The CFP contains an inventory of each facility and associated service, level of service standards, revenue projections, and capital costs, and descriptions of how facilities are to be funded. Of particular focus are facilities needed to support urban growth in UGAs. The components of the CFP are illustrated in Exhibit 1-1.

Exhibit 1-1. Capital Facilities Plan (CFP) Update Process



Source: BERK Consulting 2015

According to WAC 365-196-415, the inventory and analysis of capital facilities must include, at a minimum, water systems, sewer systems, stormwater

Requirements for the Capital Facilities Plan

GMA specifies that the capital facilities element should consist of a) an inventory of existing capital facilities owned by public entities; b) a forecast of the future needs for capital facilities; c) the proposed locations and capacities of expanded or new capital facilities; d) a six-year capital facilities plan that will finance capital facilities within projected funding capacities and clearly identifies sources of public money for such purposes; and e) a requirement to reassess the land use element if probable funding falls short of existing needs. (RCW 36.70a.070 (3))

Recent Growth Management Hearings Board cases have placed more importance on the preparation and implementation of CFPs. The key points include:

- Capital facilities plans should address the 20-year planning period and be consistent with growth allocations assumed in the Land Use Element.
- Capital facilities plans should also demonstrate an ability to serve the full UGA. Existing un-served areas in the UGA must be addressed as well as new UGA expansion areas.
- Financial plans should address at least a six-year period and funding sources should be specific and committed. The County should provide a sense of the funding sources for the 20-year period, though it can be less detailed than for the six-year period.

systems, schools, parks and recreation facilities, police facilities, and fire facilities. This CFP addresses the capital facilities and services listed in Exhibit 1-2.

Exhibit 1-2. Capital Facilities and Services Addressed

Capital Facility and Service Topic	Providers to Unincorporated UGAs and Rural Areas
Administration: Public Buildings	Kitsap County
Public Safety: Law Enforcement	Kitsap County
Public Safety: Fire Protection	North Kitsap Fire District, Central Kitsap Fire District, City of Bremerton, South Kitsap Fire District. Poulsbo Fire Department / District 18, Bainbridge Island
Parks and Recreation	Kitsap County
Schools	North Kitsap School District, Central Kitsap School District, Bremerton School District, South Kitsap School District
Solid Waste	Kitsap County
Stormwater	Kitsap County
Transportation	Kitsap County
Wastewater: Sanitary Sewer	Kitsap County, Cities, and Special Districts
Water	Cities and Special Districts

Source: BERK Consulting 2015

1.2 Relationship to the Comprehensive Plan and Future Land Use Plan

County Services and Planning Responsibilities

Capital facilities generally have a long useful life and include County and non-County operated infrastructure, buildings, and equipment. The County’s definition of a capital asset is:

Capital Assets typically include land, machinery and buildings, and are further defined as assets whose benefits are realized over future fiscal periods. (Kitsap County Auditor, 2014)

Capital facilities planning does not cover regular operation and maintenance, but it does include major repair, rehabilitation, or reconstruction of facilities.

The County is responsible for allocating growth and designating UGAs. UGAs must include cities and land characterized by urban uses that is needed to support growth allocations. UGAs must be supported by public facilities and services. (RCW 36.70A.110)

The County is also responsible for the services it provides both countywide and in unincorporated areas, including governmental administration, criminal justice and law enforcement, transportation, stormwater, solid waste, and sanitary sewer.

Beyond considering its own services, the County is charged with ensuring that other municipalities serving UGAs and rural areas have adequate services and facilities, particularly those necessary to serve growth. These include cities and special districts providing water, sewer, fire protection, and schools. For some services the County collects impact fees, which are based on the needs identified in the CFP; these services include roads, parks, and schools. The County also addresses impacts of growth through SEPA mitigation fees, such as for fire districts.

Land Use and Growth Assumptions

Per WAC 365-196-415, the CFP “should forecast needs for capital facilities during the planning period, based on the levels of service or planning assumptions selected and consistent with the growth, densities, and distribution of growth anticipated in the land use element.”

Kitsap County updated its Comprehensive Plan for the 2016-2036 period. The Update includes consideration of growth and land use alternatives. The County selected a Preferred Alternative growth plan after a series of public hearings and consideration of policy and environmental factors (see the Kitsap County 2016 Comprehensive Plan Update Supplemental Environmental Impact Statement April 2016).

This CFP is based on population data of the Preferred Alternative. See Exhibit 1-3.

**Exhibit 1-3. Population Growth Estimates and Projections:
Base Year, 2021, and 2036**

Topic	Preferred Alternative
Countywide Population: 2015	258,200
Unincorporated Population: 2015	171,940
Countywide Population: 2021	278,676
Unincorporated Population: 2021	183,015
Countywide Population: 2036	332,993
Unincorporated Population: 2036	213,923

Source: Kitsap County Community Development;
Office of Financial Management (OFM); BERK Consulting 2015

For coordination purposes, alternative population forecasts were projected in a range and distributed to capital facility providers throughout the county. Capital facility providers were provided year 2021 and 2036 forecasts by transportation analysis zones that could be aggregated to generally approximate service area boundaries.

1.3 Foundation Documents

The documents used for preparation of the CFP are the capital facility and capital improvement plans prepared routinely by the Kitsap County, which are required for obtaining funding. The following documents are incorporated by reference:

- Budget including Capital Improvement Program, 2016
- Capital Facilities Six-Year Plans (2016 through 2021)
- Six Year Transportation Improvements, 2016-2021
- Surface & Stormwater Management, 2016-2021
- Solid Waste Facilities, 2015-2020
- Sewer Utility Capital Projects, 2015-2020
- Central Kitsap County Wastewater Facility Plan March 2011
- Kitsap County Nonmotorized Facility Plan, 2013
- Waste Wise Communities: The Future of Solid and Hazardous Waste Management in Kitsap County, February 2011
- Kitsap County Parks, Recreation & Open Space Plan 2012

In addition, functional plans for non-County service providers are also reviewed and incorporated by reference as appropriate in Chapter 4.

2.0 COMPREHENSIVE CAPITAL FACILITY PLAN

2.1 Study Area and Inventory

Kitsap County encompasses approximately 395 square miles of land. See Exhibit 2-1. This CFP addresses all unincorporated portions of Kitsap County – both unincorporated UGAs and rural areas total approximately 319 square miles. UGAs include cities, totaling about 76 square miles, and unincorporated UGAs, at about 30 square miles. Three cities, Poulsbo, Bremerton, and Port Orchard, are surrounded by UGAs. Current unincorporated UGAs are: Kingston, Silverdale, Poulsbo, Central Kitsap, Bremerton UGA (East, West and Gorst), and Port Orchard. In the future, UGAs may incorporate into new communities or annex to existing cities depending on property owner or voter approvals. Outside of urban areas, rural lands include rural residential, rural industrial, and rural commercial areas, as well as lands for forestry, mining, and agriculture.

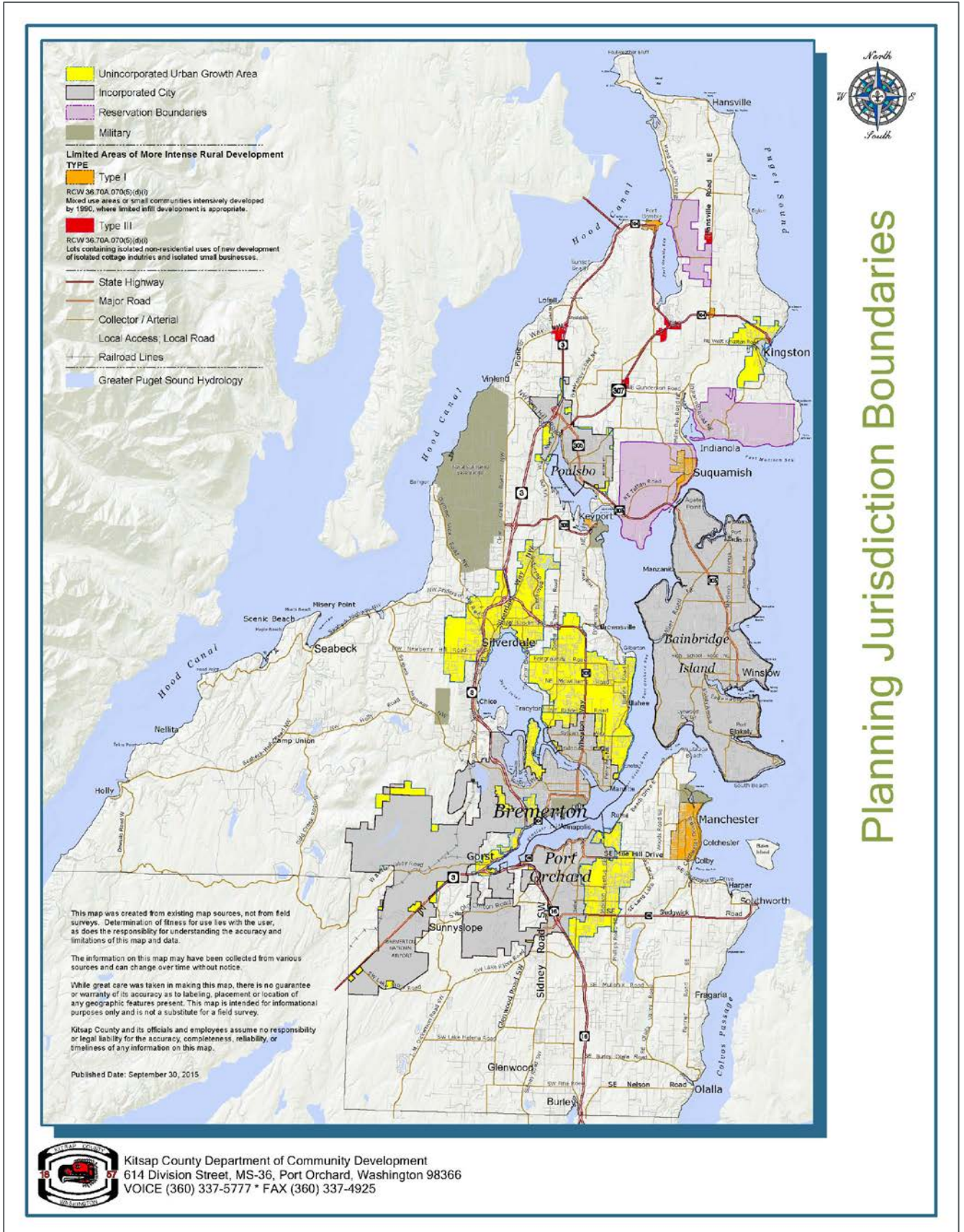


The incorporated cities of Bremerton, Port Orchard, Poulsbo, and Bainbridge Island are responsible for maintaining their individual GMA comprehensive plans, which must be consistent with the County's Plan. The County's planning process, however, includes consultation and coordination with these jurisdictions. Where these cities provide services to unincorporated UGAs, their facility plans are addressed in this CFP.

Further, school, fire protection, water, wastewater, and other special districts serve areas in urban and rural areas.

Current inventories of land, machinery, and buildings in the study area are addressed by service provider in Chapter 4. As appropriate, maps are provided.

Exhibit 2-1. Plan Study Area



Source: Kitsap County Department of Community Development 2015

2.2 Completed Projects

Following the adoption of the 2012 CFP, Kitsap County has made investments in land, buildings, and infrastructure in years 2013 and 2014. Annually, the Kitsap County Auditor prepares a financial report including capital asset investments. The 2013 and 2014 reports show significant investment in infrastructure. See Exhibit 2-2.

Exhibit 2-2. Capital Investments 2013-2014 (in Millions)

Investment Type	2013	2014
Land	\$61.31	\$67.90
Infrastructure	\$485.85	\$495.79
Building	\$185.62	\$185.74
Building Improvements	\$124.10	\$127.29
Machinery & Equipment	\$67.51	\$68.74
Construction in Progress	\$45.85	\$60.50
Total Investment	\$970.2	\$1,005.96
Total Net Investment (net of accumulated depreciation)	\$501.82	\$514.0

Source: (Kitsap County Auditor, 2013); (Kitsap County Auditor, 2014)

Some capital projects highlighted in 2014 include:

- Sewer projects \$19.38 million
- Purchased land for conservation purposes \$6.61 million
- Updated equipment rental fleet \$1.94 million

The 2013 report highlighted the following accomplishments:

- Equipment rental fleet updated at a cost of \$4.51 million
- Various infrastructure projects completed \$3.13 million

2.3 Projected Funding

The CFP uses sound fiscal policies to provide adequate public facilities consistent with the land use element. In Chapter 3, the CFP presents revenue projections and compares dedicated capital dollars to identified capital costs. Where there are gaps between dedicated capital funds and the capital program, the revenue analysis identifies the potential ability to fill gaps with other funding sources. For each service area the CFP identifies funding sources for each capital project. As part of the annual budget, the County adopts a more detailed six-year capital improvement program implementing the CFP.

Chapter 3 includes a revenue analysis of dedicated capital funds, potential gaps in funding, and means to expand or add funding.

2.4 Proposed Projects and Relationship to Growth

Chapter 4 of this plan provides proposed capital projects intended to maintain existing investments and add investments to support growth. Planned County projects address public safety, courtrooms, parks, trails, community centers, roads, regional stormwater facilities, and sewer collection and treatment facilities.

2.5 Levels of Service Consequences

Levels of service (LOS) are established in the CFP and represent quantifiable measures of capacity. They are minimum standards adopted by the County or special district providers to provide capital facilities and services to the community at a certain level of quality and within the financial capacity of the County or special district provider. Examples of LOS measures include: roadway volumes to capacities, acres of parks per 1,000 population, gallons of water per capita per day, and others.

The CFP outlines the LOS consequences of growth for the County both to 2021, and in a longer-term review to 2036. LOS consequences are summarized in Exhibit 2-3 for each facility reviewed. The first column lists service or facility type that Kitsap County is providing and the second column shows the currently adopted LOS. The other columns show, with the Preferred Alternative, what the LOS standard would need to be adjusted to in order for the county to continue to meet its standard through 2021 and 2036, if no further adjustments were made to planned facilities or population growth. A more detailed review of each County service, as well as LOS analysis for non-county-provided facilities, is contained in Section 4.0 Service Area and Infrastructure.

Exhibit 2-3. Adopted and Alternative Levels of Service

County Facility Type	2012 Adopted LOS (per 1,000 pop)	2016 Adjusted LOS Level to meet	2016 Adjusted LOS Level to meet
		Standards through 2021	Standards through 2036
		Preferred Alternative	Preferred Alternative
Public Buildings			
Administration Buildings	952 square feet per 1,000 population	381.9	319.6
Maintenance Facilities	109 square feet per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
District Courtrooms	0.012 courtrooms per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Superior Courtrooms	0.021 courtrooms per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Community Centers	200 square feet per 1,000 population	182.5	152.7
Sheriff Facilities			
Sheriff Offices	129 square feet per 1,000 population	129	109
County Jail	1.43 Beds Per 1,000 population	Replace with Incarceration Rate	Replace with Incarceration Rate
Alternative Standard	Incarceration Rate: 168/100,000 Population	186.2	155.9
Work Release	0.15 Beds Per 1,000 population	No facility: remove standard	No facility: remove standard
Juvenile	0.084 Beds per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Parks, Recreation, and Open Space			
Natural Resources Area: Target	71.1 Acres per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Natural Resources Area: Base	57.1 Acres per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Regional Parks: Target	16.0 Acres per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Regional Parks: Base	8.9 Acres per 1,000 population	10.52	8.89
Heritage Parks: Target	19.0 Acres per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Heritage Parks: Base	11.5 Acres per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Community Parks: Target	4.65 Acres per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Community Parks: Base	3.5 Acres per 1,000 population	4.11	4.12
Shoreline Access	0.061 Miles per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>
Trails	0.20 Miles per 1,000 population	<i>No change to adopted LOS</i>	<i>No change to adopted LOS</i>

Source: BERK Consulting 2015

2.6 Capital Projects and Prioritization

Based on adopted or alternative levels of service presented in Chapter 4 a series of capital projects is proposed for the six-year and 20-year periods. As described in Chapter 3, dedicated capital funds are limited and there is a gap between dedicated funds and capital costs for many of the County’s service areas. Means to fill gaps with other funding sources are described. However, in consideration of limited resources, another means to aligning funds to projects is to prioritize projects around prioritization principles. It is recommended that Kitsap County convene representatives of Public Works, Sherriff, Administration, Community Development, Auditor and others to develop a coordinated set of principles and a process to evaluate and prioritize capital projects, particularly those that share related funding sources. Some interim prioritization principles are listed below for consideration in this Capital Facilities Plan.

Exhibit 2-4. Interim Capital Project Prioritization Criteria

Principle	Criteria
Vision	1. Does the project support the Kitsap County Comprehensive Plan Vision? 2. Does the project implement an approved functional plan?
Existing commitments	3. Are there agreements or other official commitments in place or is a substantial amount of work already complete?
Leverage existing system	4. Does the project help complete the existing system in the County or subarea? 5. Does the project improve the quality of existing facilities
Available maintenance resources	6. Are long-term sustainable maintenance resources available? 7. Does a project scope or timing help avoid major maintenance costs down the road?
Funding and partnerships	8. Does the project require specific windows of partner participation or is it eligible for specific grants? 9. Does the proposal represent a unique funding opportunity? 10. Is the project drawing from entrepreneurial opportunity with a long-term capital or program funding stream?
Best provider	11. Is the County the best provider of the facility or service?
Benefits outweigh cost	12. Is there a substantial benefit in relation to cost of the facility service?
Equity	13. Is there a fair distribution of investment and benefits among different communities? 14. This project provides added facilities or services to meet the needs of underserved populations.
Community support	15. Does the project have the support of the community? Will it benefit a significant numbers of persons in the community?

Source: BERK Consulting 2015

2.7 Reassessment Policy

Those facilities and services necessary to support growth should have LOS standards and facilities. The County must reassess the land use element and other elements of the comprehensive plan if the probable funding falls short of meeting the need for facilities that are determined by a county or city to be necessary for development.

Growth, LOS standards, and a funded capital improvement program are to be in balance. In the case where the LOS cannot be met by a particular service or facility, the jurisdiction could do one of the following: 1) add proposed facilities within funding resources, 2) reduce demand through demand management strategies, 3) lower LOS standards, 4) phase growth, or 5) change the land use plan. In the case of transportation, the County would have to deny development that would

cause LOS to decline below the adopted standards unless transportation facilities can be implemented at the time of development or within six years: “concurrent with the development” means that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years.” (RCW 36.70A.070(6))

3.0 REVENUE ANALYSIS

3.1 Introduction

This section discusses Kitsap County’s capital facilities revenues for County-provided facilities and services. The purpose of this financial analysis is to understand the fiscal constraints of the Kitsap County CFP. These revenue estimates were developed to assist in project planning, but are not intended to be precise forecasts. Exact funding levels are difficult to predict given the uncertainties of funding sources; high sensitivity to local, state, and federal policy decisions; personal choices of residents; and other market forces.



Estimated future revenues have been projected for the Plan’s 2016-2036 time period in year of expenditure dollars (YOES\$). The revenue analysis is grouped in the following categories:

- **Dedicated Capital Revenues.** These revenues are required by law to be used for specific types of capital expenditures.
- **General Capital Revenues.** These revenues are required by law to be used for capital, but the types of capital projects are not restricted.
- **Impacts of Annexations.** Annexation and incorporation of land into cities can have significant impacts on the County’s revenues, by decreasing the tax base.
- **Potential Policy Options and Other Funding Sources.** This section covers other ways the County could fund its capital project costs, including policy choices and sources such as local improvement districts.

Some of the funds discussed in this analysis may be used for maintenance and operations of existing capital facilities or for construction of new capital facilities. However, if maintenance and operations costs of existing facilities increase faster than revenues, jurisdictions are confronted with difficult decisions of whether to fund these costs rather than building new facilities, or to maintain current facilities that may provide lower levels of service. Those decisions will be made by the Board of County Commissioners and the County’s executive leadership. Every effort has been made in this analysis to include only those revenues that the County currently chooses to use for capital investments. No funds currently used for maintenance and operations have been included in the capital revenue analysis.

3.2 Assumptions

The revenue projections included in this analysis are based on some up-front assumptions. The most significant assumptions are:

Annexation. This analysis makes annexation assumptions that are based on discussions with County staff familiar with the County’s and cities’ future plans. The assumptions provide a conservative picture of future revenues and demand for service; however, it is noted that if the annexations occur there would be corresponding change in responsibilities for capital project implementation that would be reflected in future capital plans for the County.

- This analysis assumes that the Silverdale UGA incorporates in 2026.

- This analysis assumes the cities in Kitsap County will annex all commercial areas in their assigned UGAs by 2026, but will not annex any additional residential areas until 2036. The annexations of commercial areas are assumed to occur incrementally between 2016 and 2036.

Real Estate Growth. This analysis makes assumptions about the growth in assessed value of real estate, which affects both Real Estate Excise Tax (REET) revenues and the Conservation Futures Levy that supports park capital projects. There are two pieces to projecting future real estate:

- **Escalation Rate of Assessed Values.** Given that the real estate market has recovered in the years since the recession, this analysis assumes that real estate assessed values will increase at a rate of 2% annually, beginning in 2016. This rate of increase reflects a level similar to, but slightly lower than, historical average levels of growth.
- **Turnover Rate of Properties.** To be conservative, this analysis assumes a turnover rate of 5.0% for residential properties and 3.5% for commercial properties in 2016, which are considered typical levels of turnover for those property types.

The assumptions being used for this revenue analysis may not align with the County's budget assumptions regarding the same sources of revenue. The assumptions differ because the purposes of the two analyses are different: the purpose of the County's budget is to estimate how much money the County will have available to spend in the coming fiscal year; the purpose of this CFP revenue analysis is to estimate how much money the County is *likely* to receive over the next six years and next twenty years. The County's budgeting process works to estimate how much money will be received in a given year, while this revenue analysis estimates long-term averages based on historical trends.

3.3 Dedicated Capital Revenues

Transportation

State Motor Vehicle Fuel Tax

Counties and cities receive a portion of the State Motor Vehicle Fuel (MVF) tax based on a complex reimbursement formula relying largely on road miles within the jurisdiction. State MVF tax rates saw a series of voter-approved increases in past years. Most of those additional funds, however, were earmarked for specific transportation projects throughout the State, and local jurisdictions did not see a noticeable increase in average revenues. In addition, the last increase was made in 2015, to be implemented in two stages. A seven-cent increase went into effect in August of 2015, and a four and nine-tenths cent increase will occur in July of 2016.

Assumptions: Revenues in this category have been projected using estimated revenues per centerline miles of road in the unincorporated county. There are two counter forces affecting miles of road in the unincorporated county: road miles increase as the County builds new roads and expands current ones, and road miles decrease as land is annexed and incorporated.

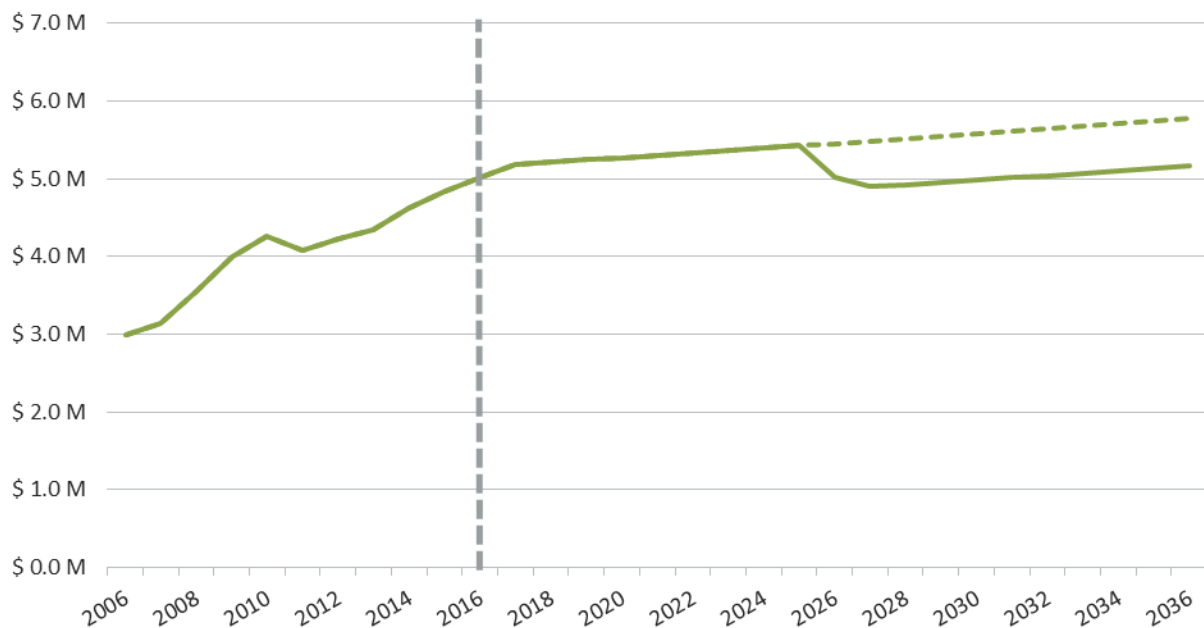
To account for both of these forces, this analysis uses recent trends in centerline miles of roads as they relate to population in the unincorporated county. As UGAs or portions of UGAs are annexed, miles are subtracted from the unincorporated total in approximate proportion to the unincorporated acres being annexed. All lane miles for the Silverdale UGA are assumed lost to incorporation in 2026. Commercial areas of the remaining UGAs are assumed lost to annexation incrementally between 2016 and 2026.

MVF tax revenues *per mile of road* are assumed to remain flat over the study period. The nine-year historical average MVF tax revenue per lane mile is about \$5,500. To be conservative, this analysis assumes no growth in fuel tax revenues per road mile over the planning period, resulting in decreasing purchasing power over time.

Kitsap County has historically put all of its MVF tax revenues into its capital road fund, and this analysis assumes that trend will continue.

Exhibit 3-1 shows historical motor vehicle fuel tax revenues to the left of the gray dotted line (2016) and projected future revenues to the right. The significant revenue drop in 2026 is due to the assumed incorporation of the Silverdale UGA, which would reduce the number of unincorporated lane miles in the county. Beyond 2026, revenues are estimated to increase moderately as lane miles in unincorporated areas increase with population growth. The dotted line represents estimated future revenues if Silverdale did not incorporate and the current boundaries stayed the same.

Exhibit 3-1. Kitsap County Motor Vehicle Fuel Tax Revenues Allocated for Capital (2006-2036 in YOES\$)



Source: Kitsap County, 2015; BERK, 2012.

Exhibit 3-2 shows estimated MVF tax revenues available for capital for two subtotal time periods as well as for the entire 2016-2036 planning period.

Exhibit 3-2. Projected Kitsap County Motor Vehicle Fuel Tax Revenues Allocated to Capital (2016 – 2036 in YOES\$)

Motor Vehicle Fuel Tax Revenues	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$31,580,000	\$71,510,000	\$103,090,000

Source: Kitsap County, 2015; BERK, 2015.

Transportation Impact Fees

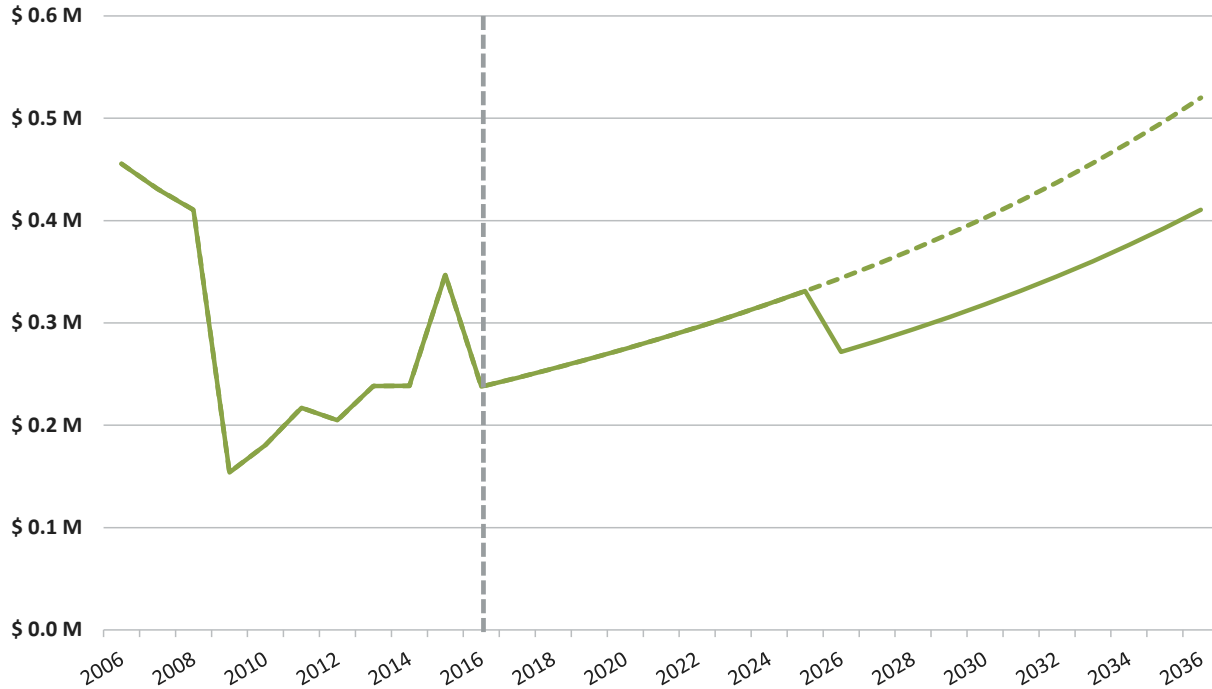
Road impact fees are a financing tool that requires new development to pay a portion of costs associated with infrastructure improvements that are “reasonably” related to the new development. The Growth Management Act (GMA) allows agencies to develop and implement a transportation impact fee program to help fund some of the costs of transportation facilities needed to accommodate growth. The use of impact fees is somewhat limited, in that the revenues must be spent on projects related to improvements that serve new development, rather than on existing deficiencies. Impact fees are assessed proportionally to the impacts of new developments, and must be spent on facilities that are identified in the County’s adopted CFP. Impact fee revenues must also be spent on allowable projects within six years of being collected, per Kitsap County Code 4.110.070; however State law now allows up to 10 years (RCW 82.02.080).

Kitsap County charges transportation impact fees according to an adopted rate structure authorized by Kitsap County Code 4.110.200. The County has four geographically defined road service areas to organize impact fees on a regional basis and, if necessary, charge differential rates. Currently the rates are the same in all service areas. There is an additional countywide service area that receives revenues from each of the four geographic areas.

Assumptions. Since impact fees are related to new development, this analysis projects future revenues based on expected rates of new construction in unincorporated Kitsap County. Historical revenues and construction levels were analyzed to understand the relationship between impact fees and new construction, and this relationship was used to project revenues going forward. Over the last six years (2010-2015) the County has received over \$2.00 in road impact fees for every \$1,000 of new construction assessed value (AV). To estimate these revenues going forward, for every \$1,000 of new construction AV, it is assumed the County will receive \$2.00 in road impact fees. Therefore, road impact fee revenues are assumed to grow proportionally to new construction AV. This analysis does not assume any future rate adjustments, although rates are likely to be reviewed and perhaps adjusted by the County every few years based on future project needs.

Exhibit 3-3 shows historical and estimated future transportation impact fee revenues in Kitsap County. The revenue drop in 2026 is due to the assumed incorporation of the Silverdale UGA, since impact fee revenues from new development in Silverdale would stop accruing to the County. The dotted line represents estimated future revenues if Silverdale did not incorporate and the current boundaries stayed the same.

Exhibit 3-3. Kitsap County Transportation Impact Fees (2006 – 2036 in YOES)



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-4 summarizes estimated future revenues for two subtotal time periods as well as for the entire 2016-2036 planning horizon.

Exhibit 3-4. Projected Transportation Impact Fee Revenues (2016 – 2036 in YOES)

Transportation Impact Fees	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$1,630,000	\$4,650,000	\$6,280,000

Source: Kitsap County, 2015; BERK, 2015.

State Transportation Grants

Grants are an important funding source for transportation capital projects; however, because these funds are distributed in a competitive process, it is difficult to determine future grant funding levels. State grants are primarily funded with the state-levied portion of the MVF tax.

As mentioned in the MVF tax section, in past years there were increases in the State MVF tax rate. Many of these additional funds were earmarked for specific large projects, although there was some allocation to local jurisdictions. The Transportation Partnership Act of 2005 provided some additional funds to the Transportation Improvement Board and the County Road Administration Board, for a total of \$80 million to be disbursed to local jurisdictions as grants over a six-year period. However, these increases in funds were very small relative to demand, with requests to the Transportation Improvement Board exceeding available funds by 800%.

In 2015, a statewide transportation package was passed, including a phased increase in the state gas tax from 23 cents to 34.9 cents per gallon by 2016. This increase in the MVF tax will provide funding opportunities for local roads and transportation projects.

Recent trends in grant revenue were considered in this analysis. However, the slowing of MVF tax revenue has shifted the grant-funding climate, and future revenues are estimated to be lower than recent trends. This is partly due to other financial forces.

One of those forces is I-747. Because jurisdictions within the State have had their property tax capped at 1.0%, a rate lower than inflation (approximately 3.0%), inflation-adjusted revenues are declining each year. This impacts transportation spending in two ways. First, property tax funds that are collected for transportation spending (County Road Levies) are able to purchase less each year. Second, non-restricted property tax funds are also declining. Cities and counties must often pull from non-restricted funds that were going towards capital projects and put them towards other immediate needs. This creates a second tightening of funds available for capital.

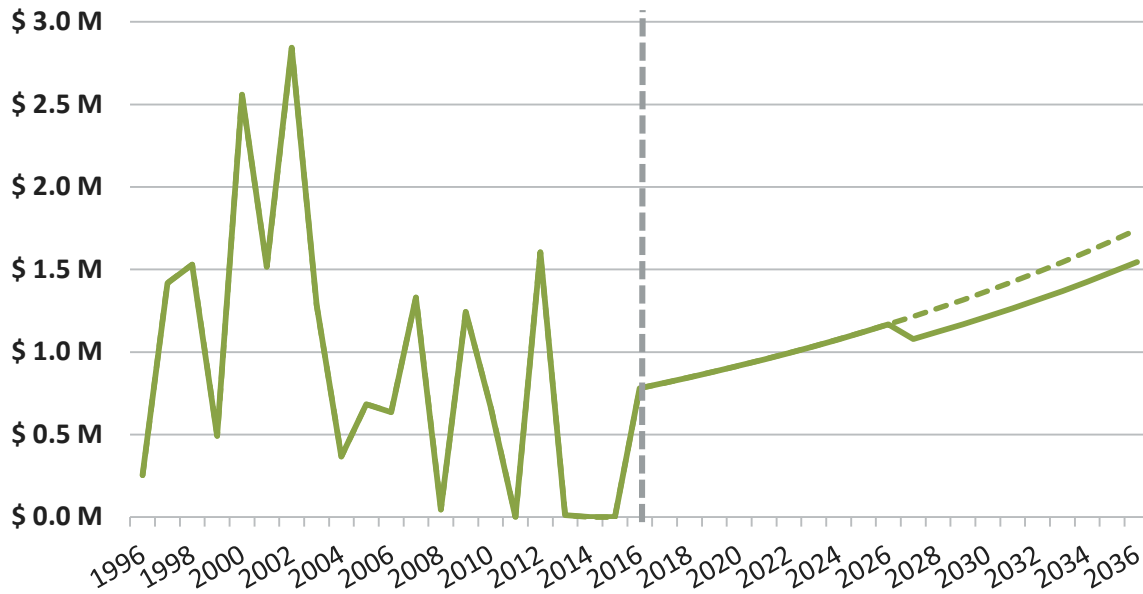
Because jurisdictions are feeling the squeeze these forces are putting on their capital funding programs, they are competing for, and relying more heavily on, grants. As more jurisdictions compete, securing grant funding becomes more difficult.

Assumptions: Grant revenues are estimated on a per capita basis on the assumption that over time a jurisdiction will generally receive its “fair share” of available grant revenues. Since 1988 Kitsap County has averaged \$4.55 per capita in state grant revenues per year. In the past decade, the County has received about \$3.33 per capita in state grant revenues. Given the forces discussed previously, this analysis assumes \$4.50 per capita in the future with 3% annual increases. Total revenues will therefore change on pace with changes in the county’s unincorporated population.

Exhibit 3-5 shows historical state grant revenues to the left of the gray dotted line (2016), and projected revenues to the right. An average annual dollar amount is assumed in each year for this analysis. However, in reality these dollars will vary greatly from year-to-year and will likely resemble the trend of peaks and valleys shown in historical data. While using an annual average does not fully represent the County’s future cash flow of grant dollars, it approximates how many total dollars will be received over the study period.

The revenue drop in 2026 is due to the assumed incorporation of the Silverdale UGA, which would reduce population in unincorporated county. Since this model assumes that grant revenue amounts are proportionate to the population, the grant revenues drop when the population drops. The dotted line represents estimated future revenues if Silverdale did not incorporate and the current boundaries stayed the same.

Exhibit 3-5. Kitsap County State Transportation Grant Revenues Allocated for Capital Projects (1995– 2036 in YOES)



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-6 shows estimated total state grant revenues for two subtotal time periods as well as for the entire 2016-2036 planning horizon.

Exhibit 3-6. Projected State Transportation Grant Revenues for Capital Projects (2016 – 2036 in YOES)

State Transportation Grants	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$5,200,000	\$18,400,000	\$23,600,000

Source: Kitsap County, 2015; BERK, 2015.

Federal Transportation Grants

Federal transportation grants are funded through the federal portion of the fuel excise tax. The federal gas tax rate has fluctuated between \$0.183 and \$0.184 per gallon since 1994. The majority of these funds are deposited into the Highway Trust Fund and disbursed to the states through the Highway and Mass Transit Accounts. As with state grants, these funds are distributed in a competitive process, making it difficult to determine future grant funding levels.

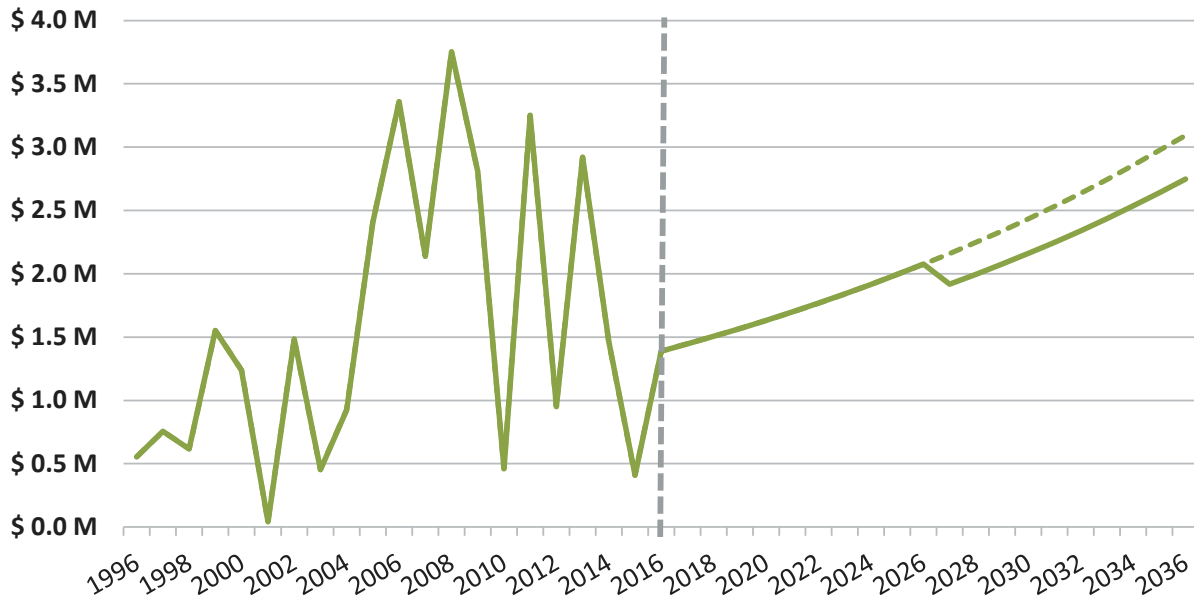
Assumptions: Because of the increased competition for grant dollars and decrease in available grant funds, grant revenues have been estimated at lower levels than recent rates. Since 1988, Kitsap County has received an annual average of \$7.34 per capita of federal grant funding, and over the last decade the County has received an annual average of \$12.78 per capita. The average has been slightly higher in recent years, so this analysis estimates future average annual per capita federal grant dollars at \$8.00 per capita, with a 3% annual increase. As with state grant dollars, changes in total revenues are expected to occur at the rate of change in the population.

Exhibit 3-7 shows historical federal grant revenues to the left of the gray dotted line (2016), and projected revenues to the right. An average annual dollar amount is assumed in each year for this analysis. However, in reality these dollars will vary greatly from year to year and will likely resemble the trend of peaks and valleys shown in historical data. While using an annual average

does not fully represent the County’s future cash flow of grant dollars, it approximates how many total dollars will be received over the study period.

The revenue drop in 2026 is due to the assumed incorporation of the Silverdale UGA, which would reduce population in unincorporated county. Since this model assumes that grant revenue amounts are proportionate to the population, the grant revenues drop when the population drops. The dotted line represents estimated future revenues if Silverdale did not incorporate and the current boundaries stayed the same.

Exhibit 3-7. Kitsap County Federal Transportation Grant Revenues Allocated for Capital Projects (1995 – 2036 in YOES)



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-8 shows estimated total federal grant revenues in two subtotal periods as well as for the entire 2016-2036 planning period.

Exhibit 3-8. Projected Federal Transportation Grant Revenues for Capital Projects (2016 – 2036 in YOES)

Federal Transportation Grants	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$9,240,000	\$32,700,000	\$41,940,000

Source: Kitsap County, 2015; BERK, 2015.

Total Estimated Transportation Revenues

Exhibit 3-9 shows total projected dedicated transportation revenues for Kitsap County for the planning period and two interim subtotal periods. The County currently has a 2015 fund balance of about \$20.7 million in the County road construction fund. These dollars are available for spending on transportation capital projects over the planning period, which is reflected in the final column of Exhibit 3-9. It is important to note that these totals include impact fee revenues, which have limitations described in the Transportation Impact Fees section above, including that they are limited to spending on projects that serve new development and must be spent within six years of collection.

Exhibit 3-9. Projected Total Transportation Revenues Allocation for Capital (2016 – 2036 in YOES)

Total Transportation	Subtotal 2016-2021	Subtotal 2022-2036	Revenue Total 2016-2036	Total with 2015 Fund Balances
Estimated Revenues	\$47,280,000	\$132,790,000	\$180,070,000	\$ 200,781,130

Source: Kitsap County, 2015; BERK, 2015.

Parks

Parks Impact Fees

Similar to the transportation impact fees described above, a County can impose impact fees on new residential developments to help fund capital parks projects to serve new development. Impact fees can be used to pay the proportional share that each development benefits from public facilities, but cannot be used to correct existing deficiencies. Parks impact fees may only be charged on developments in unincorporated areas of the county.

Impact fees can be used on development, site acquisition, or debt service for projects that serve a new development. Kitsap County currently imposes impact fees at the rates authorized in Kitsap County Code 4.110.210.

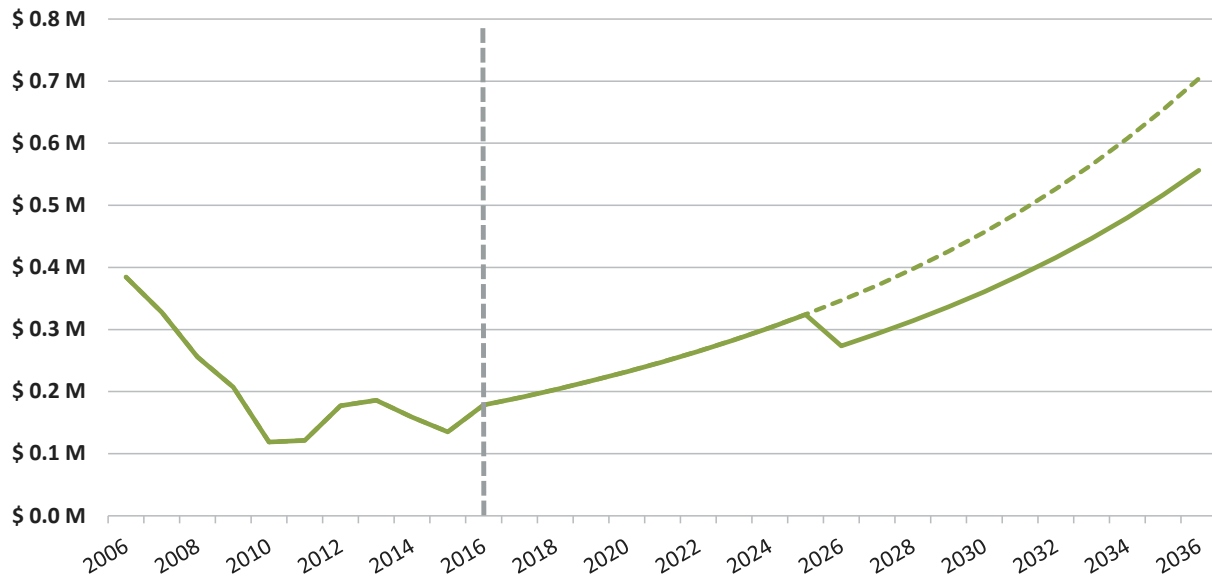
Assumptions. Since impact fees are related to new residential development, this analysis projects future revenues based on expected rates of new residential construction in the unincorporated area of the county. Historical revenues and construction levels were analyzed to understand the relationship between impact fees and new construction, and this relationship was used to project revenues going forward.

Over the last ten years (2006-2015) the County has received about \$1.50 in parks impact fees for every \$1,000 of new construction Assessed Value (AV) from unincorporated areas. To estimate these revenues going forward, this analysis holds a constant relationship of \$1.50 per \$1,000 new construction AV, with 3% annual increases. Total revenues will therefore change on pace with changes in the County’s unincorporated population. As with transportation impact fees, this analysis does not assume any future rate adjustments, although rates are likely to be reviewed, and perhaps adjusted, by the County every few years based on future project needs.

Exhibit 3-10 shows historical park impact fee revenues to the left of the gray dotted line and estimated future revenues to the right.

The revenue drop in 2026 is due to the assumed incorporation of the Silverdale UGA, since impact fee revenues from new development in Silverdale would stop accruing to the County. The dotted line represents estimated future revenues if Silverdale did not incorporate and the current boundaries stayed the same.

Exhibit 3-10. Kitsap County Park Impact Fees (2006 – 2036 YOES)



Source: Kitsap County, 2015; BERK, 2015; Kitsap County Assessor, 2015.

Exhibit 3-11 shows future estimated park impact fee revenues for two subtotal time periods as well as for the entire 2016-2036 planning timeframe. Currently, the County is using park impact fee revenues to pay the debt service for capital bonds. Transfers from Conservation Futures Tax revenues also fund debt service. In total, about \$3.4 million of future park revenues is slated to go toward debt service payments that won't be retired until 2032. The remaining amount is available for future parks capital projects.

Exhibit 3-11. Kitsap County Park Impact Fee Revenues (2016 – 2036 YOES)

Parks Impact Fees	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$1,270,000	\$5,560,000	\$6,830,000
Amount Committed to Debt Service	\$1,263,270	\$2,098,000	\$3,361,270
Available Revenues	\$6,730	\$3,462,000	\$3,468,730

Source: Kitsap County, 2015; BERK, 2015.

Conservation Futures Tax

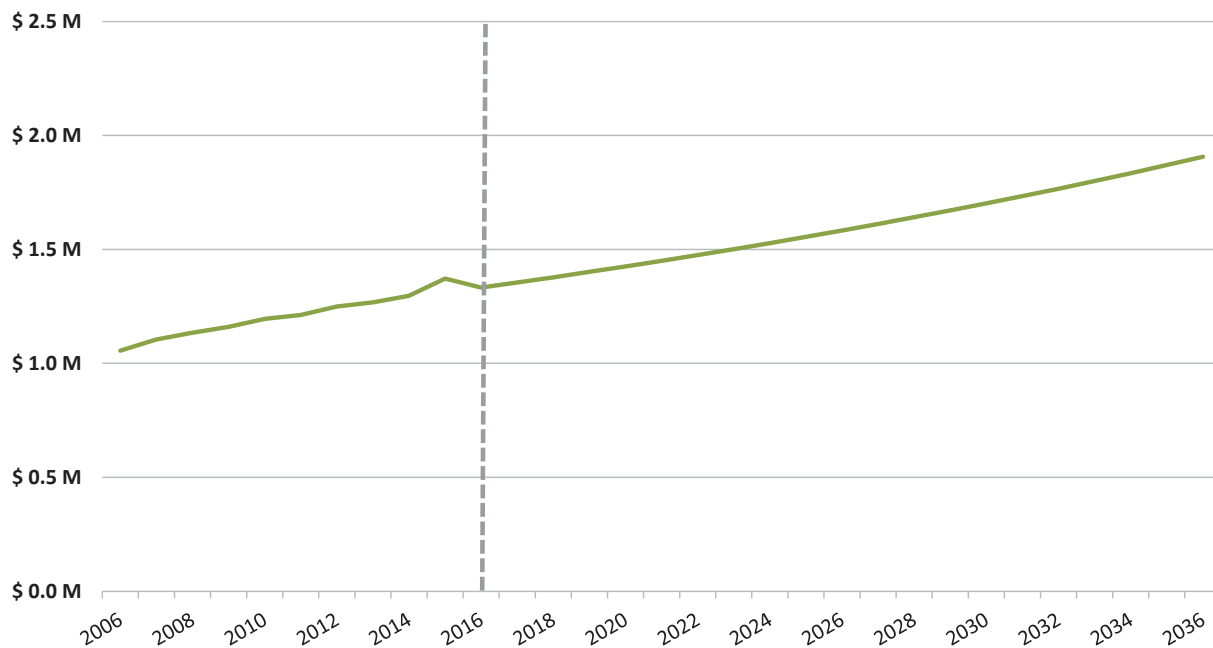
The Conservation Futures Tax is a property tax assessed on all taxable property in Kitsap County, in both incorporated and unincorporated areas. According to state laws (RCWs 84.34.210 and 84.34.220) revenues from this tax may be used for acquisition of open space land, farm and agricultural land, and timber land. This tax has become an important piece of Kitsap County's parks funding as it has remained fairly stable even as impact fee revenues have declined. However, much of this revenue is currently dedicated to paying off bonds that won't be retired until 2024.

As mentioned above, property tax revenues were significantly impacted by the passage of Initiative 747 in 2001, which limits property tax collections increases to 1.0% of the previous year's revenues plus new construction. In inflation-adjusted terms, revenues from property tax are actually declining, since the 1.0% allowable increase does not keep pace with inflation (which has averaged about 3.0% in the recent past) or with population growth.

Assumptions. This analysis assumes assessed values will increase at 2.0% annually, which is in line with historical averages. The current levy rate for the conservation futures tax is \$0.048 per \$1,000 of assessed value countywide (Kitsap County Statement of Assessments, 2015). Because assessed value increases each year faster than 1.0%, while levy revenues are only allowed to increase at 1.0% plus new construction, the levy rate declines each year. Kitsap County is currently collecting the maximum revenue each year at its current rate, including the 1% growth. The only way it could receive additional revenues beyond what is projected below is to pass a voter-approved levy increase.

Exhibit 3-12 shows historical conservation futures tax revenues to the left of the dotted line and estimated future revenues to the right.

Exhibit 3-12. Kitsap County Conservation Future Tax Revenues (2006 -2036 YOE\$)



Source: Kitsap County, 2015; BERK, 2012.

Exhibit 3-13 shows estimated future revenues for the conservation futures tax for two subtotal time periods as well as the entire 2016-2036 planning timeframe. The County is currently using these revenues to pay debt service for capital bonds. In total, about \$7.3 million of projected conservation futures revenues is slated to go toward debt service payments through 2024. The remaining amount is available for future parks capital projects.

**Exhibit 3-13. Projected Kitsap County Conservation Futures Tax Revenues
(2016 – 2036 in YOES)**

Conservation Futures Tax	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$8,350,000	\$25,190,000	\$33,540,000
Amount Committed to Debt Service	\$5,187,979	\$2,097,469	\$7,285,448
Available Revenues	\$3,162,021	\$23,092,531	\$26,254,552

Source: Kitsap County, 2015; BERK, 2015.

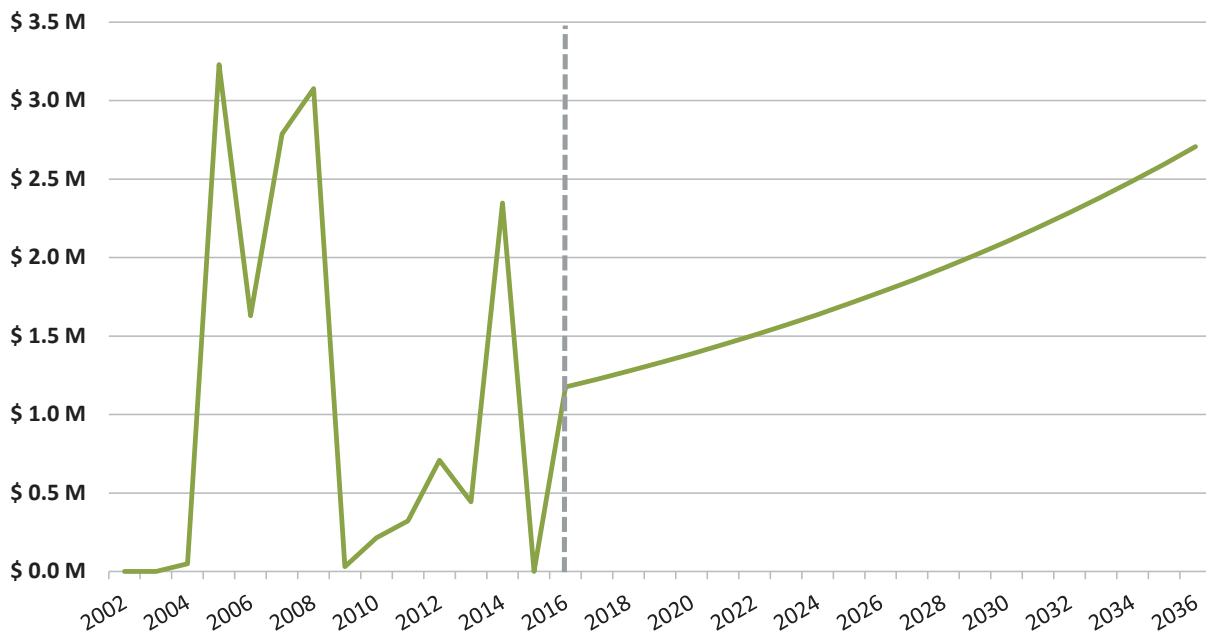
Grants and Donations

Additional revenues for parks capital projects and acquisitions generally comes from state grants, federal grants, and donations. State grants, which usually come from the Washington State Recreation and Conservation Office, make up the largest of these three sources.

Assumptions. Because competition for grants is on a state or national level, this analysis estimates these revenues on a per capita basis on the assumption that over time a jurisdiction will generally receive its “fair share” of available grant revenues. Between 2002 and 2014, the County received about \$4.63 per capita in combined state and federal grant and donation revenues; this analysis estimates future average annual grants at \$4.50 per capita, with 3% annual increases.

Exhibit 3-14 shows historical revenues to the left of the dotted line and estimated future revenues to the right. An average annual dollar amount is assumed in each year for this analysis. However, in reality these dollars will vary greatly from year to year and will likely resemble the trend of peaks and valleys shown in historical data. While using an annual average does not fully represent the County’s future cash flow of grant dollars, it approximates how many total dollars will be received over the study period.

Exhibit 3-14. Kitsap County Parks Grants and Donations Revenues (2002 – 2036 in YOES)



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-15 summarizes the County’s projected parks grant and donation revenues in two subtotal time periods as well as for the entire 2016-2036 planning horizon.

Exhibit 3-15. Projected Kitsap County Parks Grants and Donations Revenues (2016 – 2036 in YOES)

Parks Grants and Donations	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$8,170,000	\$29,250,000	\$37,420,000

Source: Kitsap County, 2015; BERK, 2015.

Total Estimated Parks Revenues

Exhibit 3-16 shows total projected parks capital revenues for the planning period, including revenues from impact fees, conservation futures tax, grants, and donations. The County currently has a fund balance of about \$4.1 million in its two primary parks capital funds. These dollars, along with future revenues, are available for spending on parks capital projects over the planning period, resulting in an estimated \$67.2 million (shown in the final column of Exhibit 3-16).

**Exhibit 3-16. Projected Total Kitsap County Revenues Dedicated to Parks Capital Projects
(2016 – 2036 in YOES)**

Total Parks	Subtotal 2016-2021	Subtotal 2022-2036	Revenue Total 2016-2036	Total with 2015 Fund Balances
Estimated Revenues	\$17,450,000	\$61,490,000	\$78,940,000	\$79,091,987
Amount Committed to Debt Service	\$7,698,491	\$4,195,469	\$11,893,960	\$11,893,960
Available Revenues	\$9,751,509	\$57,294,531	\$67,046,040	\$67,198,027

Source: Kitsap County, 2015; BERK, 2015.

Sewer

State Grants

Kitsap County receives grants from the state to help fund sewer capital projects. These grants are project-specific and therefore do not occur on a regular basis. In the timeframe for which historical revenues were available for this analysis, 2006-2015, the County received capital sewer grants in three of the ten years. These grants varied in amount from less than \$0.2 million to over \$1 million. In 2015, the County was awarded a grant for \$4.6 million, with funds to be distributed in 2016. The grant is for the Yukon Harbor project, which will provide sewer service along Colchester Drive in Manchester to 121 homes that are currently on septic systems (Kitsap County, 2015; BHC Consultants, 2015).

Assumptions. Based on discussions with Kitsap County, recent grant revenues have been higher than historical averages, and higher than the County expects to receive going forward. The County has indicated that the most conservative estimate for projecting revenues over the next 20-years would be to account for no additional grant revenues. (Brown, 2015)

Sewer Hook-up Fees

Sewer hook-up fees (also known as newcomer’s fees) are charged when a property owner wants to connect a property to an existing county sewage system. The logic behind the newcomer’s fee is that it represents the new connection’s proportionate share of future expansion of the major components of the existing sewage system. The amount of the fee varies based on the type of property and/or the number of dwelling units.

Hook-up fees for the majority of Kitsap County sewer service area residents are deposited into the non-capital Sewer Improvement Fund and only transferred for capital use when needed. According to County staff, there have been no transfers from the Improvement Fund to the Construction Fund since 2009, as a result of bonds sold in 2010 and 2015. Although there is currently \$5.5 million in the Improvement Fund that will be transferred to the Construction Fund

at some point, this analysis does not assume any transfers will occur since a policy does not exist. (Brown, 2015)

The only hook-up fees that are automatically allocated to capital are from newcomers in the City of Poulsbo; this revenue is deposited in the County’s sewer capital fund. Because of this, historical Poulsbo sewer fees are used as a basis for analysis of future capital revenue. (Brown, 2015)

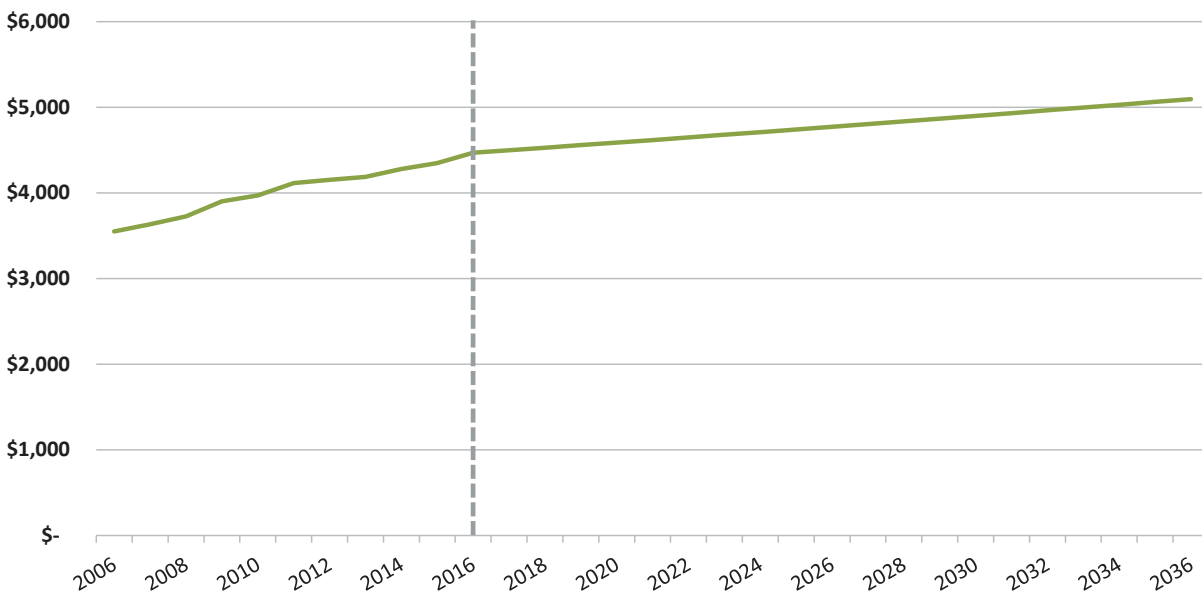
It is important to note that hook-up fees from the City of Poulsbo may only be used on projects that benefit sewer customers within the City of Poulsbo. Any sewer projects that do not benefit Poulsbo residents would need to be funded through transfers from non-dedicated capital funds.

Assumptions. Hook-up fees are generated by new sewer connections, which vary by the type of new development, as well as when existing properties require a new connection to the sewer system. Making assumptions about the rate of existing properties connecting to the sewer system is difficult. This analysis instead focuses on how new development relates to hook-up fees, since new developments represent the majority share of hook-up fees paid.

This analysis bases expected future revenues on the relationship between new housing development in the City of Poulsbo, as a proxy for total development activity, and the level of hook-up fees. Over the last ten years (2006-2015), the County has received around \$4,400 in hook-up fees per new housing unit within the city. This analysis conservatively assumes that around \$3,500 per new housing unit will be received in the future, and hook-up fees will grow in relation to housing growth in the City of Poulsbo.

Exhibit 3-17 shows historical hook-up fee revenues allocated for capital to the left of the dotted line and estimated future revenues to the right. This analysis estimates future revenues using an assumption of linear growth in households between 2016 and 2036. However, actual revenues in any given year may vary based on the type and amount of construction completed in that particular year and will likely exhibit peaks and valleys. Exhibit 3-17 estimates the annual average over the entire planning period.

**Exhibit 3-17. Kitsap County Sewer Hook-up Fees Allocated for Capital
(2006 – 2036 in YOES)**



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-18 summarizes total future estimated sewer hook-up fee revenues from the City of Poulsbo for the 2016-2036 planning period, and shows two subtotal periods.

Exhibit 3-18. Projected Sewer Hook-Up Fee Revenues Allocated for Capital (2016 – 2036 in YOES)

Sewer Fees	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$680,000	\$2,490,000	\$3,170,000

Source: Kitsap County, 2015; BERK, 2015.

Total Estimated Sewer Revenues

Utility funds operate as enterprises within the County structure, functioning much like private business entities. The Sewer Capital Fund relies primarily on rates to fund its capital program; the County periodically conducts comprehensive cost-of-service evaluation of its utilities to determine whether any adjustments to current rates are needed to ensure each customer pays their equitable share of sewer system costs. The results of this study are reflected in the customer utility rates. Additionally, the Sewer Capital Fund typically receives transfers from the Sewer Operating and Maintenance Fund, as well as developer contributions.

Exhibit 3-19 shows total estimated revenues available for sewer capital projects over the planning period, including both sewer hook-up fees and state grants. Additionally, the County currently has a fund balance in its sewer capital fund. These dollars are also available to cover planned sewer projects during the 2016-2036 time period.

Exhibit 3-19. Total Projected Sewer Revenues Allocated for Capital (2016 – 2036 in YOES)

Total Sewer	Subtotal 2016-2021	Subtotal 2022-2036	Revenue Total 2016-2036	Total with 2015 Fund Balances
Estimated Revenues	\$5,240,000	\$2,490,000	\$7,730,000	\$ — 26,535,757

Source: Kitsap County, 2015; BERK, 2015.

Stormwater Management

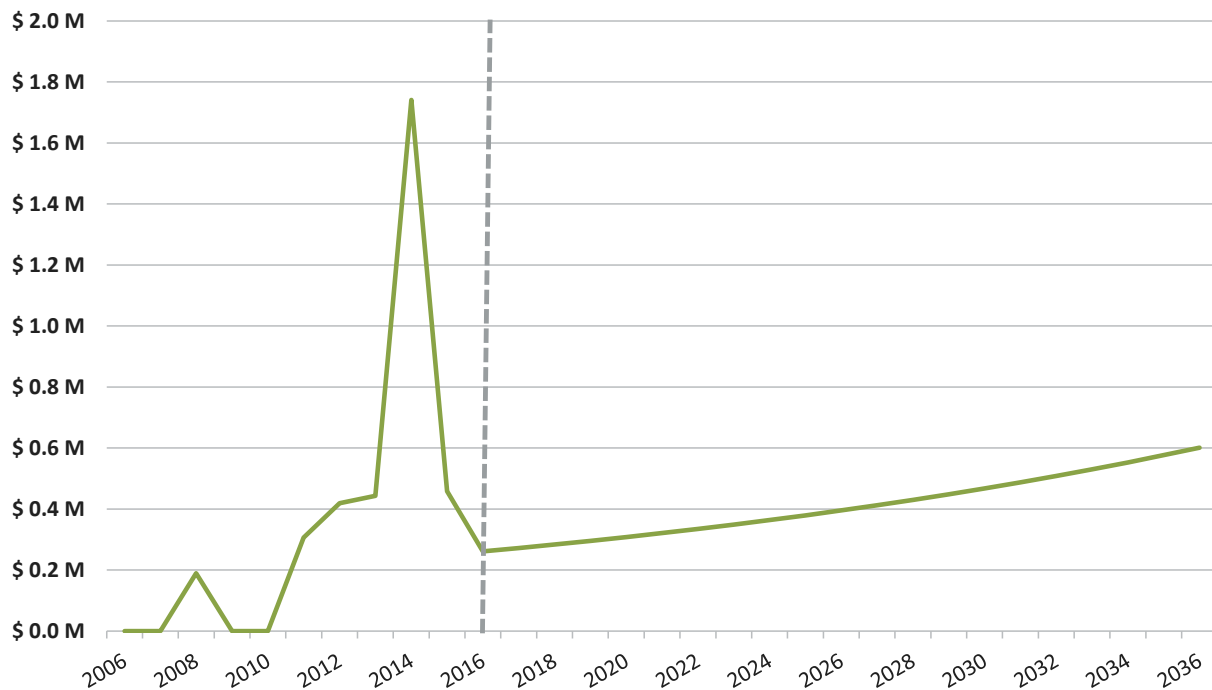
State and Federal Grants

The County receives state and federal grants to support specific Stormwater Management (Stormwater) capital projects. From the historical data available for this analysis, the County received grant funds in five of the past ten years.

Assumptions. Over the last ten years (2006 – 2015), annual per capita grant revenues for surface and stormwater management have been about \$1.39 per capita. As a conservative assumption, expected revenues for Stormwater grants are estimated at \$1.00 per capita annually, growing at an estimated future inflation rate of 3.0%.

Exhibit 3-20 shows historical Stormwater grants to the left of the dotted line and estimated future revenues to the right. An average annual dollar amount is assumed in each year for this analysis. However, in reality these dollars will vary greatly from year to year and will likely resemble the trend of peaks and valleys shown in historical data. While using an annual average does not fully represent the County’s future cash flow of grant dollars, it approximates how many total dollars will be received over the study period.

Exhibit 3-20. Kitsap County Surface and Stormwater Management Grant Revenues (2006 – 2036 in YOES\$)



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-21 summarizes projected revenues for the planning period as well as two subtotal time periods.

Exhibit 3-21. Projected Surface and Stormwater Management Grant Revenues (2016 – 2036 in YOES\$)

Stormwater Grants	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$1,750,000	\$6,840,000	\$8,590,000

Source: Kitsap County, 2015; BERK, 2015.

Surface and Stormwater Management Fees

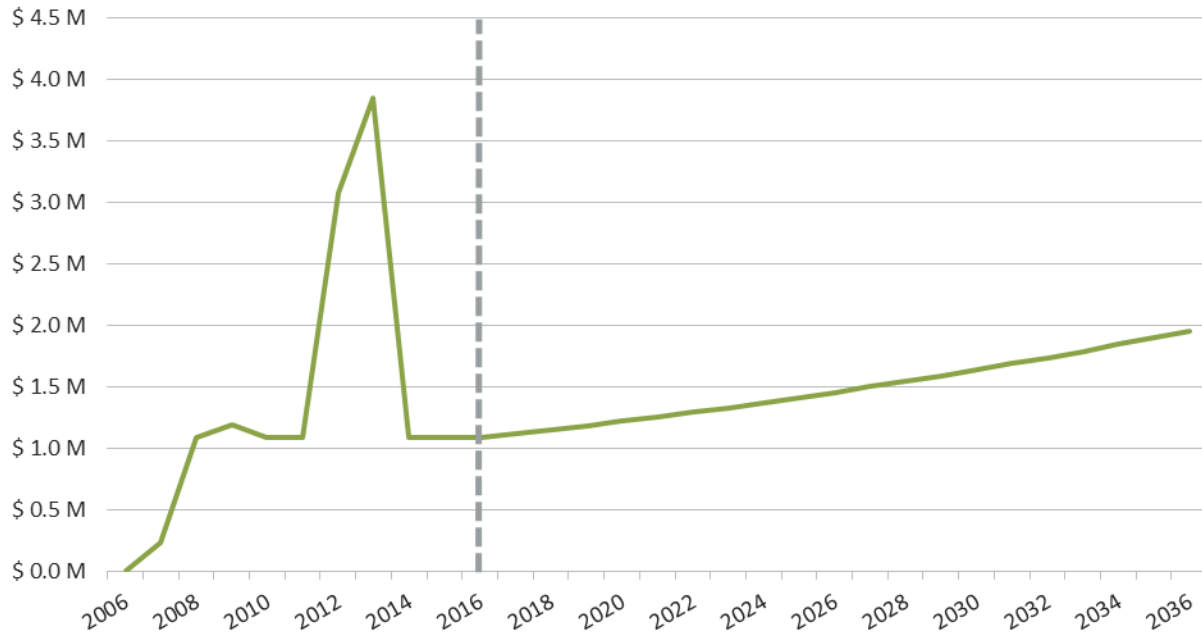
The County charges Stormwater fees to those served by or receiving benefits from County drainage facilities or contributing to surface water runoff within the County. Rates are based on the current use of a property (such as residential, commercial, or roadway) as well as the size of the establishment in terms of square footage, number of dwelling units, or impervious surface area.

Stormwater fee revenues can be used for both operations and maintenance of Stormwater facilities as well as Stormwater capital projects. The amount of fee revenue that goes into the Stormwater capital funds is based on County policy.

Assumptions. Based on conversations with staff, the County currently allocates about \$1.1 million per year of its Stormwater rate revenues into its Stormwater capital funds: \$850,000 into the Stormwater Program Capital Fund and \$230,000 into the Stormwater Asset Replacement Fund. This analysis assumes that this level of fee contribution to capital projects will continue and will increase at about 3.0% annually due to inflation and rate increases.

Exhibit 3-22 shows historical revenues allocated for capital to the left of the dotted line and estimated future revenues to the right. The County began transferring \$230,000 per year into the Stormwater Asset Replacement Fund beginning in 2007 and added \$850,000 per year to the Stormwater Program Capital Fund beginning in 2008.

Exhibit 3-22. Kitsap County Surface and Stormwater Management Fee Revenues Allocated to Capital (2006 – 2036 in YOES)



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-23 summarizes total estimated fee revenues allocated for capital for 2016 - 2036 as well as two interim summary time periods.

Exhibit 3-23. Projected Kitsap County Surface and Stormwater Management Fee Revenues Allocated to Capital (2016 – 2036 in YOES)

Stormwater Fees	Subtotal 2016-2021	Subtotal 2022-2036	Total 2016-2036
Estimated Revenues	\$7,010,000	\$24,060,000	\$31,070,000

Source: Kitsap County, 2015; BERK, 2015.

Total Estimated Surface and Stormwater Management Revenues

Utility funds operate as enterprises within the County structure, functioning much like private business entities. The Surface and Stormwater Capital Fund relies primarily on rates to fund its capital program; the County periodically conducts comprehensive cost-of-service evaluation of its utilities to determine whether any adjustments to current rates are needed to ensure each customer pays their equitable share of surface and stormwater system costs. The results of this study are reflected in the customer utility rates. Additionally, the Sewer Capital Fund typically receives transfers from the Sewer and Stormwater Operating and Maintenance Fund, as well as developer contributions.

Exhibit 3-24 shows total projected Stormwater capital revenues for the planning period, including state and federal grants and management fees. The County currently has a starting fund balance

of about \$2.6 million between its two primary Stormwater capital funds. These funds are available for capital projects over the planning period, as reflected in Exhibit 3-24.

Exhibit 3-24. Projected Total Kitsap County Revenues Allocated to Stormwater Capital Projects (2016 – 2036 in YOES)

Total Stormwater Management	Subtotal 2016-2021	Subtotal 2022-2036	Revenue Total 2016-2036	Total with 2015 Fund Balances
Estimated Revenues	\$8,750,000	\$30,890,000	\$39,640,000	\$ 42,280,020

Source: Kitsap County, 2015; BERK, 2015.

3.4 General Capital Revenues

Real Estate Excise Tax

Real Estate Excise Tax (REET) revenues are collected upon the sale of real property and must be expended on capital projects. Since REET is based on the total value of real estate transactions in a given year, the amount of REET revenues a county receives can vary substantially from year to year based on fluctuations in the real estate market. During years when the real estate market is active, revenues are high, and during softer real estate markets, revenues are lower.

Counties have the ability to impose up to two REET levies, REET I (the first 0.25%), and REET II (the second 0.25%), for a total tax of 0.5% of total assessed value. REET I and REET II revenues must be spent on capital projects that are listed in a county’s current capital facilities plan. The definition of capital facilities, according to RCW 82.46.010 is:

those public works projects of a local government for planning, acquisition, construction, reconstruction, repair, replacement, rehabilitation, or improvement of streets; roads; highways; sidewalks; street and road lighting systems; traffic signals; bridges; domestic water systems; storm and sanitary sewer systems; parks; recreational facilities; law enforcement facilities; fire protection facilities; trails; libraries; administrative and judicial facilities...

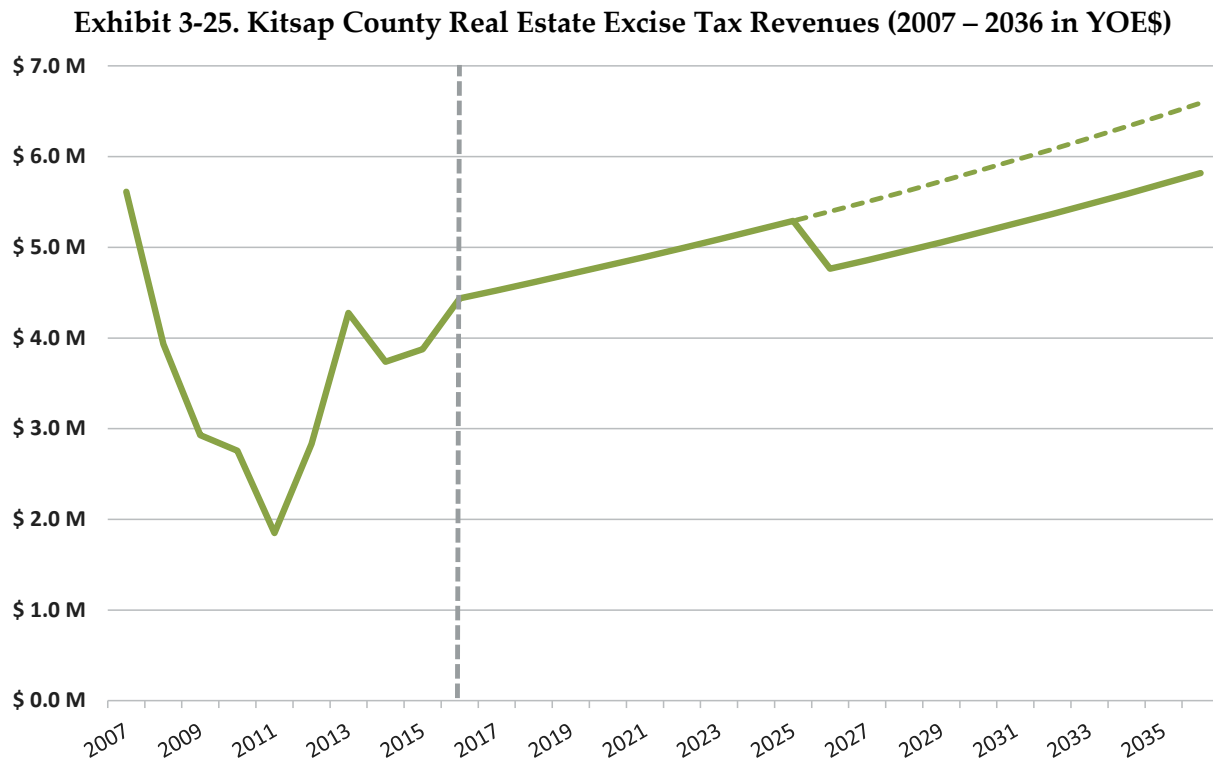
In addition to the above guidelines, REET II is further restricted, as it may not be spent on recreational facilities, law enforcement facilities, fire protection facilities, trails, libraries, or administrative or judicial facilities. (RCW 82.46.035)

It is up to the discretion of each jurisdiction to choose how to devote REET funds within the above parameters. Kitsap County is currently spending all of its REET revenues on bond payments to which the revenues are already committed. This analysis assumed that the County would not have any significant REET funds to spend for other capital purposes until 2016.

Assumptions: Because REET dollars are directly related to the sale of real estate, this analysis assumes an annual turnover rate of 5.0% for residential properties and 3.5% for commercial properties.

Because REET revenues must be used for capital projects, this analysis assumes all REET revenues beyond those committed to existing bond payments are available for the capital projects discussed in this plan. Exhibit 3-25 shows historical REET revenue to the left of the gray dotted line, and projected revenues to the right. This analysis projects that the County will not see REET revenues similar to those collected in 2007 until around 2020.

The revenue drop in 2026 is due to the assumed incorporation of the Silverdale UGA, which would reduce total assessed value in unincorporated Kitsap County, and therefore the amount of tax collected on that value. The dotted line represents estimated future revenues if Silverdale did not incorporate and the current boundaries stayed the same.



Source: Kitsap County, 2015; BERK, 2015.

Exhibit 3-26 shows estimated total REET revenues in two subtotal time periods as well as for the entire 2016-2036 planning timeframe. The REET account currently has a total fund balance (REET I and REET II) of about \$3.2 million, which is also available for general capital spending during the planning period. Additionally, some REET revenues, especially in the six-year period, are dedicated to paying off existing debt service payments and are not available for future projects.

**Exhibit 3-26. Projected Kitsap County Real Estate Excise Tax Revenues
(2016 – 2036 in YOES)**

REET	Subtotal 2016-2021	Subtotal 2022-2036	Revenue Total 2016-2036
Estimated Revenues	\$27,980,000	\$78,570,000	\$106,550,000
Amount Committed to Debt Service	\$18,350,472	\$25,894,134	\$44,244,607
Available Revenues	\$9,629,528	\$52,675,866	\$62,305,393

Source: Kitsap, 2015; BERK, 2015.

3.5 Total Capital Revenues

Exhibit 3-27 summarizes projected total capital revenues available over the planning period, including fund balances.

**Exhibit 3-27. Projected Total Kitsap County Capital Revenues
(2016 – 2036 in YOES\$)**

Total Capital Revenues	Subtotal 2016-2021	Subtotal 2022-2036	Revenue Total 2016-2036	Total with 2015 Fund Balances
Estimated Revenues	\$106,700,000	\$306,230,000	\$412,930,000	\$459,222,859
Amount Committed to Debt Service	\$26,048,964	\$30,089,603	\$56,138,567	\$56,138,567
Available Revenues	\$80,651,036	\$276,140,397	\$356,791,433	\$403,084,292

Source: Kitsap County, 2015; BERK, 2015.

3.6 Potential Policy Options and Other Funding Sources

This section describes policy and funding options available to the County outside of the dedicated revenues listed above. The options listed are not necessarily being considered by the County today, but are included to show a range of options available to the County.

Adjusting Policies for Non-allocated Revenue Streams

The County has some revenue streams that it is not required to use on capital that are currently either (1) being used partially for capital and partially for operations or (2) not being used for capital at all. If the County experiences a shortfall in the revenues it has allocated for capital sources, which are described in the sections above, it could consider changing its policies to create additional or larger capital revenue streams. However, any increase in the portion of these revenues dedicated to capital would need to be balanced against the County’s existing operations and maintenance needs. Revenue streams the County could consider allocating to capital include:

- **Solid Waste.** In previous years, the County has regularly transferred about \$300,000 per year into the solid waste capital fund from solid waste fees. The County put this practice on hold beginning in 2010 because it had built up a solid waste fund balance to cover near-term solid waste projects. According to staff, the County anticipates having a minimum balance of between \$0.5 million and \$1.0 million in the fund at the end of 2016 (Brown, 2015). If the County chooses, it could resume operating transfers to fund additional solid waste projects as needed.
- **Stormwater Fees.** The County currently has a set practice of transferring \$850,000 of Stormwater fee revenues into the Stormwater program capital fund and \$230,000 worth of Stormwater fee revenues into the Stormwater asset replacement fund each year. The County could increase its fee revenue transfers to provide additional capital revenues.
- **County Road Levy.** The County does not currently dedicate any County road property tax levy revenues toward capital projects. However, this revenue is sometimes used to fund construction on an as-needed basis through operating transfers to the County road construction fund. The County could institute a policy of allocating a certain percent of road levy revenues to capital projects to create a more stable capital transportation revenue source.

Local/Road Improvement Districts

If the County needs additional capital funds, it could consider creating a Local Improvement District (LID) or Road Improvement District (RID). Under these programs, the County has the statutory authority to create a new taxing district. Within these districts, the County may levy an additional property tax (excess levy) to cover debt service payments on the sale of bonds purchased to finance projects within the district. Revenues may only be applied to local, clearly-defined areas in which the land owners being assessed the additional tax receive a benefit from the funded projects. LIDs may be used for water, sewer, and stormwater projects. RIDs may only be used to fund road and street improvements.

Transportation Benefit District

Counties may form transportation benefit districts (TBDs) to acquire, construct, improve, provide, or fund transportation improvements within the defined district. TBDs have a number of revenue options to raise money to fund these improvements:

- Annual vehicle fee up to \$50 (new legislative change as of July 2016). This fee does not require voter approval, although the County may place it on the ballot if it would like an advisory vote or as an actual requirement of imposition. This fee can either be assessed countywide (on both incorporated and unincorporated areas) or in a district that only includes the unincorporated areas of the county. To assess the fee within incorporated areas, there are legal requirements about the percent of cities and population that must approve the fee.
- Transportation impact fees on commercial and industrial buildings. Residential buildings are excluded. In addition, a county or city must provide a credit for a commercial or industrial transportation impact if the respective county or city has already imposed a transportation impact fee.
- Additional voter-approved revenue options. The County can, with voter approval, institute an annual vehicle license fee of up to \$100 per vehicle or a sales tax up to 0.2 percent within the TBD. The TBD sales tax can be imposed in an area that is smaller than countywide and also sunsets after 10 years unless funds are used to retire debt on bonds used to fund improvements.

Tax Increment Financing Tools

Tax increment financing (TIF) allows cities, counties, and port districts to create special districts (tax increment areas) to finance public infrastructure and help incentivize economic development and redevelopment of blighted neighborhoods. Once created, the existing tax base within the tax increment area is frozen. Property taxes continue to be paid, but taxes derived from increases in assessed values (the tax increment) resulting from new development either go into a special fund created to retire bonds issued to fund public infrastructure or to fund infrastructure on a pay-as-you-go basis.

In Washington State, the Community Revitalization Financing (CRF) program is the only current TIF program available to counties. The State also offers two additional TIF programs that include state matching funds, but are currently closed to new applicants as they are pending additional state funding.

3.7 Projected Project Funding

Six-Year Projected Funding and Cost Comparison

The purpose of this section is to compare Kitsap County’s dedicated capital facilities revenue sources with its planned project costs for the six-year planning horizon of 2016-2021 to understand the difference between near-term future dedicated capital revenues and planned future costs. In Kitsap County, future capital costs are generally larger than future dedicated capital revenues. This trend is seen in most counties and cities throughout Washington State, given the structural and legal limitations on capital funding sources.

Understanding the magnitude of this difference can help the County plan for ways to fill in the gap through other funding methods, such as operating transfers or bonds.

Estimated Project Costs

The capital project costs shown in Exhibit 3-28 are taken from each county service provider’s individual capital facilities plan for the six-year planning period (2016-2021) and estimated costs for the six-year period (2016-2021). Costs were adjusted from current year dollars to Year of Expenditure dollars (YOE\$) using an assumed annual inflation rate of 3.0% to align with the revenue projections presented above.

Exhibit 3-28. Estimated Capital Project Costs by Category (2016 – 2021 in YOE\$)

Project Costs	Subtotal 2016-2021
Parks	\$11,392,298
Sewer	\$79,230,041
Solid Waste	\$5,756,438
Stormwater	\$16,993,516
Transportation	\$83,108,907
Total	\$196,481,199

Note: Year-by-year sewer costs for 2016 – 2026 were estimated from the 1-3 year and 4 – 6 year periods in the project list in Exhibit 4-107. The year-by-year cost estimates were then escalated for inflation and rolled back up to the 6-year project period.

Source: Kitsap County, 2015; BERK, 2015; BHC Consultants, 2015.

Six-Year Capital Cost and Revenue Comparison by Facility Type

Exhibit 3-29 through Exhibit 3-34 show how planned project costs compare to dedicated capital revenue sources for the six-year planning period (2016-2021). The revenues and costs are both presented in year of expenditure dollars (YOE\$).

These exhibits identify the difference between planned costs and projected dedicated revenues in the near-term, including existing fund balances in capital project funds. It is important to note that for all of the departments and service providers identified, their six-year capital plans have been balanced using non-dedicated revenue sources or bonds. These mechanisms are summarized after each exhibit.

**Exhibit 3-29. Estimated Transportation Dedicated Capital Revenues and Costs
(2016 – 2021 in YOES\$)**

Transportation	2016 - 2021
Dedicated Transportation Fund Revenues	\$47,280,000
2015 Transportation Fund Balance	\$20,711,130
TOTAL TRANSPORTATION FUNDS AVAILABLE	\$67,991,130
Capital Transportation Costs	\$83,108,907
Estimated Dedicated Funding Surplus/(Deficit)	-\$ (15,117,777)

Source: Kitsap County, 2015; BERK, 2015.

Although there is a difference between future dedicated transportation capital revenues and estimated capital costs for the planning period, the six-year adopted Transportation Improvement Program (TIP) has been balanced through the use of multiple revenue sources, including local funds, impact fees, and state and federal funds.

Exhibit 3-30. Estimated Parks and Recreation Dedicated Capital Revenues and Costs (2016 – 2021 in YOES\$)

Parks (excluding amount committed to debt service)	2016 - 2021
Dedicated Parks Fund Revenues	\$17,450,000
2015 Parks Fund Balance	\$4,095,032
TOTAL PARKS FUNDS AVAILABLE	\$21,545,032
Capital Parks Costs	\$11,392,298
Estimated Dedicated Parks Funding Surplus/(Deficit)	\$ 10,152,734

Note: There are no project costs specific to years 2022 through 2036 currently available.

Source: Kitsap County, 2015; BERK, 2015.

Although there is a difference between future capital costs and dedicated capital revenues for the planning period, the adopted Parks CIP creates a balanced plan through the use of other funding mechanisms, including partnerships and bonds. Transfers from Conservation Futures Tax revenues also fund debt service for parks.

**Exhibit 3-31. Estimated Stormwater Management Dedicated Capital Revenues and Costs
(2016 – 2021 in YOES\$)**

Surface and Stormwater Management	2016 - 2021
Dedicated Stormwater Fund Revenues	\$8,750,000
2015 Stormwater Fund Balance	\$2,640,020
TOTAL STORMWATER FUNDS AVAILABLE	\$11,390,020
Capital Stormwater Costs	\$16,993,516
Estimated Dedicated Stormwater Funding Surplus/(Deficit)	\$ (5,603,496)

Note: There are no project costs specific to years 2022 through 2036 currently available.

Source: Kitsap County, 2015; BERK, 2015; BHC Consultants

The six-year Stormwater CIP makes up for the difference between dedicated capital revenues and costs by using stormwater utility funds and targeted grant applications to augment its dedicated

revenue sources. More detail on revenue sources for planned Stormwater projects and project-specific revenue sources can be found in Section 4.7.

**Exhibit 3-32. Estimated Sewer Dedicated Capital Revenues and Costs
(2016 – 2021 in YOES\$)**

Sewer	2016 - 2021
Dedicated Sewer Fund Revenues	\$5,240,000
2015 Sewer Fund Balance	\$18,805,757
TOTAL SEWER FUNDS AVAILABLE	\$24,045,757
Capital Sewer Costs	\$79,230,041
Estimated Dedicated Sewer Funding Surplus/(Deficit)	\$— (55,184,284)

Note: Year-by-year sewer costs for 2016 – 2026 were estimated from the 1-3 year and 4 – 6 year periods in the project list in Exhibit 4-107. The year-by-year cost estimates were then escalated for inflation and rolled back up to the 6-year project period.

Source: Kitsap County, 2015; BERK, 2015; BHC Consultants, 2015; Kitsap County Sewer Revenue Bonds Presentation, 2015.

Although the difference between future dedicated capital revenues and costs is large, the County has developed a funding plan that balances its six-year sewer CIP through the planned use of revenue bonds. The sewer costs and revenues analyzed in Exhibit 3-32 include those costs and revenues under the Preferred Alternative.

**Exhibit 3-33. Estimated Solid Waste Dedicated Capital Revenues and Costs
(2016 – 2021 in YOES\$)**

Solid Waste	2016 - 2021
Dedicated Solid Waste Fund Revenues	\$0
2015 Solid Waste Fund Balance	\$750,000
UNASSIGNED SOLID WASTE FUNDS AVAILABLE	\$750,000
SOLID WASTE FUNDS AVAILABLE TO LANDFILL CLOSURE	\$11,006,712
Non-Landfill Closure Capital Solid Waste Costs	\$4,849,743
Costs related to Landfill Closures	\$906,695
Estimated Total Dedicated Solid Waste Funding Surplus/(Deficit)	\$6,000,274
Estimated Non-Assigned Dedicated Solid Waste Funding Surplus/(Deficit)	\$(4,099,743)

Note: There are no project costs specific to years 2022 through 2036 currently available. There is a \$10 million surplus for 6-year landfill closure and no surplus for 6-year capacity project capital spending.

Source: Kitsap County, 2015; BERK, 2015.

The County has balanced its six-year solid waste CIP by planning to transfer tipping fee revenues to the solid waste capital fund and its Hansville and Olalla Landfill Post Closure Funds to fill in the difference between its future costs and dedicated revenue sources.

Six-Year Capital Cost and Revenue Comparison – All County Facilities

**Exhibit 3-34. Estimated General Capital Dedicated Revenues and Costs
(2016 – 2021 in YOES)**

General Capital Funds (excluding amount committed to debt service)	2016 - 2021
General Capital Revenue	\$27,980,000
2015 General Capital Fund Balance	\$3,233,965
TOTAL GENERAL CAPITAL FUNDS AVAILABLE	\$31,213,965
General Capital Costs	\$0
Estimated Dedicated General Capital Funding Surplus/(Deficit)	\$ — 31,213,965
TOTAL DEDICATED CAPITAL FUNDS*	\$156,935,904
TOTAL CAPITAL NEED**	\$195,574,504
TOTAL DEDICATED CAPITAL FUNDING SURPLUS/(DEFICIT)	\$ — (38,638,600)

*Total dedicated capital funds include projected revenues for all services provided by the County.

Source: Kitsap County, 2015; BERK, 2012, 2015; BHC Consultants, 2015.

As shown in Exhibit 3-34, the total shortfall between the County’s estimated six-year capital costs and projected six-year dedicated capital revenues is approximately \$38.6 million. Funds available include about \$31 million in general capital funds that can be spent on any type of capital project.

This variance represents the structural difference between incoming dedicated capital revenues and planned capital expenditures over the six-year planning period, and does not reflect the County’s likely future cash flow or ability to pay. The County has tools beyond its dedicated revenue streams with which to fund capital projects, such as reprioritization of operating revenues and its unused debt capacity.

The largest of the current difference is from sewer capital costs, which the County plans to bond for. The County’s unused long-term debt capacity is about \$583 million, including \$311 million of non-voted capacity and \$272 million of voted capacity (Kitsap County 2015 Budget Book, 2015). This available bonding capacity far exceeds the costs presented above. Therefore, it would be possible to issue bonds to cover the deficits shown if revenue does not increase, expenses do not decrease, or programs are not reprioritized.

3.8 Other Service Providers

For service providers other than Kitsap County we have presented general funding information for each type of service in the sections below. For review of the specific funding sources for each provider we have relied on the most current CFP available for that provider. Information has been supplemented via personal communication with provider representatives where possible.

4.0 SERVICE AREA AND INFRASTRUCTURE DETAIL



4.1 Administration: Public Buildings

Overview

Kitsap County's public buildings, which include government administrative offices, courtrooms, juvenile justice, maintenance facilities, and community centers, serve the county as a whole, including incorporated and unincorporated populations.



Kitsap County Administration Building
www.wbdg.org



Kitsap County Coroner's Office

Inventory of Current Facilities

Exhibit 4-1 shows the location and size of each public building. The 2015 inventory shows that the County has approximately 193,350 square feet of administrative courthouse campus space, 106,417 square feet of administration space, 69,560 square feet of buildings serviced by parks space, 89,456 square feet of maintenance facilities, and 50,850 square feet of community centers space. In total, Kitsap County has approximately 509,633 square feet of public building space.

Exhibit 4-1. County Public Buildings: Current Facilities Inventory (2015)

Facility	Location	Size (Sq Ft)
Administrative Courthouse Campus		
Courthouse (includes 4 district and 7 superior) courtrooms)	614 Division Street, Port Orchard	105,000
Bullard Building		8,000
New Administration Building	619 Division Street, Port Orchard	80,350
Total Administrative Courthouse Campus		193,350
Corrections Facility		
Juvenile Jail Facility		35 beds
Total Corrections Facility		35 beds
Other Administrative Facilities		
Child Support*	730 Prospect, Port Orchard (Leased Building)	6,400
Public Works Annex	8600 SW Imperial Way, Port Orchard	44,978
Kingston Precinct/Commissioners**	26076 Illinois Avenue NE, Kingston (Leased)	1,200
KITZ Building - BKAT	7266 Tibardis Rd, Bremerton	2,000
Coroner/Morgue	5010 Linden, Bremerton	8,459
Recovery Center	1975 Fuson Road, Bremerton	13,000
CenCom & DEM***	5050 Linden, Bremerton	24,680
SAU Buliding	715 Sidney	5,700
Total Administration		106,417
Buildings Serviced by Parks		
Parks and Recreation Administration Office	1201 NW Fairgrounds Road, Bremerton	8,000
Fair Administration Office	1300 NW Fairgrounds Road, Bremerton	2,560
Fairgrounds Pavillion	1200 NW Fairgrounds Road, Bremerton	39,000
Presidents' Hall	1250 NW Fairgrounds Road, Bremerton	20,000
Total Buildings Serviced by Parks		69,560
Maintenance Facilities		
General Facilities Maintenance	717 Taylor Street, Port Orchard	7,900
Public Works Maintenance	1971 Seabeck Rd NE	38,697
Public Works Maintenance	2339 Cedar Road SW	21,495
Public Works Maintenance	301 Berndt Road NE	21,364
Total Maintenance Facilities		89,456
Community Centers		
Givens Community Center	1026 Sidney Avenue, Port Orchard	46,850
Kingston Community Center	11212 State Hwy 104, Kingston	4,000
Total Community Centers		50,850
Total Public Buildings		509,633

Notes:

*Private building.

** Buildings are privately owned, and rented by County staff.

***Although CenCom is officially a County Department, it essentially operates as a separate entity and is operationally guided by a Policy Board consisting of County Commissioners, Mayors, and Fire Commissioners. Its building is managed and funded separately from Facilities Maintenance Capital Improvement Plans (CIP's). DEM has been historically housed with CenCom.

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Services, 2015; BERK, 2015.

Level of Service Analysis

County Administration Buildings

The County's Level of Service (LOS) for County Administration buildings is 952 square feet per 1,000 countywide population. This level was adopted in the 2012 Capital Facilities Plan Update and reflected a decrease from the previous LOS. Currently, the County has a deficit in County administration space, as shown in Exhibit 4-2. However, the County has been moving towards a more lean administration process, with the adoption of Six Sigma tools, backing up data to the cloud rather than keeping physical files, and flextime and telecommuting options for workers. A portion of the recent budget's requisition process included a study to consider how best to use County administration space.

Exhibit 4-2. County Administration Buildings: LOS Requirements Analysis

Time Period	Kitsap Countywide Population	Square Feet Needed to Meet LOS Standard	Current Square Feet Available	Net Reserve or Deficit
Current LOS Standard = 952 square feet per 1,000 population				
2015	258,200	245,806	106,417	(139,389)
2021 Preferred Alternative	278,676	265,300	106,417	(158,883)
2036 Preferred Alternative	332,993	317,010	106,417	(210,593)

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

To address future LOS deficiencies, the County can lower its LOS standards to reflect space efficiencies, as shown in Exhibit 4-3.

Exhibit 4-3. Potential LOS Adjustments for County Administration Buildings

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (SF/ 1000 people)
2015	952 square feet per 1,000 population	(139,389)	412
2021 Preferred Alternative	952 square feet per 1,000 population	(158,883)	382
2036 Preferred Alternative	952 square feet per 1,000 population	(210,593)	320

Source: Kitsap County, 2015; BERK, 2015.

County Maintenance Facilities

The LOS for County Maintenance Facilities is 109 square feet per 1,000 population. Currently and within the 6-year and 20-year planning periods, the County will be able to meet the County Maintenance Facility LOS standard, as shown in Exhibit 4-4. To be efficient with public funds, the County has outsourced its custodial services to a private company

Exhibit 4-4. LOS Requirements Analysis – County Maintenance Facilities

Time Period	Kitsap Countywide Population	Square Feet Needed to Meet LOS Standard	Current Square Feet Available	Net Reserve or Deficit
Current LOS Standard = 109 square feet per 1,000 population				
2015	258,200	28,144	89,456	61,312
2021 Preferred Alternative	278,676	30,376	89,456	59,080
2036 Preferred Alternative	332,993	36,296	89,456	53,160

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

County District Courtrooms

The LOS for County District Courtrooms is currently 0.012 courtrooms per 1,000 population. As shown in Exhibit 4-5, the County will not have a reserve of district courtrooms in 2036 and may need to build new courtrooms to accommodate population growth. To meet this need, the County plans to build a new complex, which will house the courthouse with additional courtrooms, as well as the Human Services Office and the Aging and Long-Term Care Office. A space needs analysis is pending.

Exhibit 4-5. LOS Requirements Analysis – County District Courtrooms

Time Period	Kitsap Countywide Population	Courtrooms Needed to Meet LOS Standard	Current Courtrooms Available	Net Reserve or Deficit
Current LOS Standard = 0.012 courtrooms per 1,000 population				
2015	258,200	3	4	1
2021 Preferred Alternative	278,676	3	4	1
2036 Preferred Alternative	332,993	4	4	0

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

County Superior Courtrooms

The LOS for County Superior Courtrooms is 0.021 courtrooms per 1,000 population. As shown in Exhibit 4-6, the County does not currently have a deficit of County Superior Courtrooms over the next 20 years; however, in 2036, the County will have a reserve of zero County Superior Courtrooms and may need to build new courtrooms to accommodate population growth. To meet this need, the County plans to build a new complex, which will house the courthouse with additional courtrooms as well as the Human Services Office and the Aging and Long-Term Care Office. A space needs analysis is pending.

Exhibit 4-6. LOS Requirement Analysis – County Superior Courtrooms

Time Period	Kitsap Countywide Population	Courtrooms Needed to Meet LOS Standard	Current Courtrooms Available	Net Reserve or Deficit
Current LOS Standard = 0.021 courtrooms per 1,000 population				
2015	258,200	5	7	2
2021 Preferred Alternative	278,676	6	7	1
2036 Preferred Alternative	332,993	7	7	0

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

Juvenile Jail Facility

The Juvenile Jail facility is overseen by the Superior Court. The current LOS for juvenile facilities is 0.084 beds per 1,000 population. The County is currently meeting the LOS standard, and has a surplus of 13 beds, as shown in Exhibit 4-7. This surplus is projected to decline to seven beds by 2036.

Exhibit 4-7. LOS Requirement Analysis – Juvenile Jail Facility

Time Period	Kitsap Countywide Population	Beds Needed to Meet LOS Standards	Beds Available	Net Reserve or Deficit
Current LOS Standard = 0.084 Beds per 1,000 Population				
2015	258,200	22	35	13
2021 Preferred Alternative	278,676	23	35	12
2036 Preferred Alternative	332,993	28	35	7

Source: David J. White, Chief of Detectives at Kitsap County Sheriff’s Office, 2015; BERK, 2015.

County Community Centers

The LOS for County community centers is 200 square feet per 1,000 population. The County currently has a deficit of 790 square feet, as shown in Exhibit 4-8. Additionally, there is no community center space in Silverdale, the community center in North Kitsap (Kingston) will require a move and replacement due to a road project, and the South Kitsap (Givens) facility is outdated and undersized. This is discussed in more detail in the next section, Public Buildings Capital Projects and Funding. The projected deficit in community center space for 2021 and 2036 under the Preferred Alternative is shown in Exhibit 4-8.

Exhibit 4-8. LOS Requirement Analysis – County Community Centers

Time Period	Kitsap Countywide Population	Square Feet Needed to Meet LOS Standard	Current Square Feet Available	Net Reserve or Deficit
Current LOS Standard = 200 square feet per 1,000 population				
2015	258,200	51,640	50,850	(790)
2021 Preferred Alternative	278,676	55,735	50,850	(4,885)
2036 Preferred Alternative	332,993	66,599	50,850	(15,749)

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

To address future LOS deficiencies, the County can lower its LOS standards, as shown in Exhibit 4-9 for the 2016-2021 period and also for the 2022-2036 period.

Exhibit 4-9. Potential LOS Adjustments for County Community Centers

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (SF/ 1000 people)
2015	200 square feet per 1,000 population	(790)	197
2021 Preferred Alternative	200 square feet per 1,000 population	(4,885)	182
2036 Preferred Alternative	200 square feet per 1,000 population	(15,749)	153

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

Capital Projects and Funding

Exhibit 4-10 shows the planned public building capital facilities projects. A new courthouse is planned to be built between 2022 and 2036, and is anticipated to include the Kitsap County Human Services Division and the Kitsap County Division of Aging and Long-Term Care. Its size and cost will be determined through a pending space needs study.

The Kingston Community Center will be relocated due to the realignment of state route 104, and will be re-built with private funding; it is not listed in the table as it is not a publicly funded project.

The Silverdale Community Center is a 16,070 square foot facility located in the heart of the Silverdale UGA, Regional Growth Center and contained within the boundaries of the County-owned Central Kitsap Community Campus. This Community Center includes 4,380 square feet of public meeting space and over 6,000 square feet of performing arts space dedicated for use by a non-profit community theater association known as C-STOCK. In the winter of 2014, portions of the Silverdale Community Center were closed off to public access after extensive water damage. Following building assessments and identification of capital costs for replacement, the Center was closed permanently from public use in August 2015.

Following a successful partnership with the YMCA of Pierce and Kitsap Counties to construct a 85,785 square foot YMCA recreational facility on the Campus, the County is currently discussing with multiple public and private stakeholders on a future replacement of the Community Center and redevelopment of the Campus as a whole through a public-private partnerships. Feasibility assessments for development and associated costs are intended to be conducted in 2016. Demolition is shown in the capital project list in 2016.

Expansion or replacement of the Givens Community Center is anticipated in years 2022 and 2036, with costs and revenue sources to be determined. In addition is possible that there will be a South Kitsap Community Center developed in partnership between the YMCA, City of Port Orchard, and Kitsap County. A market analysis is pending on this potential center.

Exhibit 4-10. Public Buildings Capital Facilities Projects, 2016-2036
(All numbers in 2015 \$1000s)

Category/ Project Description	Revenue Sources	Cost 2016-2018	Cost 2019-2021	Cost 2022-2036	Total Cost
Category I: Capacity Increasing Projects					
New Courthouse	TBD			TBD	TBD
Silverdale Community Center	Federal	TBD	TBD		TBD
Givens Community Center	TBD			TBD	TBD
Category II: Capital Replacement, Maintenance and Operations					
Silverdale Community Center Demolition, Asbestos Assessment/ Removal	Parks Capital Fund	200			200

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; Personal Communication with Angie Silva, Commissioner’s Office, 2015; BERK, 2015.

Exhibit 4-11 shows the public building capital facilities project costs, and Exhibit 4-12 shows the revenue sources for the planned capital facilities projects.

Exhibit 4-11. Public Buildings Capital Facilities Project Costs, 2016-2036
(All numbers in 2015 \$1000s)

Category Summary	Cost Years 2016- 2021	Cost Years 2022- 2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	TBD	TBD	TBD
Category II (Other Projects Needed for Maintenance and Operations)	200		200
Total	200	TBD	200

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

Exhibit 4-12. Public Buildings Capital Facilities Revenue Sources, 2016-2036
(All numbers in 2015 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Parks Capital Fund	200	TBD	200
Total	200	TBD	200

Source: Personal Communication with Bud Harris, Director of Kitsap County Department of Information Service, 2015; BERK, 2015.

4.2 Public Safety: Law Enforcement



Overview

The Kitsap County Sheriff Department serves the population of unincorporated Kitsap County. The Department is responsible for law enforcement, maintaining order, crime investigation and prevention, traffic control, marine enforcement, process and service of civil papers for the courts, service of criminal warrants, and other emergency services.

The Sheriff's main office is located in Port Orchard, and is the home to the Sheriff, Undersheriff, records, detective, patrol chief, administration, corrections and the evidence/ storage rooms. The Patrol Chief has an office at the courthouse. Satellite offices include the North Office in Kingston which has been closed and is anticipated to be relocated in the future. The Sheriff's Office used to staff a storefront in Silverdale Mall that is now closed. The Silverdale office remains open.

The County correctional facilities, which service the population of incorporated cities and the unincorporated county, consist of a jail and a juvenile facility. The jail is located on the courthouse campus in Port Orchard. The jail is attached to the second floor of the courthouse and is accessible from the sheriff's main office. The County correctional facilities used a work release facility in the past; however, that facility is no longer used by the Sheriff's Office. The Superior Court operates the Juvenile Jail Facility.

Inventory of Current Facilities

Law enforcement facilities include sheriff administration and operations offices (23,540 square feet), sheriff's office storage space (13,210 square feet), and sheriff's office corrections jail facility (519 beds).

Exhibit 4-13. Law Enforcement Current Facilities Inventory

Name	Location	Size/Quantity (SF and beds)
<i>Sheriff's Office Space</i>		
Main Office	614 Division Street, Port Orchard, WA	16,500
Central Office	3133 Randall Way, Silverdale, WA	5,620
Kitsap Community Resources	Jackson Avenue, Port Orchard, WA	110
Station 17	7990 McCormick Woods Dr. SW, Port Orchard	110
Drug Task Force/ SIU*		1,200
Total Sheriff's Office Space		23,540
<i>Sheriff's Office Storage Space</i>		
Readiness Center Space*	West Bremerton	10,000
Silverdale Storage Container*	3951 Randall Way, Silverdale, WA	250
Vehicle Impound lot, Carport and Storage South Road Shed off Cedar Street Building		2,960
Total Sheriff's Office Storage Space		13,210
<i>Sheriff's Office Corrections</i>		
Jail	614 Division Street, Port Orchard	519
Total Sheriff's Office Corrections		519

Notes: The Drug Task Force/ SIU location will not be released for Office Safety Reasons.

* The County leases these spaces.

Source: David J. White, Chief of Detectives at Kitsap County Sheriff's Office, 2015; Ned Newlin, Chief of Corrections Division at Kitsap County Sheriff's Office, 2015; BERK, 2015.

The Sheriff's Office-operated Jail Facility does not use 40 of the 519 beds, because it does not need them to meet the regional incarceration needs of Kitsap County. It is anticipated that the jail will be at full capacity within the next 15 years depending on population trends and changes in criminal laws.

The Juvenile Correctional Facility is under the jurisdiction of the Superior Court.



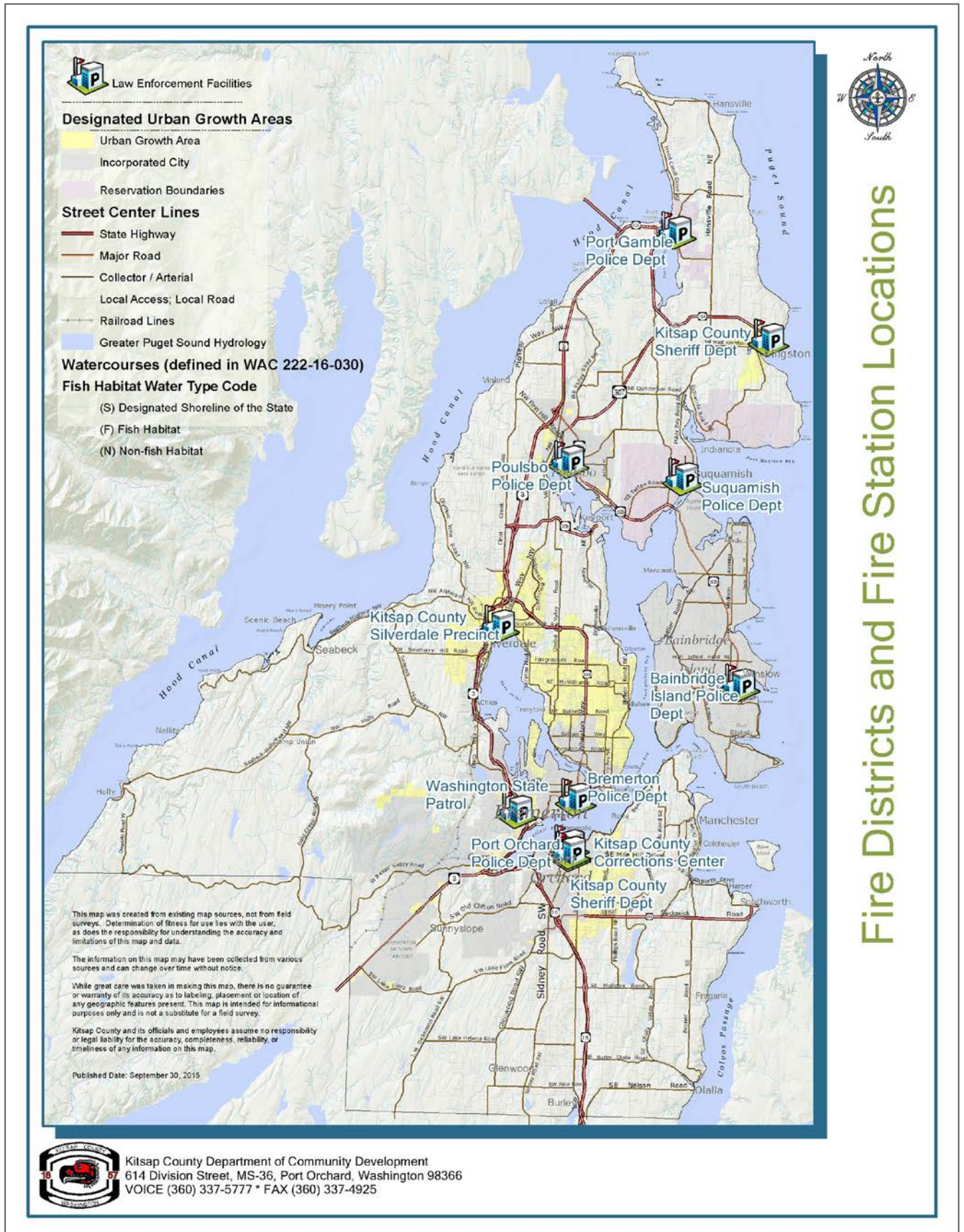
Sheriff's Office Car



Kitsap County Rescue Boat

A map of County and other law enforcement facilities provided by city and state agencies is provided on Exhibit 4-14.

Exhibit 4-14. Law Enforcement Facilities



Source: Kitsap County Community Development Department, 2015

Level of Service Capacity Analysis

Sheriff's Office

The Level of Service (LOS) standard for the Sheriff's Office space is 129 square feet per 1,000 unincorporated population. The County currently has a 1,360 feet surplus of office space; however, that surplus will become a deficit in 2021. This deficit is expected to grow through 2036 as the unincorporated population increases.

Exhibit 4-15. LOS Requirement Analysis – Sheriff's Office Space

Time Period	Kitsap Unincorporated County Population	Square Feet Needed to Meet LOS Standard	Square Feet Available	Net Reserve or (Deficit)
Current LOS Standard = 129 square feet per 1,000 population				
2015	171,940	22,180	23,540	1,360
2021 Preferred Alternative	183,015	23,609	23,540	(69)
2036 Preferred Alternative	213,923	27,596	23,540	(4,056)

Source: David J. White, Chief of Detectives at Kitsap County Sheriff's Office, 2015; BERK, 2015.

To address deficiencies, the County could choose to add facilities or adjust its LOS standards to reflect likely future service levels given estimated population growth and current facility plans. The County Sheriff's Office is planning to conduct a Needs Assessment of its facilities and space.

If the County elects to adjust LOS, even for the interim until the Needs Assessment is completed, the standards that would be needed to address the deficiency through 2036 are shown in Exhibit 4-16.

Exhibit 4-16. Potential LOS Adjustments for Sheriff's Office

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (SF/ 1000 people)
2015	129 square feet per 1,000 population	1,360	137
2021 Preferred Alternative	129 square feet per 1,000 population	(69)	129
2036 Preferred Alternative	129 square feet per 1,000 population	(4,056)	109

Source: David J. White, Chief of Detectives at Kitsap County Sheriff's Office, 2015; BERK, 2015.

The County Sheriff's Office 2015 space per capita is 0.14 square feet per person. The Pierce County Sheriff's office is at 0.5 square feet per person (Pierce County Comprehensive Plan, June 2015). Snohomish County does not appear to have a standard in its 2015 Capital Facilities Plan, but its plan describes that a 2008 needs assessment was conducted and that "on-campus needs of the Sheriff's office will be addressed in the current project to build a new courthouse and renovate the existing Mission Building" (Snohomish County Capital Facilities Plan, 2015) Whatcom County's per capita standard is 0.26 square feet per person, though that standard is changing in the Comprehensive Plan update to reflect the recent jail and Sherriff's office study rather than including a numeric standard (Whatcom County, 2015).

County Jails

The LOS standard for County Jail Facilities is 1.43 beds per 1,000 countywide population. Based on this standard there is a surplus of jail beds, and this surplus would continue through 2036. The Sheriff's Office operated jail facility does not use 40 out of the 519 beds listed. It is anticipated that the jail will be at full capacity within the next 15 years or sooner depending on population trends and changes in criminal laws that may occur during that time frame (Newlin, 2015).

Exhibit 4-17. LOS Requirement Analysis – County Jail Facilities

Time Period	Kitsap Countywide Population	Beds Needed to Meet LOS Standards	Beds Available	Net Reserve or Deficit
Current LOS Standard = 1.43 Beds Per 1,000 Population				
2015	258,200	369	519	150
2021 Preferred Alternative	278,676	399	519	120
2036 Preferred Alternative	332,993	476	519	43

Source: David J. White, Chief of Detectives at Kitsap County Sheriff’s Office, 2015; BERK, 2015.

Kitsap County is considering an alternative level of service for its jail facility based on incarceration rates. The Bureau of Justice Statistics for jails estimated a typical incarceration rate of 234 inmates per 100,000 population in 2014 (Zhang, 2015). Kitsap County’s incarceration rate was only 168 per 100,000 population in 2014, 170 in 2013, and 167 in 2012. Kitsap County incarcerates 28% fewer people than the average for other jurisdictions in the nation.

The average daily population (i.e. beds used per day) for the jail for the years 2011 to 2014 ranged from 417 to 427. Using an incarceration rate of 168 inmates per 100,000 population, there would be adequate space in the six-year period, but a deficit in the 7-20 year period under the Preferred Alternative.

Exhibit 4-18. Alternative LOS Based on Incarceration Rate

Time Period	Kitsap Countywide Population	Beds Needed to meet LOS Standards	Beds Available	Net Reserve or Deficit
Alternative LOS Standard = Kitsap County Incarceration Rate: 168/100,000 Population				
2015	258,200	434	519	85
2021 Preferred Alternative	278,676	468	519	51
2036 Preferred Alternative	332,993	559	519	(40)

Source: Kitsap County Sheriff’s Office, 2015; BERK, 2015.

Changing to the alternative LOS standard may require spending more resources educating the community and preventing individuals from becoming incarcerated or reoffending.

Exhibit 4-19. Potential LOS Adjustments for the Incarceration Rate

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (SF/ 1000 people)
2015	168 people/ 100,000 population	0	201
2021 Preferred Alternative	168 people/ 100,000 population	0	186
2036 Preferred Alternative	168 people/ 100,000 population	(40)	156

Source: Kitsap County Sheriff’s Office, 2015; BERK, 2015.

Capital Projects and Funding

The County Sheriff’s Office is planning to conduct a Needs Assessment of its facilities and space. The Sheriff’s Office expressed a need for additional storage space for property, vehicles, equipment, and training space (fire arms training).The Sheriff’s Office also expressed a need for office space in Silverdale and potentially in south Kitsap County. The Needs Assessment will determine the future capital facilities projects for Sheriff facilities including offices, supporting facilities, and the jail.

Exhibit 4-20. Sheriff’s Office Capital Facilities Projects

Category/ Project Description	Revenue Sources	Cost 2016-2018	Cost 2019-2021	Cost 2022-2036	Total Cost
Category I: Capacity Increasing Projects					
TBD		TBD	TBD	TBD	TBD
Category II: Capital Replacement, Maintenance and Operations					
Project Description: None					

Source: David J. White, Chief of Detectives at Kitsap County Sheriff’s Office, 2015; BERK, 2015.

Exhibit 4-21. Sheriff’s Office Capital Facilities Project Costs

Category Summary	Cost Years 2016- 2021	Cost Years 2022- 2036	Total Cost
Category 1 (Capacity Projects Required to Meet LOS)	TBD	TBD	TBD
Category 2 (Other Projects Needed for Maintenance and Operations)			
Total	TBD	TBD	TBD

Source: David J. White, Chief of Detectives at Kitsap County Sheriff’s Office, 2015; BERK, 2015.

Exhibit 4-22. Sheriff’s Office Capital Facilities Project Revenues

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Name of Fund	TBD	TBD	TBD
Total	TBD	TBD	TBD

Source: David J. White, Chief of Detectives at Kitsap County Sheriff’s Office, 2015; BERK, 2015.

4.3 Public Safety: Fire Protection



Overview

Kitsap County is served by Central Kitsap Fire and Rescue (CKFR), Fire District 18/Poulsbo Fire Department, North Kitsap Fire and Rescue (NKFR), and South Kitsap Fire and Rescue (SKFR). The Cities of Bremerton and Bainbridge Island have their own fire departments. The cities of Port Orchard and Poulsbo, as well as unincorporated areas within the County, receive fire protection from SKFR and Fire District 18/Poulsbo Fire Department, respectively.

Excluding the Bainbridge Island Fire Department, there are a total of 34 fire stations in the county, 20 of which are staffed with career personnel. Other stations are staffed with volunteers, which is important for serving areas of the county that are more remote. Staffed and volunteer station locations are listed in Exhibit 4-23.

Exhibit 4-23. Staffed and Non-Staffed Fire Stations in Kitsap County

Fire District	Staffed Stations	Volunteer Stations
North Kitsap Fire and Rescue (NKFR)	4	1
Poulsbo Fire Department	2	2
Bainbridge Island	1	3
Central Kitsap Fire and Rescue (CKFR)	5	5
Bremerton	3	0
South Kitsap Fire and Rescue	6	6
Total	21	17
Total Excluding Bainbridge Island	20	14

Source: North Kitsap Fire and Rescue, 2015; Poulsbo Fire Department Website, 2015; Bainbridge Island Fire Department Website, 2015; Central Kitsap Fire and Rescue, 2015; Bremerton Fire Department, 2015; South Kitsap Fire and Rescue, 2015.

County Fire Protection Districts

Fire protection districts in Kitsap County have entered into agreements with the Washington State Department of Natural Resources (DNR) to jointly fight fires on state-owned land and private forestland. DNR has no responsibility or authority in incorporated areas of the county. Each municipality is responsible for all fires within its boundaries. For the unincorporated lands, DNR and some fire districts have split up fire protection and suppression responsibility through creation of a fire protection zone (FPZ) (see WAC 332-24-710 Forest protection zone—Kitsap County). DNR has protection responsibility for non-structural fires within an FPZ. The fire district protects all other unincorporated areas as well as structures within the FPZ. DNR policy is that it will not fight structure fires. Any structure within a fire district's boundaries is the responsibility of the district. DNR also protects certain state land parcels regardless of location. DNR is a signatory on the countywide mutual aid agreement and will respond as mutual aid when requested.

Inventory of Current Facilities

Exhibit 4-24 summarizes the capital facilities available for each fire district and includes each district's fire rating, presence of EMS service, and service area population.

Exhibit 4-24. Kitsap County Fire Protection Facilities Inventory

Fire Protection Provider	Number of Stations	WSRB 2012 Fire Rating	Fire Units*	EMS Services	2014 OFM Service Area Population**
North Kitsap Fire and Rescue (NKFR)	5	5	14	Y	19,387
Poulsbo Fire Department	4	4 - Within City Limits 5 - Outside City Limits	13	Y	14,705
Central Kitsap Fire and Rescue (CKFR)	10	4	34	Y	69,753
Bremerton Fire Department	3	3	13	Y	39,410
South Kitsap Fire and Rescue (SKFR)	12	4	34	Y	72,046***

Notes:

* A unit is the combination of vehicle and equipment that responds to a fire or EMS situation, including engines, ladder trucks, water tenders, rescue units, aid cars and ambulances, and rehabilitation units, but not including staff or miscellaneous vehicles.

** The Bremerton Fire Department serves the City of Bremerton, and the Service Area Population is from 2015.

*** The estimate shown is provided by the district. 2014 OFM Service Area Population estimate is 60,688 for the South Kitsap Fire and Rescue District. Source: North Kitsap Fire and Rescue, 2015; Poulsbo Fire Department Website, 2015; Bainbridge Island Fire Department Website, 2015; Central Kitsap Fire and Rescue, 2015; Bremerton Fire Department, 2015; South Kitsap Fire and Rescue, 2015.

Response Time Objectives

State statute (RCW 52.33) requires fire districts with a predominance of career staff (as opposed to volunteers) to adopt and annually report response time objectives. These objectives may change over time to respond to each district's resources and needs. Current response time objectives by fire department or district are shown in Exhibit 4-25.

Exhibit 4-25. Response Time Objectives

District / Department	Response Time Objective
Bremerton Fire Department	6 minute response time, City Services Element 2016
Central Kitsap Fire & Rescue	Turnout time goal: 90 seconds, met 90% of the time. Travel time goals: suburban (fire/EMS 8:00), rural (fire/EMS 12:00), and wilderness areas (fire/EMS 20:00).
North Kitsap Fire & Rescue	Structure Fires Turnout Time Goal: 165 seconds (2:45) or better 90% of the time Travel Time Goal First Arriving Engine Company: 7 minutes 50 seconds (7:50) or better 90% of the time EMS (Basic Life Support) Turnout Time Goal: 120 seconds (2:00) or better 90% of the time Travel Time Goal First Arriving BLS Unit with (2) EMT Qualified Personnel: 8 minutes 40 seconds (8:40) or better 90% of the time. EMS (Advanced Life Support) Turnout Time Goal: 120 seconds (2:00) or better 90% of the time Travel Time Goal First Arriving ALS Unit with (1) PM Qualified Personnel: 12 minutes 30 seconds (12:30) or better 90% of the time
Poulsbo Fire Department	Turnout Time: 2:00 minutes for fire and priority 1 and 2 events and 1:30 minutes for medical events. Response time of units to suburban calls for service at 8:00 minutes. Rural response time goals, at 11:00 minutes.
South Kitsap Fire & Rescue	Turnout time, the district has a goal of 90 seconds or less 90% of the time. Travel times for fire responses range from 5:00 minutes to 10:50 minutes depending on the urban, suburban, or rural nature of the call. Travel times for EMS services ranged from 6:20 to 11:15 minutes also depending on the urban, suburban, or rural nature of the call.

Source: Bremerton Fire Department, 2015; Central Kitsap Fire and Rescue, 2015; North Kitsap Fire and Rescue, 2015; Poulsbo Fire Department, 2015; South Kitsap Fire & Rescue, 2015.

CFP Level of Service Standard

Consistent with GMA requirements to establish levels of service for improvements necessary for development, this CFP provides a minimum countywide measure of need for fire services. All fire districts in Kitsap County must achieve the following minimum Washington Surveying and Ratings Bureau (WSRB) Ratings:

- Fire districts with career staff serving urban areas must have a minimum WSRB rating of 4. Urban areas include city limits and UGAs.
- The portions of districts serving rural areas with non-career staff must have a minimum WSRB Rating of 5. Rural areas consist of lands outside of UGAs and city limits.

Fire Services and WSRB Ratings

The WSRB is a non-profit agency that evaluates fire protection capabilities of cities and fire protection districts. In turn, insurance companies use WSRB Protection Classes to help establish fair premiums for fire insurance. The evaluation process includes a review of the following that are relevant to capital facilities: distribution of fire stations and fire companies, apparatus equipment, water supply, and water pressure. Other activities reviewed include personnel and training, response to alarms, dispatching, code enforcement, and public education.

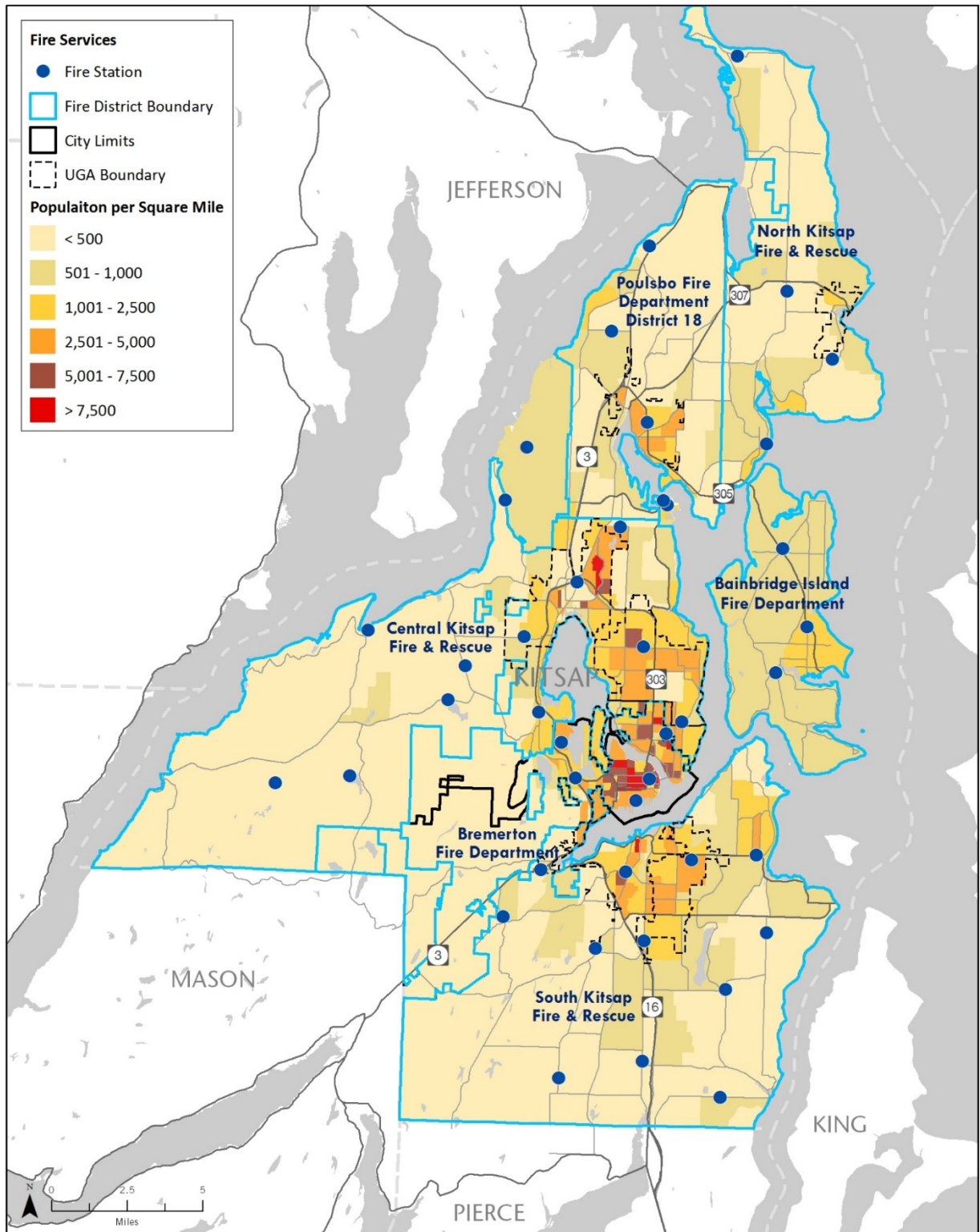
Fire districts and departments respond to fires and EMS calls from their stations with their apparatus, but their response occurs within a broader system where other agencies have important roles.

- Kitsap County is responsible for planning for population and employment growth under GMA and provides housing opportunities through zoning. As described above, proposed LOS standards for fire services rely on WSRB ratings and are higher in more densely populated areas than in rural areas. Exhibit 4-26 and Exhibit 4-27 below show fire services and population density in Kitsap County in 2036 under the Preferred Alternative and today, respectively. The population growth will increase not only the number of calls but also tax revenue available to service providers.
- The Kitsap County Fire Marshal's Office works to enhance fire safety through quality fire inspections, plan review, fire investigation, and fire prevention education; County fire marshal services are applicable in all districts except within the City of Bremerton that provides its own services.
- Water service providers are responsible for the water supply and fire flow pressure, in tandem with County building and fire codes.

Selection of the WSRB-based ratings for the Fire Service LOS reflects that fire protection is based on the collective efforts of the fire districts, Kitsap County, cities, and water providers. Ensuring adequate staff resources for planning and permitting (e.g. County fire marshal services) will be important to consider at the time of the County's annual budget. During the development review process, the County will require consistency with the fire code and water availability. The County will also interface with fire districts and cities, and discuss their fire protection capital investments at the time of CFP updates.

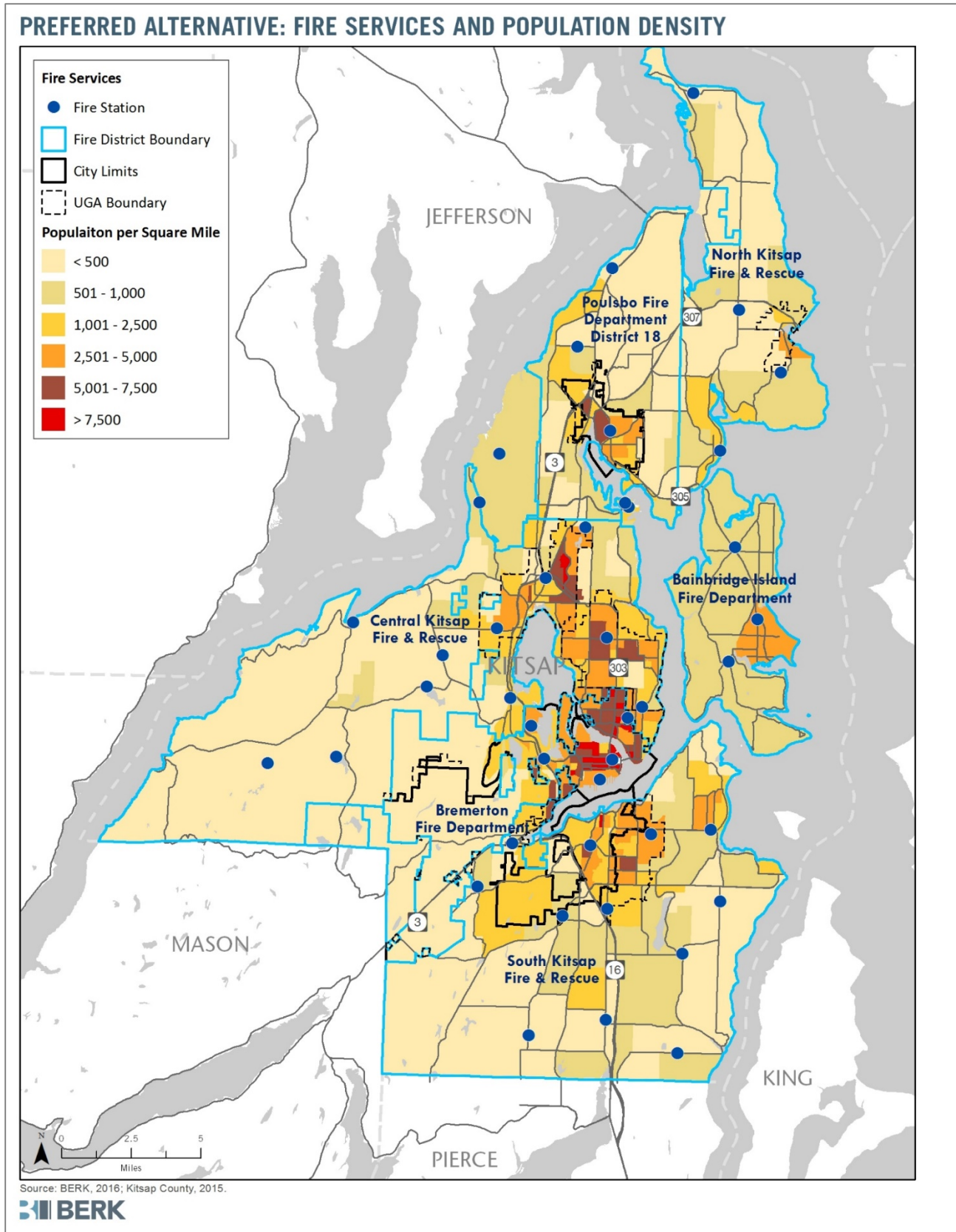
Exhibit 4-26. Kitsap County Fire Services and Population Density – Existing Conditions

BASELINE 2012: FIRE SERVICES AND POPULATION DENSITY



Source: Kitsap County, 2015; BERK Consulting 2015

Exhibit 4-27. Kitsap County Fire Services and Population Density, 2036
 – Preferred Alternative



Source: Kitsap County, 2015; BERK Consulting 2015

The following sections look at some of the factors that make up the WSRB rating for each fire department: including apparatus equipment and personnel.

Fire Districts

Central Kitsap Fire and Rescue

Central Kitsap Fire and Rescue (CKFR) is one of the largest fire service providers in Kitsap County. CKFR provides fire and emergency medical services response to approximately 69,753 citizens in a service area of approximately 115 square miles. Because of its location, CKFR has a significant amount of waterfront in its service area—40 miles of tidal waterfront with adjacent saltwater area and numerous small lakes and ponds.

Communities recognized within CKFR are Silverdale, Olympic View, Seabeck, Lake Symington, Lake Tahuya, Island Lake, Ridgetop, Crosby, Hintzville, Holly, Brownsville, Gilberton, Meadowdale, North Perry, Illahee, Tracyton, Chico, Wildcat Lake, Kitsap Lake, and Erlands Point.

Capital Improvement Projects

Exhibit 4-28 shows CKFR’s planned capital projects. Exhibit 4-29 shows the capital projects costs for 2016-2021 and 2022-2036, and Exhibit 4-30 shows the capital project revenues for the same time periods.

Central Kitsap Fire and Rescue

Fire Units

- 14 fire engines (1,000-1,500 gallons-per-minute pump capacity and 750-1,000-gallon tank capacity), seven of which are four-wheel-drive
- 1 brush engine
- 1 ladder truck (105-foot)
- 5 water tenders (four 3,000-gallon tank capacity tenders and one 1,250-gallon tank capacity tender)
- 1 rescue units
- 10 medical units (three advanced life support and seven basic life support)
- 1 emergency scene rehabilitation unit
- 1 rescue boat, 17-foot
- 20 miscellaneous vehicles (e.g., staff, utility, delivery)

Staff

- 1 Fire Chief
- 1 Deputy Chief
- 1 Division Chief
- 4 Battalion Chiefs
- 7 Captains
- 10 Lieutenants
- 56 FF/PM/EMT/AO
- 5 Support Staff
- 4 Mechanics
- 3 Facilities Maintenance
- 1 Public Information Officer
- 1 Inventory Supply Coordinator
- 1 HR Manager
- 1 Fiscal Services Manager
- 1 IT Manager
- 1 Maintenance/Mechanic Manager
- 1 Volunteer Program Manager
- 75 Volunteers (including 4 residents)

Exhibit 4-28. Central Kitsap Fire and Rescue Capital Projects (All numbers in 2016 \$1000s)

Category/ Project Description	Revenue Sources	Cost	Cost	Cost	Total Cost
		2016-2018	2019-2021	2022-2036	
Category I: Capacity Increasing Projects					
1. Apparatus	Bond	1,863			1,863
2. Equipment	Bond	1,442			1,442
Category II: Capital Replacement, Maintenance and Operations					
1. Maintenance and Operations	Capital Facilities Fund	624			624
2. Other Bond Expenses	Bond	54			54

Source: Central Kitsap Fire and Rescue, 2015; BERK, 2016.

Exhibit 4-29. Central Kitsap Fire and Rescue Capital Project Costs (All numbers in 2016 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	3,304	TBD	3,304
Category II (Other Projects Needed for Maintenance and Operations)	677	TBD	677
Total	3,981	TBD	3,981

Source: Central Kitsap Fire and Rescue, 2015; BERK, 2016.

Exhibit 4-30. Central Kitsap Fire and Rescue Capital Project Revenues (All numbers in 2016 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Bond	3,358	TBD	3,358
Capital Facilities Bond	624	TBD	624
Total	3,981	TBD	3,981

Source: Central Kitsap Fire and Rescue, 2015; BERK, 2016.

CKFR Fire Suppression and Rescue



Apartment Fire, 2007

Source: CKFR, 2015.



Rescue, 2007

North Kitsap Fire and Rescue

North Kitsap Fire and Rescue (NKFR), located in the northeast portion of the county, provides fire and emergency medical services (EMS) to an area of approximately 47 square miles and serves an estimated 2014 population of 19,387 (OFM, 2014). The product of multiple mergers, NKFR serves the communities of Kingston, Hansville, Eglon, Indianola, Gamblewood, Jefferson Beach, Miller Bay, Suquamish, and approximately 80% of the Suquamish Indian Reservation. By contract, the district also provides fire and EMS services to the Port Gamble S'Klallam Indian Reservation at Little Boston whose territory does not fall within the district's legal boundaries. The contract for services adds an estimated 682 persons and five square miles to its service responsibilities.

NKFR Accident Response 2002



Capital Projects

Exhibit 4-31 shows the planned capital projects for North Kitsap Fire and Rescue. Exhibit 4-32 and Exhibit 4-33 show the planned project costs and revenues, respectively.

**Exhibit 4-31. NKFR Capital Projects
2016-2036 (All numbers in 2015 \$1000s)**

Category/ Project Description	Revenue Sources	Cost	Cost	Cost	Total Cost
		2016-2018	2019-2021	2022-2036	
Category I: Capacity Increasing Projects					
1. Replace Fire Engines	Fire District Regular Tax Levy	778			778
2. Replace Aid Units	Fire District Regular Tax Levy	611.4			611
3. Replace Fire Station	GO Bond and/or Gov't-Tribal Partnerships		5,000		5,000
Category II: Capital Replacement, Maintenance and Operations					
Project Description: None					

Source: Personal Communication with Cindy Manlove, Administrative Assistant, North Kitsap Fire and Rescue; BERK, 2015.

North Kitsap Fire and Rescue

Fire Units

- 5 fire engines (1 reserve)
- 4 Ambulances (2 reserves)
- 3 Water Tenders
- 1 Wildland Engine
- 1 Fire Boat

Staff

NKFR has a total of 74 staff and volunteers, 44 of whom are career staff, and includes the following:

- Administration – 2 Career FTEs
- Administrative Support – 2 Career FTEs
- Community Services: 1 Career FTE, 4 volunteers
- Emergency Services
 - Suppression/ EMS: 35 Career FTEs, 15 Volunteer FTEs
 - EMS: 2 Volunteers
 - Tender Operations: 6 Volunteers
- Chaplain Services: 4 Volunteers
- Facilities Management: 1 Career FTE
- Fleet Services: 3 Career FTEs
- t*
- 3 full-time Mechanics*
- 0.33 Facilities Maintenance Manager*
- 3 Office Staff*
- 15 Resident Volunteer Firefighters (on average)
- 5 Volunteers of Various Types (e.g. Tender Drivers and Child Car Seat Technicians)
- 3 Volunteer Chaplains

*Paid Positions

Exhibit 4-32. NKFR Capital Project Costs 2016-2036 (All numbers in 2015 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	6,389	TBD	6,389
Category II (Other Projects Needed for Maintenance and Operations)	0	0	0
Total	6,389	TBD	6,389

Source: Personal Communication with Cindy Manlove, Administrative Assistant, North Kitsap Fire and Rescue; BERK, 2015.

Exhibit 4-33. NKFR Capital Project Revenues 2016-2036 (All numbers in 2015 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Fire District Regular Tax Levy	1,389	TBD	1,389
GO Bond and/or Gov't-Tribal Partnerships	5,000	TBD	5,000
Total	1,389	TBD	1,389

Source: Personal Communication with Cindy Manlove, Administrative Assistant, North Kitsap Fire and Rescue; BERK, 2015.

South Kitsap Fire and Rescue

South Kitsap Fire and Rescue (SKFR), located in the southern portion of Kitsap County, covers 118 square miles and serves a population of approximately 72,046 as of 2014¹. Within the service area there are 22 miles of tidal waterfront with adjacent saltwater area, plus numerous small lakes and ponds. SKFR also covers a considerable amount of DNR land on a contractual basis.

SKFR serves the City of Port Orchard and the Port of Bremerton's Airport and Olympic View Industrial Park under a contractual agreement. Fourteen percent of the water for firefighting is provided by water districts and systems. Fire district tenders provide water for firefighting in the remaining 86% of the district.

The major water purveyors in South Kitsap are the West Sound Utility District; the Manchester Water District; the City of Port Orchard; Bremerton Water; and privately owned water systems such as Harbor Water, Crown Properties Incorporated, Long Lake View Estates, McCormick Woods Water Company, Rainier View Water, Sunnyslope Water, and Watauga Beach Community Water.

SKFR responds to all types of fire, medical, and related emergency situations from 12 stations throughout the district. Six stations are staffed with career employees 24 hours per day while another six stations are not.

¹ The South Kitsap Fire and Rescue 2014 OFM Service Area Population estimate is 60,688.

South Kitsap Fire and Rescue

Fire Units

- 13 Engines
- 4 Medic Units
- 1 Brush Trucks
- 4 Aid Units
- 7 Tenders
- 1 Ladder Truck
- 1 Air Support Unit
- 2 Command Vehicle
- 1 MCI Unit

Staff

- 5 Commissioners
- 1 Fire Chief
- 1 Deputy Chief
- 2 Division Chiefs
- 3 Battalion Chiefs
- 1 Deputy Fire Marshal
- 1 Computer Technician
- 3 Vehicle Maintenance
- 2 Facilities Maintenance
- 6 Admin Support Staff
- 19 Lieutenants
- 2 Captains
- 16 Paramedics
- 33 Career Fire Fighters
- 1 Volunteer Lead Battalion Chief
- 1 Volunteer Battalion Chiefs
- 3 Volunteer Captains
- 3 Volunteer Lieutenants
- 21 Volunteer Firefighters
- 8 Intern Firefighters
- 5 Chaplains
- 27 Volunteer Support Personnel



SKFR Vehicle Fire Response



SKFR Fire Response



SKFR Cedar Cove Days

Capital Projects

Exhibit 4-34 shows SKFR’s planned projects. Exhibit 4-35 and Exhibit 4-36 show SKFR’s planned projects costs and revenues, respectively.

Exhibit 4-34. SKFR Capital Projects, 2016-2036 (All numbers in 2015 \$1000s)

Category/ Project Description	Revenue Sources	Cost	Cost	Cost	Total Cost
		2016-2018	2019-2021	2022-2036	
Category I: Capacity Increasing Projects					
Project Description: None					
Category II: Capital Replacement, Maintenance and Operations					
Tenant Improvements		375	125		500
Mobile Assets	Bonds	4,900			4,900

Source: Personal Communication with Guy Dalrymple, Deputy Chief of South Kitsap Fire and Rescue, 2015.

Exhibit 4-35. SKFR Capital Project Costs (All numbers in 2015 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	0	0	0
Category II (Other Projects Needed for Maintenance and Operations)	5,400	TBD	5,400
Total	5,400	TBD	5,400

Source: Personal Communication with Guy Dalrymple, Deputy Chief of South Kitsap Fire and Rescue, 2015.

Exhibit 4-36. SKFR Capital Project Revenues (All numbers in 2015 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Fund Source - Bonds	4,900	TBD	4,900
Fund Source - Levy, Other	500		500
Total	5,400	TBD	5,400

Source: Personal Communication with Guy Dalrymple, Deputy Chief of South Kitsap Fire and Rescue.

Bremerton Fire Department

The City of Bremerton Fire Department provides emergency and non-emergency fire, rescue, and medical services to approximately 39,410 residents of Bremerton (OFM, 2015).

Bremerton Fire Department

Fire Units

- 1 Command
- 6 Engines
- 5 Medic Units
- 1 Ladder Truck

Staff

- 1 Battalion Chief/ Training-Safety
- 3 Battalion Chiefs
- 1 Capital/ Fire Marshal
- 1 Captain/ Medical Officer
- 1 Fire Chief
- 1 Fire Prevention Specialist
- 3 Firefighters/ Mechanics
- 3 Firefighters/ SCBA Repair Persons
- 15 Firefighters
- 9 Lieutenants
- 51 Line Personnel
- 1 Senior Specialist
- 14 Paramedics
- 5 Staff Personnel
- 2 Station Captains

Bremerton Fire Response, 2007



Capital Projects

Exhibit 4-37 shows the capital projects planned for the Bremerton Fire Department from 2016 through 2036. Exhibit 4-38 and Exhibit 4-39 show the 2016-2036 capital project costs and revenues, respectively.

Exhibit 4-37. Bremerton Fire Department Capital Projects 2016-2036
(All numbers in 2015 \$1000s)

Category / Project Description	Revenue Sources	Cost 2016-18	Cost 2019-21	Cost 2022-36	Total Cost
Category I: Capacity Increasing Projects					
Project Description: none					
Category II: Capital Replacement and Maintenance					
Station 2 and 3 remodel/ renovation/upgrade	Levy	1,000			1,000
Ladder Truck Replacement (1)	Levy	1,200			1,200
Fire Engine Replacement (2)	Levy	1,200			1,200
EMS Vehicle Replacement (2)	Levy	400			400
Air Tanks (44)	Levy		300		300
Staff Vehicles (6)	Levy		280		280
Portable Radios (40)	Levy		80		80
Thermal Imaging Cameras (3)	Levy		35		35

Source: Personal Communication with Al Duke, Fire Chief of the Bremerton Fire Department, 2015; BERK, 2015.

Exhibit 4-38. Bremerton Fire Department Capital Project Costs (All numbers in 2015 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Program or Project Type I: Capacity	0	0	0
Program or Project Type II: Capital Replacement and Maintenance	4,495	0	4,495
Total	4,495	0	4,495

Source: Personal Communication with Al Duke, Fire Chief of the Bremerton Fire Department, 2015; BERK, 2015.

Exhibit 4-39. Bremerton Fire Department Fire Department Capital Project Revenues (All numbers in 2015 \$1000s)

Revenue Source	Revenue Years 2016-2021	Revenue Years 2022-2036	Total Revenue
November 2015 Levy (Proposed)	4,495	-	4,495
Total	4,495	-	4,495

Source: Personal Communication with Al Duke, Fire Chief of the Bremerton Fire Department, 2015; BERK, 2015.

On average, the Bremerton Fire Department received 0.19 calls per capita annually between 2003 and 2013, including both fire and EMS calls (Fire Department, 2015). Assuming this per capita rate continues, the UGA areas will add around 2,600 calls by 2036. These added calls will impact the Department’s ability to respond quickly and it is likely that investments will be needed to run the service at the desired response time of 5.0 minutes.

East Bremerton is currently served by Central Kitsap Fire & Rescue (CKFR); the District has stations in proximity to the UGA and the Bremerton Fire Department also has a station in the Sylvan area. The City anticipates based on the 2015 UGA boundaries the City could serve East Bremerton even with the additional population allocation over 20 years. (Duke, 2015)

For the West Bremerton UGA areas, there are fire stations well-situated to respond to these areas. If annexed, the City would take over provision of fire and EMS services for West Hills (currently served by CKFR), Rocky Point (currently served by South Kitsap Fire and Rescue [SKFR]), and Navy Yard City (currently served by SKFR); no additional capital needs are anticipated though there would be a need to add staffing due to the calls for service for Navy Yard City. The Fire Department estimates that annexing Navy Yard City would require changes to the current response zones including the need for two additional firefighters. (BERK Consulting, 2015).

Just outside of the Gorst UGA there is a SKFR District station, which has the ability to provide rapid response times. The station has one engine, one medic unit and one brush truck for fighting wildland fires (AECOM and BERK, 2013). The short-term impacts of annexing the Gorst UGA will be addressed through a contract with SKFR, but in the long term, the City will need to look at providing these services directly. In that case, the City would need a fire station (there is one currently in Gorst), an engine/paramedic unit, and six to twelve FTEs to provide fire service. (BERK Consulting, 2015)

Poulsbo Fire Department / Fire District 18



Poulsbo Fire Dept. Vehicle

The City of Poulsbo annexed to the Kitsap County Fire Protection District No.18 in 1998.

The District covers approximately 54 square miles and served a population of approximately 23,594 people as of 2010. District No. 18 extends north of Poulsbo to Port Gamble, west to Bangor Naval Base/Clear Creek Road, and south to Mountain View Road. The eastern boundary is approximately three miles east of Poulsbo. The Fire Department has four fire stations: Station 71 and Station 77 are staffed full time, Station 72 is flex-staffed, and Station 73 is staffed by volunteers.

Capital Projects

Capital projects adapted from a 2012 plan are listed below in Exhibit 4-40 and summarized in Exhibit 4-41 and Exhibit 4-42.

Poulsbo Fire Department/ Fire District 18

Fire Units

- 4 engines
- 2 tenders
- 2 medic units
- 3 aid units
- 1 rescue boat
- Several staff cars

Staff

- 1 fire chief
 - 2 deputy chiefs
 - 10 A Shift BC
 - 10 B Shift BC
 - 9 C Shift BC
 - 30 volunteer firefighters
 - 1 administrative services manager
 - 1 office manager
 - 1 public education PIO
 - 1 finance
 - 1 office assistant
-

Exhibit 4-40. Poulsbo Fire Department Capital Projects 2016-2036 (All numbers in 2012 \$1000s)

Category/ Project Description	Revenue Sources	Cost	Cost	Cost	Total Cost
		2016-2018	2019-2021	2022-2036	
Category I: Capacity Increasing Projects					
Project Description: None					
Category II: Capital Replacement, Maintenance and Operations					
Replace SCBAs (including SCBA Compressor)	Fire District Tax Levy		260		260
Replace Bunker Gear	Fire District Tax Levy	48	113		161
Medic Unit Replacement	Fire District Tax Levy	243	761		1,004
Ongoing Fire Hose Replacement	Fire District Tax Levy		64		64
MCT	Fire District Tax Levy		88		88
Replace Lifepack	Fire District Tax Levy		103		103
Other Fire Equipment	Fire District Tax Levy	9	86		95
Ongoing Miscellaneous Capital Improvements	Fire District Tax Levy	142	316		458
Replace Staff Vehicles	Fire District Tax Levy	72	113		185
Repair Station 71 Parking Lots & Drainage	TBD		500		500
Replace Flat Roofs at Station 71 with Peaked Roofs	TBD		300		300
Replace Station 73	TBD		3,500		3,500
Add Exhaust Capture Systems, Upgrade Bay Doors	TBD		450		450
Replace Engines at End of Useful Life	TBD	1,200	2,825		4,025

Source: Poulsbo Fire Department, 2012; BERK, 2015.

Exhibit 4-41. Poulsbo Fire Department Capital Projects Costs 2016-2036 (All numbers are in 2012 \$1000s)

Category Summary	Cost Years		Total Cost
	2016-2021	2022-2036	
Category I (Capacity Projects Required to Meet LOS)	0	0	0
Category II (Other Projects Needed for Maintenance and Operations)	11,193	TBD	11,193
Total	11,193	0	11,193

Source: Poulsbo Fire Department, 2012; BERK, 2015.

Exhibit 4-42. Poulsbo Fire Department Capital Project Revenues 2016-2036 (All numbers are in 2012 \$1000s)

Revenue Source	Revenue Years		Total Revenue
	2016-2021	2022-2036	
Fire District Tax Levy	2,418	TBD	2,418
Source TBD	8,775	TBD	8,775
Total	11,193	TBD	11,193

Source: Poulsbo Fire Department, 2012; BERK, 2015.

4.4 Parks and Recreation

Overview

A variety of public agencies and private organizations provide parks and recreation facilities within Kitsap County, including Washington State Parks, Washington Department of Natural Resources (DNR), National Park Service-designated Kitsap Peninsula Water Trail, schools, and cities.



Inventory of Current Facilities

Kitsap County owns approximately 7,278 acres of parkland, and other agencies own approximately 19,847 acres of parkland in the county, as shown in Exhibit 4-43. Kitsap County owns 8.5 miles of shoreline access and approximately 100 miles of trails in the county, while other agencies own 18 miles of shoreline access and 57 miles of trails in the county. Park space is generally used by all county residents. Out-of-county and out-of-state visitors and tourists also use a significant portion of these regional sites and facilities.



Playground

Exhibit 4-43. County-Owned Parks, Shoreline Access, and Trails

Type of Park	Kitsap County Capacity (Acres)	Other Agencies Capacity (Acres)	Total Capacity (Acres)
Natural Resource Areas	1,191	16,699	17,890
Heritage Parks	4,699	0	4,699
Regional Parks	590	2,342	2,932
Community Parks	339	806	1,145
Partnership Properties	459		459
Total Acres	7,278	19,847	27,125
Shoreline Access (Miles)	8.5	18	26.5
Trail Miles (Paved and Unpaved)	100	57	157

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Active and Passive Recreation Facilities

The County owns and manages a wide variety of active and passive recreation facilities, including baseball and softball fields, soccer fields, tennis courts, and other venues, as shown in Exhibit 4-44 and Exhibit 4-45.

Exhibit 4-44. County-Owned Active Recreation Facilities (Units)

Type of Active Recreation Facility	Kitsap County Capacity
Baseball Fields (250"+)	8
Baseball Fields (200"+)	19
Indoor Gymnasium	1
Basketball	7
Volleyball	6
Soccer	18
Tennis Courts	9
Horseshoe Pits	32
BMX Track	1
Golf Course Holes	36
Skate Park	3

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Exhibit 4-45. County-Owned Passive Recreation Facilities (Units)

Type of Passive Recreation Facility	Kitsap County Capacity
Playgrounds	12
Garden features	1
Off-leash areas	3
Trails	
Trails (Paved)	1
Trails (Unpaved)	73
Total Trails (Miles)	74

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.



Kitsap Kids Playground, Fairgrounds and Events Center

Other Recreation Facilities

Exhibit 4-46 shows the inventory of additional recreational facilities owned and managed by the County, including beach and water activities, and community centers.

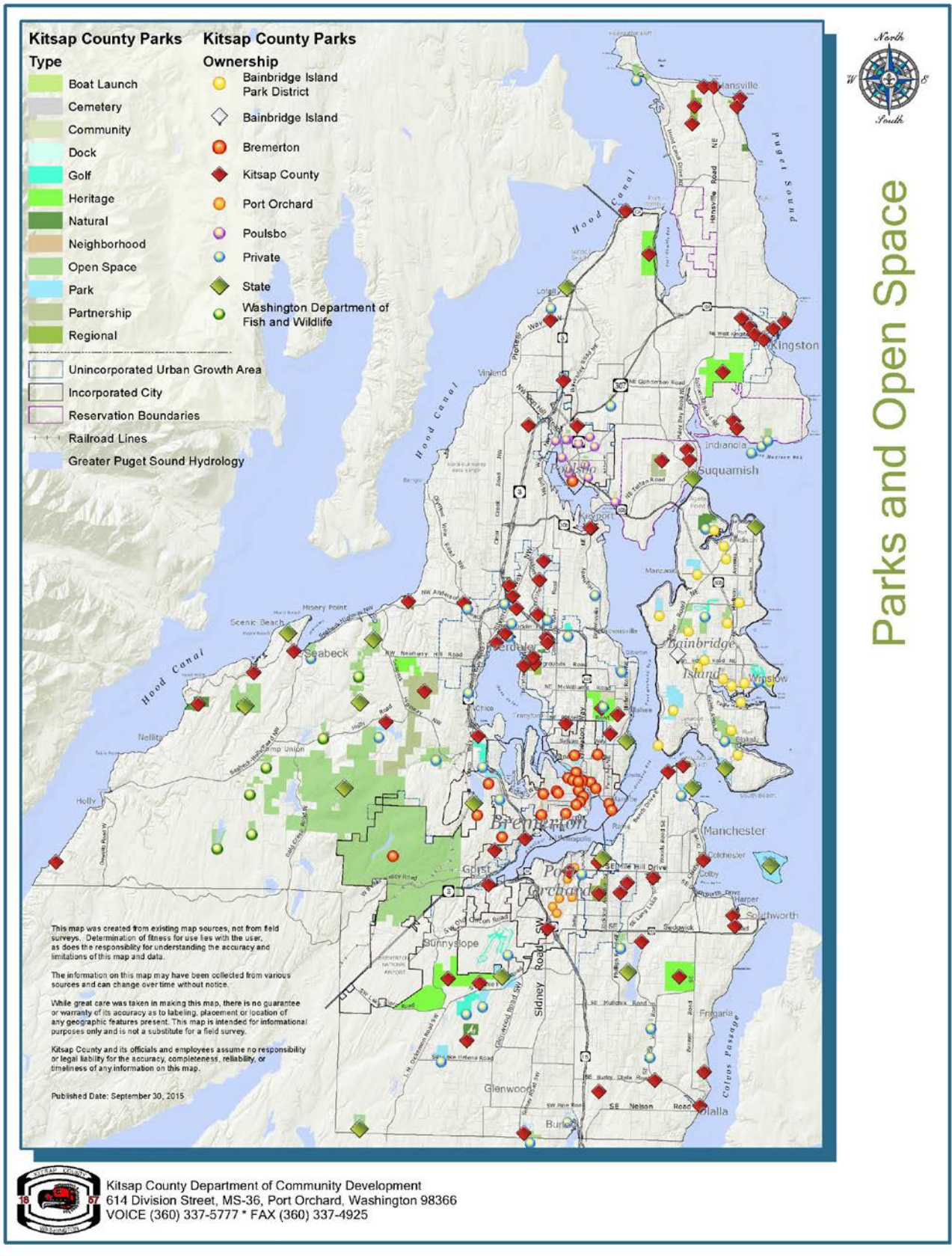
Exhibit 4-46. County-Owned Facilities by Category (Units)

Type of Passive Recreation Facility	Kitsap County Capacity
Boat launches - motorized	2
Boat launches - non-motorized	4
Docks	3
Piers	5
Benches	21
Shelters	5
Swimming Shoreline	1,512 linear feet
Saltwater Shoreline	29,051 linear feet
Freshwater Shoreline	5,361 linear feet
Showers	10
Restrooms	23
Drinking Fountains	14
Camp Sites	56
Parking Spaces	892

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

A map of parks facilities provided by Kitsap County and other agencies is provided on Exhibit 4-47.

Exhibit 4-47. Kitsap County Parks Facilities



Source: Kitsap County Community Development 2015

Level of Service Capacity Analysis

The LOS analysis for parks is based on the 2012 Kitsap County Parks, Recreation & Open Space (PROS) Plan that was adopted in March of 2012. For most of the parks and recreation facilities include two forms of LOS: The “target” LOS is from PROS, and “base” LOS was the standard adopted in the 2012 based on the fundable plan.

Natural Resource Areas

The adopted LOS for natural resource areas is 71.1 acres per 1,000 population, including both County and non-County facilities. Currently, the County is not meeting this standard as shown in Exhibit 4-48.

Exhibit 4-48. Target LOS Requirement Analysis – Natural Resource Areas

Time Period	Kitsap Countywide Population	Acres to meet Target LOS Standard	Acres Available	Net Reserve or Deficit
Natural Resources Area LOS Standard = 71.1 Acres per 1,000 population				
2015	258,200	18,332	17,890	(442)
2021 Preferred Alternative	278,676	19,786	17,890	(1,896)
2036 Preferred Alternative	332,993	23,643	17,890	(5,753)

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

The 2012 CFP included a base LOS of 57.1 acres per 1,000 population. The County has sufficient capacity to meet this LOS standard now and through the six-year planning period, but will have a deficit in the twenty-year planning period, as shown in Exhibit 4-49.

Exhibit 4-49. Base LOS Requirement Analysis – Natural Resource Areas

Time Period	Kitsap Countywide Population	Acres to meet Target LOS Standard	Acres Available	Net Reserve or Deficit
Natural Resources Area LOS Standard = 57.1 acres per 1,000 population				
2015	258,200	14,743	17,890	3,147
2021 Preferred Alternative	278,676	15,912	17,890	1,978
2036 Preferred Alternative	332,993	19,014	17,890	(1,124)

Source: Kitsap County CFP 2012; BERK, 2015.

To meet the target LOS in all periods and the base LOS in 2036, the County is working on a community effort called the Kitsap Forest and Bay Project that could double the County’s open space and passive recreational acres. The Forest and Bay project is anticipated to add up to 4,910 acres by purchasing Pope Resources land with public and private resources, and dedicating the land for public use. The land includes:

- Port Gamble Upland Block – 3,316 acres
- Port Gamble Shoreline Block - 564 acres, including 1.8 miles of shoreline (already acquired)
- Divide Block - 664 acres (180 acres already acquired)
- Park Expansion Block - 366 acres (already acquired)

Working with DNR, some State land may also be transferred to County ownership through the legislatively-funded Trust Land Transfer (TLT) Program. Under this program DNR’s timbered

properties are transferred to another public agency that will manage and protect it for public use and enjoyment. The current proposal includes:

- Olympic View proposed TLT - 50 acres

The additional Kitsap Forest and Bay Project properties are not currently classified as Natural Resource Areas, but these properties can be managed as natural resource areas or open spaces where logging is permitted, which could help solve the Natural Areas LOS deficit. The Parks Department can determine appropriate classifications and a management approach as it updates the PROS Plan scheduled for 2018.

Regional Parks

The adopted target LOS for regional parks is 16 acres per 1,000 population, including County and non-County facilities. The County currently has a deficiency of 1,199 acres, and this deficiency continues and increases through 2036, as shown in Exhibit 4-50.

Exhibit 4-50. Target LOS Requirement Analysis – Regional Parks

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Acres Available	Net Reserve or Deficiency
Regional Parks LOS = 16 acres per 1,000 population				
2015	258,200	4,131	2,932	(1,199)
2021 Preferred Alternative	278,676	4,459	2,932	(1,527)
2036 Preferred Alternative	332,993	5,328	2,932	(2,396)

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

In 2012, the CFP identified a base LOS of 8.9 acres per 1,000 people. At this standard, the County would meet the needs of growth in the 2016-2021 period, as shown in Exhibit 4-51, and would have a slight deficit by the 2022-2036 period. The deficit could be addressed by additions in non-County regional parkland or by changing the base LOS to 8.8 acres per 1,000 persons for the outer years of the planning period.

Exhibit 4-51. Base LOS Adjustments for Regional Parks

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Acres Available	Net Reserve or Deficiency
Regional Parks LOS = 8.9 acres per 1,000 population				
2015	258,200	2,298	2,932	634
2021 Preferred Alternative	278,676	2,480	2,932	452
2036 Preferred Alternative	332,993	2,964	2,932	(32)

Source: Kitsap County CFP, 2012; BERK, 2015.

If the County elected to adjust its LOS to a base level, the standards shown in Exhibit 4-52 would allow the County to meet the base standards under the Preferred Alternative for the 2016-2021 period and the 2022-2036 period.

Exhibit 4-52. Potential LOS Adjustments for Regional Parks

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (Acres/ 1000 people)
2015	16 acres/ 1,000 people	(1,199)	11.4
2021 Preferred Alternative	16 acres/ 1,000 people	(1,527)	10.5
2036 Preferred Alternative	16 acres/ 1,000 people	(2,396)	8.89

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Heritage Parks

The adopted target LOS for heritage parks is 19 acres per 1,000 population and assumes the full acres owned by the County. The County is currently deficient in heritage parks, as shown in Exhibit 4-53. Heritage parks are only provided by Kitsap County.

Exhibit 4-53. Target LOS Requirement Analysis – Heritage Parks

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Acres Available	Net Reserve or Deficiency
Heritage Parks LOS = 19 acres per 1,000 population				
2015	258,200	4,906	4,699	(207)
2021 Preferred Alternative	278,676	5,295	4,699	(596)
2036 Preferred Alternative	332,993	6,327	4,699	(1,628)

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

The 2012 CFP base LOS is 11.5 acres per 1,000 population. Using this standard, the deficits would be reversed, as shown in Exhibit 4-54. Due to heritage park additions since 2012, it is likely the County could increase its base LOS.

Exhibit 4-54. Base LOS Requirement Analysis for Heritage Parks

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Acres Available	Net Reserve or Deficiency
Heritage Parks LOS = 11.5 acres per 1,000 population				
2015	258,200	2,969	4,699	1,730
2021 Preferred Alternative	278,676	3,205	4,699	1,494
2036 Preferred Alternative	332,993	3,829	4,699	870

Source: Kitsap County CFP 2012; BERK, 2015.

The County could reassess its LOS standards for heritage parks and adopt base LOS standards reflecting its larger inventory since 2012. The County could have a base LOS of 17 acres per 1,000 persons from 2015 to 2021 and a base LOS of 14 acres per 1,000 persons by the close of the 2036 planning period.

If the County elected to adjust its LOS to a base level, the standards shown in Exhibit 4-55 would allow the County to meet the base standards under the Preferred Alternative for the 2016-2021 period and also for the 2022-2036 period.

Exhibit 4-55. Potential LOS Adjustments for Heritage Parks

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (Acres/ 1000 people)
2015	19 acres/ 1,000 people	(207)	18
2021 Preferred Alternative	19 acres/ 1,000 people	(596)	17
2036 Preferred Alternative	19 acres/ 1,000 people	(1,628)	14

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Community Parks

The adopted target LOS for community parks is 4.65 acres per 1,000 population. There is a small deficit in 2015 that grows by 2036, as shown in Exhibit 4-56.

Exhibit 4-56. Target LOS Requirement Analysis – Community Park

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Acres Available	Net Reserve or Deficiency
Community Parks LOS = 4.65 acres per 1,000 population				
2015	258,200	1,201	1,145	(56)
2021 Preferred Alternative	278,676	1,296	1,145	(151)
2036 Preferred Alternative	332,993	1,548	1,145	(403)

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

In 2012, a base LOS of 3.50 acres per 1,000 was adopted. That LOS would be sufficient through the six-year period and result in small deficiencies by year 20, as shown in Exhibit 4-57. Changing the base LOS to 3.44 acres per 1,000 persons would address deficiencies in the outer years of the planning period.

Exhibit 4-57. Base LOS Requirement Analysis – Community Park

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Acres Available	Net Reserve or Deficiency
Community Parks LOS = 3.5 acres per 1,000 population				
2015	258,200	904	1,145	241
2021 Preferred Alternative	278,676	975	1,145	170
2036 Preferred Alternative	332,993	1,165	1,145	(20)

Source: Kitsap County CFP 2012; BERK, 2015.

If the County elected to adjust its LOS to a base level, the standards shown in Exhibit 4-58 would allow the County to meet the base standards under the Preferred Alternative for the 2016-2021 period and also for the 2022-2036 period.

Exhibit 4-58. Potential LOS Adjustments for Community Park

Alternative	Target LOS	Estimated Deficiency	LOS Needed to Address Deficiency (Acres/ 1000 people)
2015	4.65 acres/ 1,000 people	(56)	4.4
2021 Preferred Alternative	4.65 acres/ 1,000 people	(151)	4.1
2036 Preferred Alternative	4.65 acres/ 1,000 people	(403)	4.1

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Shoreline Access

The adopted LOS for shoreline access is 0.061 miles per 1,000 population and includes County and non-County miles of shoreline access. The County currently has a surplus of shoreline access, considering both County and non-County miles of shoreline access, as shown in Exhibit 4-59.

Exhibit 4-59. LOS Requirement Analysis – Shoreline Access

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Miles Available	Net Reserve or Deficiency
Shoreline Access LOS = 0.061 miles per 1,000 population				
2015	258,200	16	26.5	10.7
2021 Preferred Alternative	278,676	17	26.5	9.5
2036 Preferred Alternative	332,993	20	26.5	6.2

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Trails

The adopted LOS for trails is 0.2 miles per 1,000 population and relies on the County’s inventory of trails. The County has a reserve of trail miles through 2036, as shown in Exhibit 4-60. Other agencies provide approximately 57 miles of trails in the county, which, if included in the adopted LOS standard, would increase the surplus.



Kitsap Park Volunteers

Exhibit 4-60. LOS Requirement Analysis – Trails

Time Period	Kitsap Countywide Population	Acres to Meet Target LOS Standard	Miles Available	Net Reserve or Deficiency
Trails LOS = 0.2 miles per 1,000 population				
2015	258,200	52	157	105
2021 Preferred Alternative	278,676	56	157	101
2036 Preferred Alternative	332,993	67	157	90

Source: Kitsap County Parks, Recreation & Open Space Plan, 2012; Kitsap County Parks Department, 2015; BERK, 2015.

Facilities Objectives



SKRP Skate Park, Kitsap County



Example Spray Park, Snohomish Co.

The 2012 Kitsap County PROS Plan contains a demand and needs analysis. The levels of service in the plan for park land, open space, and trails are addressed in this CFP as target levels of service. The PROS Plan also includes a demand analysis for two additional categories of facilities:

- **Athletic Facilities:** ballfields (baseball, soccer, football), sport courts (basketball, tennis, volleyball), multipurpose fields, jogging tracks, gyms, alternative sports facilities (skate park, BMX track), swimming pools, and others.
- **Outdoor Leisure Facilities:** Playgrounds, picnic shelters, camp sites, swimming shoreline, boat launches, golf course holes, nature/interpretive centers, and community centers.

The Athletic Facilities and Outdoor Leisure Facilities needs analysis from the PROS Plan is hereby incorporated by reference.

Because needs, costs, and management approaches can change over time, this CFP provides the following facility objectives:

- A. Based on community needs, provide outdoor leisure and athletic facilities to advance the PROS Plan vision and meet community needs.
- B. Recognizing differences in park classifications, site conditions, costs, maintenance and operations, and other relevant considerations, allow for a variety of outdoor leisure and athletic facilities listed under the two categories or similar to listed facilities. For example, Outdoor Leisure includes playgrounds. The form of playgrounds may vary and include traditional play structures, spray parks, adventure playgrounds, sensory gardens, or others.
- C. Promote a minimum standard of facilities to encourage community access to new parks within funding constraints. For example, full implementation of park master plan may be staged over multiple years. An early phase could install basic amenities such as a loop trail, parking, restrooms, and multipurpose lawn with later phases installed as funding and management considerations allow.



Salsbury Point Boat Ramp



Gordon Field Opening

Land Acquisition and Management Objectives

Much of Kitsap County's inventory of land has been donated or acquired. Some of the land is ecologically sensitive and cannot be used for parks and recreation purposes. Given limited management resources and the need to create a regional connected parks and recreation system, it is important to identify objectives for land acquisition.

Land that is acquired or proposed for donation to Kitsap County should have the following characteristics to ensure it contributes to the envisioned regional park system and can be efficiently managed within limited funding resources:

- A. The property meets a parkland or facility need identified in the adopted PROS plan or approved park master plan.
- B. The property contains adequate usable area for active or leisure recreation purposes.
- C. If used for active recreation, multiple recreation activities in multiple seasons are feasible.
- D. If intended for open space conservation, a management plan is prepared demonstrating how natural resources are to be managed for ecosystem services, the level of maintenance resources needed, and the suitability for public access.
- E. The property can be feasibly maintained and operated.
- F. The property has suitable physical conditions for the intended park use, including soil structure, topography, natural features, vegetation, structures, existing facilities, and local conditions, etc.
- G. Appropriate vehicular and pedestrian access to the site is feasible.
- H. Appropriate utilities and public works systems in relationship to location and intended use of site are available.
- I. The future park, recreation, or open space use is consistent with Comprehensive Plan policies and zoning districts.

Health Objectives

The Growth Management Act promotes planning for healthy lifestyles, such as by promoting well-designed neighborhoods with access to parks, non-motorized trails, and other recreation facilities. Parks capital projects that advance the following health objectives should be prioritized for funding and implementation:

- A. Improve the connectivity of parks, trails, and open space systems, particularly in proximity to population and job centers, to encourage more frequent recreation use.
- B. Promote the design and implementation of facilities that are usable by persons of all ages and abilities, such as improvements implementing ADA requirements.
- C. Provide active or outdoor leisure facilities usable in multiple seasons for a variety of activities.
- D. Advance sustainable design principles such as low impact development, conservation, and other environmentally best management practices.

Capital Projects and Funding

Capital facilities projects for parks are shown in Exhibit 4-61. Exhibit 4-62 shows the capital facilities costs from 2016 through 2036 and Exhibit 4-63 shows the capital facilities revenues for the same time period.

Exhibit 4-61. Parks Capital Facilities Projects 2016-2036 (All numbers in 2015 \$1000s)

Category/ Project Description	Revenue Sources	Cost 2016-2018	Cost 2019-2021	Cost 2022-2036	Total Cost
Category I: Capacity Increasing Projects					
Acquisition - Heritage General	Construction Futures	410	250	TBD	660
Category II: Capital Replacement, Maintenance and Operations					
Improvements	REET II, Construction Fund, General Fund	4,064	3,785	TBD	7,849
Maintenance	REET II, General Fund, Fund Balance	972	780	TBD	1,752

Note: This project list may be further updated based on the 2016 Budget that is under review, and based on further Department review in association with the Preferred Alternative.

Source: Kitsap County Parks Department, 2016; BERK, 2016

Exhibit 4-62. Parks Capital Facilities Costs 2016-2036 (In 2015 dollars)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	660	TBD	660
Category II (Other Projects Needed for Maintenance and Operations)	9,601	TBD	9,601
Total	10,261	TBD	10,261

Source: Kitsap County Parks Department, 2016; BERK, 2016.

Exhibit 4-63. Parks Capital Facilities Revenues 2016-2036

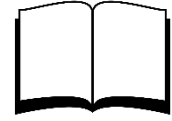
Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
REET II, Construction Fund, General Fund	9,601	TBD	9,601
Construction Futures	660	TBD	660
Total	10,261	TBD	10,261

Note: Funding may be further updated based on the 2016 Budget that is under review, and based on further Department review in association with the Preferred Alternative.

Source: Kitsap County Parks Department, 2016; BERK, 2016.

4.5 Schools

The purpose of this section is to ensure that adequate educational facilities will be available to serve the increasing population of Kitsap County. This section evaluates the four school districts that serve unincorporated Kitsap County: North Kitsap, Central Kitsap, South Kitsap, and Bremerton. Two districts were excluded: Bainbridge Island Schools, because the entire district is located in the City of Bainbridge Island, and the North Mason School District, because it does not have schools or facilities in Kitsap County and serves only a very small area in the southwestern corner of the County. Exhibit 4-64 shows the school district boundaries.

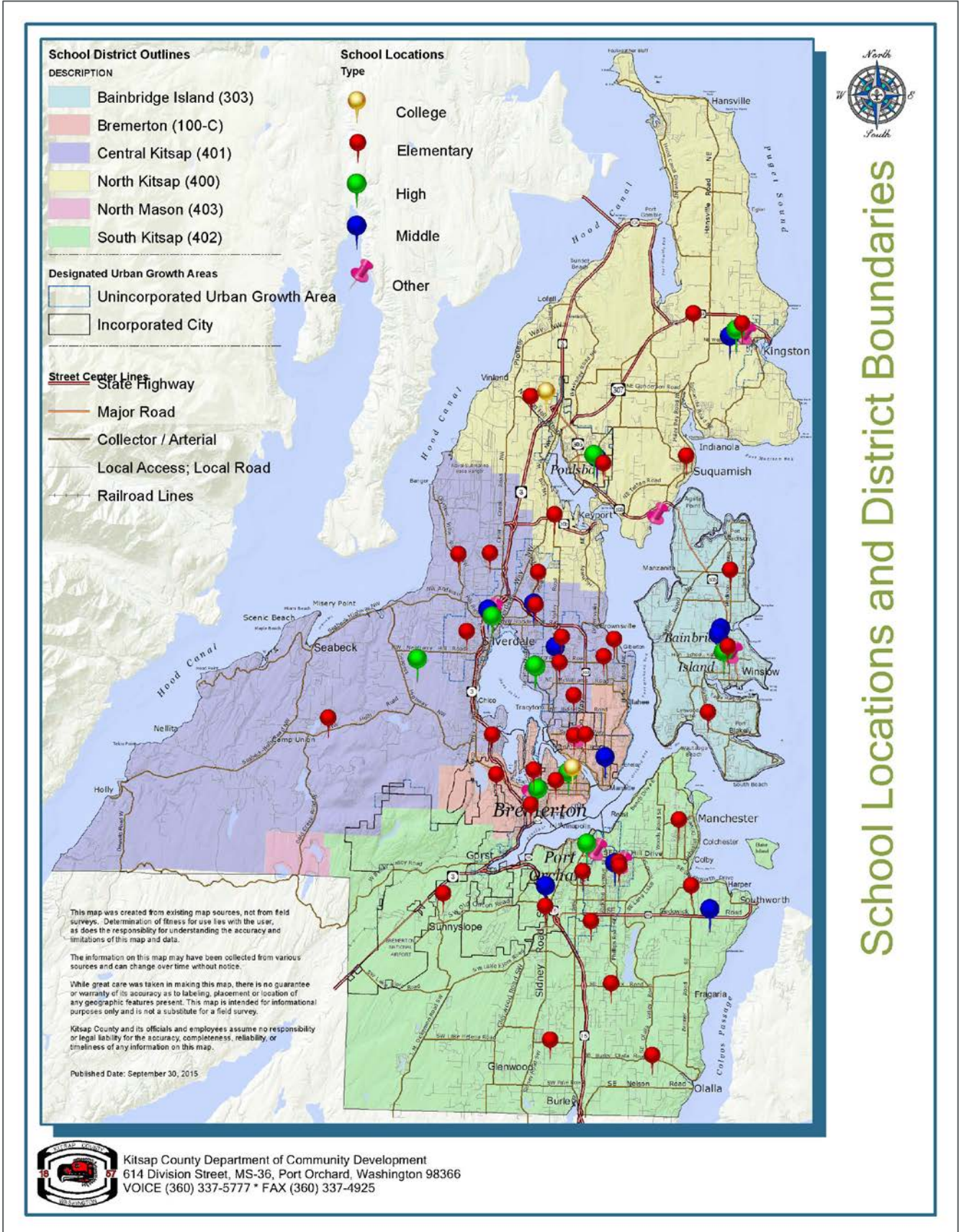


Inventory of Current Facilities

The inventories and analyses of capacity requirements are presented in two ways: with interim (i.e., portable) facilities and without interim facilities. The districts' capital improvement projects are based on the capacity without portables because portables have significant limitations, including heating, ventilation, noise, security, restrooms, storage cupboards, and intercom communications. For these reasons, portables are not considered permanent capacity by the state or by the districts. The capacity of portable rooms is presented to show the interim facilities the districts use (1) to meet short-term enrollment fluctuations, or (2) to serve as temporary facilities until permanent facilities are built.

Capacity figures are generally based on teacher-to-student ratios (expressed as students per classroom) that the school district determines to be most appropriate to accomplish its educational program. These ratios are often contained in employment agreements between districts and their teachers. Inventories of the school districts' existing facilities in Kitsap County are presented in this section.

Exhibit 4-64. Kitsap County School District Boundaries



Source: Kitsap County Community Development Department, 2015

North Kitsap School District

North Kitsap School District (NKSD) is located at the north end of the Kitsap Peninsula and is almost completely surrounded by water. To the west, the district is bordered by Hood Canal and includes the Port Gamble Inlet. To the north and east, Puget Sound borders the district. Port Madison and Liberty Bay surround the district on its southernmost borders. NKSD schools are generally clustered around the City of Poulsbo and the unincorporated community of Kingston. The district currently uses the following grade level configurations: K–5 housed in elementary schools, 6-8 housed in middle schools, and 9-12 housed in senior high schools. Exhibit 4-65 lists North Kitsap Schools and their enrollment capacity.

Exhibit 4-65. North Kitsap School District Current Enrollment Capacity

Schools	Current Enrollment Capacity
<i>Elementary Schools (K-5)</i>	
Breidablik	391
Gordon	320
Pearson	296
Poulsbo	382
Suquamish	345
Vinland	467
Wofle	391
Total Elementary Permanent Facilities	2,592
Total Elementary Interim (Portable) Facilities	1,200
Total Elementary Permanent and Interim Facilities	3,792
<i>Middle School</i>	
Kingston	958
Poulsbo	721
Total Middle School Permanent Facilities	1,679
Total Middle School Interim (Portable Facilities)	525
Middle School School Permanent and Portable Classrooms	2,204
<i>High School</i>	
Kingston	806
North Kitsap	1,313
Spectrum School	75
Total High School Permanent Facilities	2,194
Total High School Interim (Portable Facilities)	250
High School School Permanent and Portable Classrooms	2,444
Overall Total Permanent Facilities Capacity	6,465
Overall Total Interim (Portable) Facilities	1,975
Overall Total Permanent and Interim Facilities	8,440

Source: North Kitsap School District Facility Master Plan, 2015.

Central Kitsap School District

Central Kitsap School District is located on the Kitsap Peninsula, surrounding Dyes Inlet and extending west to the Hood Canal. Currently, there are twelve elementary schools, three middle schools, one 7–12 secondary school, and two senior high schools in the district. The District also provides alternative middle and high school programs. The grade configuration is based on grades K–6, elementary; grades 7–8, middle school that will include grade 6 in the future; and 9–12, high school. Exhibit 4-66 presents the schools of Central Kitsap and their enrollment capacity.

Exhibit 4-66. Central Kitsap School District Inventory

School	Current Enrollment Capacity
<i>Elementary Schools (K–6)</i>	
Brownsville	408
Clear Creek	480
Cottonwood	384
Cougar Valley	480
Emerald Heights	528
Esquire Hills	432
Green Mountain	432
Jackson Park	480
Pinecrest	504
Silverdale	432
Silver Ridge	432
Woodlands	432
Total Elementary Permanent Facilities	5,424
Total Elementary Interim (Portable) Facilities	456
Total Elementary Permanent and Interim Facilities	5,880
<i>Middle Schools (7–8)</i>	
Central Kitsap	875
Fairview	750
Ridgetop	1,025
Total Middle School Permanent Facilities	2,650
Total Middle School Interim (Portable Facilities)	325
Middle School School Permanent and Portable Classroom	2,975
High Schools (9–12)	
Central Kitsap	1,200
Olympic	1,050
Klahowya (7-12)	725
Total High School Permanent Facilities	2,975
Total High School Interim (Portable Facilities)	850
High School School Permanent and Portable Classrooms	3,825
Overall Total Permanent Facilities Capacity	11,049
Overall Total Interim (Portable) Facilities	1,631
Overall Total Permanent and Interim Facilities	12,680

Source: Central Kitsap School District, 2015; BERK, 2015.

Bremerton School District

The Bremerton School District (BSD) is located on the Kitsap Peninsula between Port Orchard Bay, Dyes Inlet, and Sinclair Inlet. The district is adjacent to the Puget Sound Naval Shipyard, and its enrollment is directly related to the military base. The school district serves the City of Bremerton and unincorporated areas adjacent to the city.

BSD comprises six elementary schools, one middle school, one traditional high school, and one alternative high school. The district also administers a vocational skills center that serves other school districts. The current grade configuration in the district is based on grades K–5, elementary; grades 6–8, middle school; and grades 9–12, high school. Exhibit 4-67 lists the schools of Bremerton School District and their enrollment capacity.

Exhibit 4-67. Bremerton School District Inventory

Schools	Current Enrollment Capacity
<i>Elementary Schools</i>	
Armin Jahr	481
Crownhill	528
Kitsap Lake	528
Naval Avenue Early Learning Center	484
View Ridge	528
West Hills S.T.E.M. Academy (K-8)	528
Total Elementary Permanent Facilities	3,077
Total Elementary Interim (Portable) Facilities	840
Total Elementary Permanent and Interim Facilities	3,917
<i>Middle Schools</i>	
Mountain View Middle School (7-8)	1,274
Total Middle School Permanent Facilities	1,274
Total Middle School Interim (Portable Facilities)	120
Middle School School Permanent and Portable Classrooms	1,394
<i>High Schools</i>	
Bremerton High School	1,671
Renaissance High School	136
West Sound Technical Skills Center	515
Total High School Permanent Facilities	2,322
Total High School Interim (Portable Facilities)	120
High School School Permanent and Portable Classrooms	2,442
Overall Total Permanent Facilities Capacity	6,673
Overall Total Interim (Portable) Facilities	1,080
Overall Total Permanent and Interim Facilities	7,753

Notes: The West Sound Technical Skill Center may include students that are enrolled at Bremerton High School and Renaissance High School.

Source: Bremerton School District No. 100-C Study and Survey, 2012; BERK, 2015.

The Bremerton School District has stated that their classrooms tend to be overcrowded at the listed capacity; therefore, they are often not used at capacity numbers. This should be taken into consideration for future capital planning. (Steedman, 2015)

South Kitsap School District

South Kitsap School District (SKSD) is located in the southern portion of Kitsap County. Pierce County and Mason County border the District to the south and west. To the north and east, the District is bordered by the Sinclair Inlet, Rich Passage, Colvos Passage, and Puget Sound. The district includes 10 elementary schools, three junior high schools, and one alternative and one comprehensive high school. The majority of the schools are located throughout the southern portion of unincorporated Kitsap County, while South Kitsap High School, Cedar Heights Junior High School, and Sidney Glen Elementary School are located within the Port Orchard city limits. The grade configuration is based on grades K–6, elementary; grades 7–9, junior high; and grades 10–12, senior high school. Exhibit 4-68 lists the schools of the South Kitsap School District and their enrollment capacity.

Exhibit 4-68. South Kitsap School District Inventory

Schools	Current Enrollment Capacity
<i>Elementary Schools</i>	
Burley-Glenwood	528
East Port Orchard	467
Hidden Creek	526
Manchester	441
Mullenix Ridge	480
Olalla	408
Orchard Heights	729
Sidney Glen	467
South Colby	216
Sunnyslope	417
Total Elementary Permanent Facilities	4,679
Total Elementary Interim (Portable) Facilities	456
Total Elementary Permanent and Interim Facilities	5,135
<i>Junior High Schools</i>	
Cedar Heights	605
John Sedgwick	839
Marcus Whitman	796
Total Middle School Permanent Facilities	2,240
Total Middle School Interim (Portable Facilities)	325
Middle School School Permanent and Portable Classrooms	2,565
<i>High Schools</i>	
South Kitsap	1,972
Alternative High School	174
Total High School Permanent Facilities	2,146
Total High School Interim (Portable Facilities)	850
High School School Permanent and Portable Classrooms	2,996
Overall Total Permanent Facilities Capacity	9,065
Overall Total Interim (Portable) Facilities	1,631
Overall Total Permanent and Interim Facilities	10,696

Source: Personal Communication with Tom O'Brien, Director of Facilities and Operations at South Kitsap School District, 2015; BERK, 2015.

Level of Service Analysis

An LOS capacity analysis was applied to each county school district based on a student-to-household ratio that was developed by comparing the enrollment numbers from the Washington State Office of Superintendent of Public Instruction (OSPI) to household estimates by school district. The results, expressed as the number of students a school is able to accommodate based on the enrollment capacity inventories above, are shown below. Where numbers are positive, a school district is projected to have a net reserve of school capacity. Where numbers are negative, a school district is projected to have a deficit of school capacity.

The school analysis in this CFP is conservatively high by assuming that total growth estimated in 2021 and 2036 occurs all at the same time. However, depending on the timing of the development in the planning period and the total amount of growth, districts with strained capacity may need to split attendance boundaries, add portables, or ultimately develop new schools.

Enrollment Projections

Enrollment data is measured by OSPI, which conducts student counts in October and May of each school year. The current enrollment levels presented in this section reflect the May 2015 student count for each district.

Future enrollment projections are complex, and there are many possible approaches for estimating student growth. This analysis strives to provide a consistent planning effort across all four districts by using the same base data for each (OSPI's student count and OFM's small area estimates of occupied housing units based on the 2012 Small Area Estimates) and a standard land capacity methodology to project households by district for 2021 and 2036. It is recognized that the CFP estimates are conservative, and that the Districts have a refined approach for determining future enrollment and space needs, which they generally revisit every six years.

This CFP analysis bases future enrollment levels on a student-per-household ratio using the number of households projected from the land capacity analysis described in Section 1.2. The net change in household growth for each alternative was added to the 2012 base household number from OFM's small area estimates. The student-per household ratios were developed as follows:

- Three of the districts, SKSD, NKSD, and BSD developed their own student generation rates for use in their capital facility plans. These estimates were incorporated into this analysis and applied to the projected growth in households, separating out multifamily (MF) and single-family (SF) dwelling unit growth. Estimates of future enrollment may differ from those used in these Districts' CFPs since the projected growth in households is different from those based on this land capacity analysis.
- For CKSD, which did not include their own student-per-household generation assumptions in their adopted CFPs, this analysis assumes that the current student-per-household ratio observed in the district will continue going forward.

North Kitsap School District

NKSD is currently meeting its LOS standard through the use of permanent facilities. However, with an increase in households expected over the planning period, the District is not expected to meet its LOS in 2021 or 2036, as shown in Exhibit 4-69.

In its CFP, NKSD has its own student generation rates based on the demographics in the district. The District uses the student generation rates to project future enrollment based on anticipated housing unit growth. Generation rates for NKSD are 0.52 students per single-family dwelling unit and 0.36 students per multi-family dwelling unit (NKSD CFP 2009).



Richard Gordon Elementary



North Kitsap High School

Central Kitsap School District

CKSD is currently meeting the LOS standard through the use of portables, which gives it a total available capacity that is greater than current enrollment. It is not meeting its standard through permanent facilities alone. With expected enrollment growth within the district, CKSD will have a deficit under the Preferred Alternative, even with the addition of portable capacity, as shown in Exhibit 4-70.



Central Kitsap High School

Exhibit 4-69. North Kitsap School District Level of Service Analysis – Student Capacity

Time Period	Student per SF Household Ratio	Student per MF Household Ratio	SF Households	MF Households	Total Enrollment	Permanent Capacity	Permanent Capacity Net Reserve or Deficit	Total Capacity	Total Capacity Net Reserve or Deficit
2015	0.52	0.36	15,890	4,934	6,137	6,465	328	8,440	2,303
2021 Preferred Alternative	0.52	0.36	17,464	5,472	11,051	6,465	(4,586)	8,440	(2,611)
2036 Preferred Alternative	0.52	0.36	22,053	5,573	13,474	6,465	(7,009)	8,440	(5,034)

Notes:

2015 Total Enrollment is from May 2015.

The 2015 SF Households and MF Households are 2012 household numbers.

Source: OSPI, 2015; OFM, 2015; BERK, 2015.

Exhibit 4-70. Central Kitsap School District Level of Service Analysis: Student Capacity

Time Period	Student per Household Ratio	Households	Total Enrollment	Permanent Capacity	Permanent Capacity Net Reserve or Deficit	Total Capacity	Total Capacity Net Reserve or Deficit
2015	0.46	27,081	11,108	11,049	(59)	12,680	1,572
2021 Preferred Alternative	0.46	29,285	13,471	11,049	(2,422)	12,680	(791)
2036 Preferred Alternative	0.46	35,124	16,157	11,049	(5,108)	12,680	(3,477)

Notes:

2015 Total Enrollment is from May 2015.

The 2015 SF Households and MF Households are 2012 household numbers.

Source: OSPI, 2015; OFM, 2015; BERK, 2015.

Bremerton School District



Bremerton High School
Graduation 2015

BSD is currently meeting its LOS standard through the use of permanent facilities. However, with an increase in households expected over the planning period, the District is not expected to meet its LOS, as shown in Exhibit 4-71. In 2021, BSD will see a surplus if temporary capacity is considered and a deficit with permanent capacity. With permanent or temporary capacity there would be a deficit by 2036, and the District does not have adequate portable facilities to serve total enrollment under the Preferred Alternative.

South Kitsap School District

SKSD is currently meeting the LOS standard through the use of portables, which gives it a total available capacity greater than current enrollment. It is not meeting its standard through permanent facilities alone.

In its CFP, SKSD has its own student generation rates based on the demographics within the district. The district uses the student generation rates to project future enrollment based on anticipated housing unit growth. Generation rates for SKSD are 0.52 students per single-family dwelling unit and 0.32 students per multifamily dwelling unit (South Kitsap School District CFP, 2014-19).

Exhibit 4-72 shows the estimated level of service under the Preferred Alternative. If growth in households occurs as predicted with the land capacity analysis, SKSD would need to increase capacity to meet its LOS standard.



Students at a Festival



Orchestra Students

Exhibit 4-71. Bremerton School District Level of Service Analysis: Student Capacity

Time Period	Student per SF Household Ratio	Student per MF Household Ratio	SF Households	MF Households	Total Enrollment	Permanent Capacity	Permanent Capacity Net Reserve or Deficit	Total Capacity	Total Capacity Net Reserve or Deficit
2015	0.37	0.22	13,801	7,821	5,111	6,673	1,562	7,753	2,642
2021 Preferred Alternative	0.37	0.22	15,081	8,642	7,481	6,673	(808)	7,753	272
2036 Preferred Alternative	0.37	0.22	17,462	10,799	8,837	6,673	(2,164)	7,753	(1,084)

Notes:

2015 Total Enrollment is from May 2015.

The 2015 SF Households and MF Households are 2012 households.

Source: OSPI, 2015; OFM, 2015; BERK, 2015.

Exhibit 4-72. South Kitsap School District Level of Service Analysis: Student Capacity

Time Period	Student per SF Household Ratio	Student per MF Household Ratio	SF Households	MF Households	Total Enrollment	Permanent Capacity	Permanent Capacity Net Reserve or Deficit	Total Capacity	Total Capacity Net Reserve or Deficit
2015	0.52	0.36	20,208	6,994	9,628	9,065	(563)	10,696	1,068
2021 Preferred Alternative	0.52	0.36	22,238	7,667	14,324	9,065	(5,259)	10,696	(3,628)
2036 Preferred Alternative	0.52	0.36	29,422	7,268	17,916	9,065	(8,851)	10,696	(7,220)

Notes:

2015 Total Enrollment is from May 2015.

The 2015 SF Households and MF Households are 2012 households.

Source: OSPI, 2015; OFM, 2015; BERK, 2015.

Capital Projects and Funding

North Kitsap School District

Exhibit 4-73 shows North Kitsap School District capital projects planned for 2016 through 2036.

Exhibit 4-73. North Kitsap School District Capital Projects (All numbers are in 2012 \$1000s)

Category/ Project Description	Revenue Sources	Cost 2016- 2018	Cost 2019- 2021	Cost 2022- 2036	Total Cost
Category I: Capacity Increasing Projects					
None					
Category II: Capital Replacement, Maintenance and Operations					
Renovation of Breidablik Elementary	Bond, State Match, Impact Fees	2,750			2,750
Renovation of Wolfle Elementary	Bond, State Match, Impact Fees		5,000		5,000
Renovation of Building One: Kingston Middle School	Bond, State Match, Impact Fees		14,500		14,500
Renovation of Building Two: Poulsbo Middle School	Bond, State Match, Impact Fees		8,000		8,000
Renovation of Voc Tech Building at North Kitsap HS	Bond, State Match, Impact Fees		7,500		7,500

Source: North Kitsap School District, 2012; BERK, 2015.

Exhibit 4-74 and Exhibit 4-75 show North Kitsap School District Capital Project costs and revenues from 2016 through 2036, respectively.

Exhibit 4-74. North Kitsap School District Capital Projects (All numbers are in 2012 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	0	0	0
Category II (Other Projects Needed for Maintenance and Operations)	37,750	TBD	37,750
Total	37,750	TBD	37,750

Source: North Kitsap School District, 2012; BERK, 2015.

Exhibit 4-75. North Kitsap School District Capital Project Revenues (All numbers are in 2012 \$1000s)

Revenue Source	Revenue Years 2016-2021	Revenue Years 2022-2036	Total Revenue
Bond	27,136	TBD	27,136
State Match	12150	TBD	12,150
Impact Fees	1216	TBD	1,216
Total	40,502	TBD	40,502

Source: North Kitsap School District, 2012; BERK, 2015.

Central Kitsap School District

Exhibit 4-76 shows Central Kitsap School District capital projects planned for 2016 through 2036.

Exhibit 4-76. Central Kitsap School District Capital Projects (All numbers are in 2012 \$1000s)

Category/ Project Description	Revenue Sources	Cost 2016-2018	Cost 2019- 2021	Cost 2022- 2036	Total Cost
Category I: Capacity Increasing Projects					
Central Kitsap Junior High Replacement	Capital Project Levy; OSPI Matching		56,935		56,935
Category II: Capital Replacement, Maintenance and Operations					
Transportation/Warehouse/Food Service Consolidation	Capital Project Levy; OSPI Matching; Federal Heavy Impact Funds	5,719			5,719
Silverdale Elementary Renovation	Capital Project Levy; OSPI Matching; Federal Heavy Impact Funds	9,399			9,399
Cottonwood Elementary Miscellaneous Repairs	Capital Project Levy; Federal Heavy Impact Funds	66			66
Miscellaneous Repairs and Upgrades	Capital Projects Levy; Federal Heavy Impact Funds	5,375			5,375
Brownsville Elementary Miscellaneous Repairs	Capital Projects Levy	398			398
Silverdale Stadium Turf Replacement and Other Upgrades	Federal Heavy Impact Funds; Capital Projects Levy	91			91
Ridgetop Junior High Miscellaneous Repairs	Capital Projects Levy	292			292
Esquire Hills Elementary Miscellaneous Repairs	Capital Projects Levy	2			2
Pine Crest Elementary Miscellaneous Repairs	Capital Projects Levy	108			108
Woodlands Elementary Miscellaneous Repairs	Federal Heavy Impact Funds	444			444
Klahowya Secondary Miscellaneous Repairs	Capital Projects Levy	321			321
Olympic High Miscellaneous Repairs	Federal Heavy Impact Funds; Capital Projects Levy	745			745
Silver Ridge Elementary Miscellaneous Repairs	Capital Projects Levy	529			529
Maintenance Facilities Miscellaneous Repairs	Capital Projects Levy	835			835

Source: Central Kitsap School District, 2012; BERK, 2015.

Exhibit 4-77 and Exhibit 4-78 show Central Kitsap School District planned capital project costs and revenues for 2016 through 2036, respectively.

**Exhibit 4-77. Central Kitsap School District Capital Project Costs
(All numbers are in 2012 \$1000s)**

Category Summary	Cost Years 2016- 2021	Cost Years 2022- 2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	56,935	TBD	56,935
Category II (Other Projects Needed for Maintenance and Operations)	24,324	TBD	24,324
Total	81,259	TBD	81,259

Source: Central Kitsap School District, 2012; BERK, 2015.

Exhibit 4-78. Central Kitsap School District Capital Project Revenues
(All numbers are in 2012 \$1000s)

Revenue Source	Revenue	Revenue	Total Revenue
	Years 2016-2021	Years 2022-2036	
Capital Projects Levy	58,312	TBD	58,312
Federal Heavy Impact Funds	4,378	TBD	4,378
OSPI Matching	18,570	TBD	18,570
Total	81,260	TBD	81,260

Source: Central Kitsap School District, 2012; BERK, 2015.

Bremerton School District

Exhibit 4-79 shows Bremerton School District capital projects planned for 2016 through 2036. The project list includes one capacity project, West Hills STEM Capacity Analysis, paid for with state funding assistance and bonds. The table also lists non capacity-increasing projects that include capital maintenance and replacement. The Bremerton School District future plans include approximate cost but do not specify the years for planned projects other than a range of 10-15 years from the date of the 2012 study. This CFP assumes these projects will all occur by 2036.

Exhibit 4-79. Bremerton School District Capital Projects (All numbers are in 2015 \$1000s)

Category / Project Description	Revenue Sources	Total Cost
Category I (Capacity Projects Required to Meet LOS)		
West Hills STEM Capacity Expansion	State Funding Assistance, Bonds	4,000
Category II (Non-Capacity Projects Needed for Maintenance and Operations)		
Kitsap Lake Re-Roof	Bonds	600
Crown Hill Re-Roof	Bonds	600
View Ridge Re-Roof	Bonds	600
Administration Building Re-Roof	Bonds	500
Memorial Stadium Restroom/Concessions	Bonds	400
Upgrade Fire Alarm Panels multiple sites	State Funding Assistance, Bonds	500
Update Student Technology	Bonds	500
Replace telephone system	Bonds	900
Add Surveillance cameras	Bonds	300
Demolish old East High building except for gyms	Bonds	100
Fix parking and traffic	Bonds	1,200
Upgrade sports fields at MVMS, Memorial Stadium, and old East High site	Bonds	1,200
Add fire sprinklers to the Admin Building	Bonds	-

Source: Bremerton School District No. 100-C Study and Survey, 2012; BERK, 2015; OSPI School Construction Assistance, 2015.

Exhibit 4-80 and Exhibit 4-81 shows the Bremerton School District capital project costs and revenues, respectively.

Exhibit 4-80. Bremerton School District Capital Project Costs (All numbers are in 2015 \$1000s)

Category Summary	2016 - 2018	2019 - 2021	2020 - 2036	Total
Category I (Capacity Projects Required to Meet LOS)	N/A	N/A	N/A	4,000
Category II (Other Projects Needed for Maintenance and Operations)	N/A	N/A	N/A	7,400
TOTAL	N/A	N/A	N/A	11,400

Source: Bremerton School District No. 100-C Study and Survey, 2012; BERK, 2015; OSPI School Construction Assistance, 2015.

**Exhibit 4-81. Bremerton School District Capital Project Revenues
(All numbers are in 2015 \$1000s)**

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
State Funding Assistance, Bonds			4,500
Bonds			6,900
Total			11,400

Source: Bremerton School District No. 100-C Study and Survey, 2012; BERK, 2015; OSPI School Construction Assistance, 2015.

South Kitsap School District

SKSD’s planned projects include two capacity-increasing projects: modular classrooms and a high school site purchase, which will increase capacity in the long term. SKSD plans to pay for these projects with impact fees.

The District plans to use capital maintenance funds to make improvements to existing facilities that include electrical upgrades, fire alarm system replacements, BG plumbing replacement, CH roofing facial/ beam repairs, BG gym wall replacement, parking lot/ asphalt repairs, asbestos abatement, pool maintenance/ upgrades, school flooring projects, ADA access projects, hydraulic lift stations, admin roof replacement, skylight replacement/ repairs, seismic upgrades. Exhibit 4-82 shows the list of planned capital projects.

The South Kitsap School District has a 2015-20 Capital Facilities Plan, which provides additional information about capital projects.

Exhibit 4-82. South Kitsap School District Capital Projects (All numbers are in 2015 \$1000s)

Category/ Project Description	Revenue Sources	Cost	Cost	Cost	Total Cost
		2016-2018	2019-2021	2022-2036	
Category I: Capacity Increasing Projects					
Modular Classrooms	Impact Fees	300	305	TBD	605
High School Site Purchase	Impact Fees	879	884	293	2,053
Category II: Capital Replacement, Maintenance and Operations					
Electrical Upgrades	Capital Maint Funds	750	750		1,500
Fire Alarm System Replacements	Capital Maint Funds	225	225		500
BG Plumbing Replacement	Capital Maint Funds	200	0		200
CH Roofing Facia/Beam Repairs	Capital Maint Funds	75	75		150
BG Gym Wall Replacement	Capital Maint Funds	50	0		50
Parking Lot/Asphalt Repairs	Capital Maint Funds	350	350		700
Asbestos Abatement	Capital Maint Funds	50	50		100
Pool Maintenance/Upgrades	Capital Maint Funds	0	500		500
School Flooring Projects	Capital Maint Funds	750	0		750
ADA Access Projects	Capital Maint Funds	250	0		250
Hydraulic Lift Stations	Capital Maint Funds	0	150		150
Admin Roof Replacement	Capital Maint Funds	0	500		500
Skylight Replacement/Repairs	Capital Maint Funds	100	0		100
Seismic Upgrades	Capital Maint Funds	0	150		150

Source: Personal Communication with Tom O'Brien, Director of Facilities and Operations for South Kitsap School District, 2015; BERK, 2015.

Exhibit 4-83 shows costs for South Kitsap School District planned capital projects for 2016 through 2036, and Exhibit 4-84 shows revenues for planned capital projects in the same time period.

**Exhibit 4-83. South Kitsap School District Capital Projects Costs
(All numbers are in 2015 \$1000s)**

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)	TBD	TBD	TBD
Category II (Other Projects Needed for Maintenance and Operations)	7,500	18,500	26,000
Total	7,500	18,500	26,000

Source: Personal Communication with Tom O'Brien, Director of Facilities and Operations for South Kitsap School District, 2015; BERK, 2015.

**Exhibit 4-84. South Kitsap School District Capital Project Revenues
(All numbers are in 2015 \$1000s)**

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Impact Fees	2,368	293	2,661
Capital Maintenance Funds	5,550	TBD	5,550
Total	7,918	293	8,211

Source: Personal Communication with Tom O'Brien, Director of Facilities and Operations for South Kitsap School District, 2015; BERK, 2015.

4.6 Solid Waste



Overview

Washington State law (RCW 70.95) requires counties to plan an integrated solid waste management system that emphasizes waste reduction and recycling. Chapter 70.105 RCW requires local governments to develop plans for managing moderate risk waste, which includes hazardous wastes produced by households, businesses, and other entities in small quantities. Kitsap County Public Works/Solid Waste Division is the lead planning agency for solid waste management in Kitsap County.

In 2011, Kitsap County adopted its Comprehensive Solid and Hazardous Waste Management Plan, entitled *Waste Wise Communities: The Future of Solid and Hazardous Waste Management in Kitsap County* (Kitsap County 2011). This Plan and personal communication with Kitsap County Public Works/Solid Waste Division staff are the sources for this analysis.

The Plan specifies the management actions that will be taken over a six-year (detailed) and 20-year (general) time period. The plan is developed with participation from the cities, tribes, and the Navy, as well as a solid waste advisory committee. Through this planning process, counties are encouraged to allow private industry to provide services as much as possible (RCW 70.95.020). The Kitsap County solid waste system is a combination of private companies and public agencies. Components of an integrated solid waste management program are:

- System planning, administration, and enforcement
- Collection, transfer, and disposal of solid waste
- Collection and processing of recyclables
- Moderate risk waste transfer and collection programs



Olympic View Transfer Station



Silverdale RAGF

Inventory of Current Facilities

Exhibit 4-85 shows the current inventory of solid waste facilities in Kitsap County, which are owned and operated by a variety of entities.

Exhibit 4-85. Current Facilities Inventory – Solid Waste

Name	Owner	Operator	Location
<i>Solid Waste Disposal</i>			
Olympic View Transfer Station (OVTS)	Kitsap County Public Works (KCPW)	Waste Management Washington, Inc. (WMWI)	City of Bremerton
Olalla Recycling and Garbage Facility (RAGF)	KCPW	Contractor Operated	South Kitsap
Hansville RAGF	KCPW	KCPW	North Kitsap
Silverdale RAGF	KCPW	Contractor Operated	Central Kitsap
Bainbridge Island Transfer Station	Bainbridge Disposal	Bainbridge Disposal	City of Bainbridge Island
<i>Moderate Risk Waste Disposal</i>			
Household Hazardous Waste Collection Facility	KCPW	KCPW	City of Bremerton
<i>Residential Recyclables Collection</i>			
OVTS Recycling Area	KCPW	WMWI	City of Bremerton
Olalla RAGF	KCPW	Contractor Operated	South Kitsap
Hansville RAGF	KCPW	KCPW	North Kitsap
Silverdale RAGF	KCPW	Contractor Operated	Central Kitsap
Bainbridge Island Transfer Station	Bainbridge Disposal	Bainbridge Disposal	City of Bainbridge Island
Poulsbo Recycle Center	KCPW	KCPW	City of Poulsbo

Source: Keli McKay-Means, Projects and Operations Manager, Kitsap County Public Works Solid Waste Division, 2015.

Level of Service Capacity Analysis

The existing level of service for solid waste is calculated on estimated countywide population and the average per capita generation rates for solid waste and recycling. The rates used in this table were taken from Kitsap County’s Solid and Hazardous Waste Management Plan.

Exhibit 4-86. Level of Service Requirement Analysis – Kitsap County Solid Waste System

Time Period	Countywide Populations	SW Disposal Rate (lbs/ cap/ day)	SW Tons Disposed per Year	SW Recycling Rate (lbs/ cap/ day)	Recycled Tons per Year
2015	258,200	5	235,608	2	94,243
2021 Preferred Alternative	278,676	5	254,292	2	101,717
2036 Preferred Alternative	332,993	5	303,856	2	121,543

Source: Personal Communication with Keli McKay-Means, Projects and Operations Manager, Kitsap County Public Works Solid Waste Division, 2015; BERK, 2015.

The County is currently under contract with Waste Management, Inc. to operate the County’s Olympic View Transfer Station (OVTS) and send solid waste by rail to Waste Management’s Columbia Ridge Landfill. This contract expires in 2022. OVTS is designed for a maximum daily processing of 1,000 tons of waste, which exceeds the maximum projected volume of 800-900 tons per day in 2036. The landfill has capacity for 50 to 100 years and has additional acreage that could be permitted to increase its capacity further.

Planning at Kitsap County and Waste Management occurs on a yearly basis based on future projected needs. The County has adequate time to plan for 2036 levels of waste generation, and projected levels could be accommodated at OVTS and the current landfill site. Prior to the

expiration of the existing contract, the County will issue a Request for Proposals for qualified contractors to continue to maintain solid waste levels of service.

Capital Projects and Funding

Exhibit 4-87 shows the planned capital facilities projects from 2016 through 2021. The Kitsap County Public Works Solid Waste Division plans six years in advance.

Exhibit 4-87. Solid Waste Capital Facilities Projects 2016-2036 (All numbers are in 2015 \$1000s)

Category/ Project Description	Revenue Sources	Cost 2016-2018	Cost 2019-2021	Cost 2022-2036	Total Cost
Category I: Capacity Increasing Projects					
Silverdale Recycling and Garbage Facility Master Plan, Improvements	Tipping Fees	1,275			1,275
North-End Household Hazardous Waste Facility	Tipping Fees	300			300
Household Hazardous Waste Collection Facility Floor Repairs and	Tipping Fees	50			50
OVTS Improvements - Master Plan, Paving and Improvements,	Tipping Fees	2,225	500		2,725
Poulsbo Recycle Center Attendant's Booth (Temporary)	Tipping Fees	200			200
Category II: Capital Replacement, Maintenance and Operations					
Hansville Landfill Closure Operations	Hansville Post-Closure Fund	195	195		390
Olalla Landfill Closure Operations	Olalla Post-Closure Fund	195	230		425

Source: Personal Communication with Keli McKay-Means, Projects and Operations Manager, Kitsap County Public Works Solid Waste Division, 2015; BERK, 2015.

Exhibit 4-88 shows the costs of the planned capital facilities 2016 through 2021, and Exhibit 4-89 shows the revenues for the planned capital facilities for that time period.

Exhibit 4-88. Solid Waste Capital Facilities Costs 2016-2036 (All numbers are in 2015 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Category I. (Capacity Projects Required to Meet LOS)			
Silverdale Recycling and Garbage Facility Master Plan, Improvements	1,275		1,275
North-End Household Hazardous Waste Facility	300		300
Household Hazardous Waste Collection Facility Floor Repairs and Improvements	50		50
OVTS Improvements - Master Plan, Paving and Improvements, Construction & Demolition	2,725		2,725
Poulsbo Recycle Center Attendant's Booth (Temporary)	200		200
Category II. (Other Projects Needed for Maintenance and Operations)			
Hansville Landfill Closure Operations	390		390
Olalla Landfill Closure Operations	425		425

Source: Personal Communication with Keli McKay-Means, Projects and Operations Manager, Kitsap County Public Works Solid Waste Division, 2015; BERK, 2015.

Exhibit 4-89. Solid Waste Capital Facilities Revenues 2016-2036 (All numbers are in 2015 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Tipping Fees	4,550		4,550
Hansville Landfill Post-Closure Fund	390		390
Olalla Landfill Post-Closure Fund	425		425
Total	5,365		5,365

Source: Personal Communication with Keli McKay-Means, Projects and Operations Manager, Kitsap County Public Works Solid Waste Division, 2015; BERK, 2015.



Hansville Landfill

4.7 Stormwater

Kitsap County has three types of drainage facilities:

- Conveyance network
- Runoff quantity and flow-control facilities
- Stormwater quality treatment systems

The drainage infrastructure is guided by topography and flows, without consideration to property ownership, land use, or political boundaries. The conveyance network includes all natural (streams and swales) and constructed open channels (swales and ditches), as well as piped drainage systems (including catch basins and conveyance structures) and culverts. These systems may be located on private property or within the County right-of-way.

Quantity and flow-control facilities include infiltration facilities, retention and detention ponds, tanks, vaults, and bioretention systems. The purpose of these facilities is to reduce the rate of stormwater flow from a specific site or area to reduce the potential for localized flooding, minimize flow damage to natural water courses, and prevent downstream erosion problems. These facilities are designed to hold a volume of runoff based on the amount of impervious area and a specific design storm event. Quality and flow-control facilities can be located on either public or private property, depending upon the area being served. See Exhibit 4-90.

Stormwater quality enhancement facilities include water-quality (wet) ponds, biofiltration swales, infiltration facilities, and bioretention systems. The purpose of these facilities is to remove a certain type and/or amount of pollutant from the runoff before it is discharged into a water body or collection system or dispersed over the ground for infiltration. These facilities may be located on public or private property depending upon the area being served. See Exhibit 4-90.

Permit conditions may apply to development activities taking place within Kitsap County, for compliance with minimum requirements of the Kitsap County Stormwater Management Ordinance. Drainage control and water quality enhancement facilities constructed for large residential projects are dedicated to Kitsap County Stormwater Division for maintenance. Facilities constructed for commercial and multifamily developments are maintained privately.

Exhibit 4-90 Current Stormwater Facilities Inventory

Type of System	Quantity
Detention Pond	259
Detention Tank or Vault	74
Retention Pond	71
Water Quality Wet-Pond	34
Biofiltration Sw ale	139
Bioretention Facility	6
Infiltration Basin	112
Infiltration Trench	31
Underground Water Quality Filter	7
Tidegate	13
Hydro-Dynamic WQ Treatment Device	25
Tree-Box Filter	??
Total Facilities	771

Source: Kitsap County Stormwater Division 2015.

Level of Service Capacity Analysis

The Kitsap County Stormwater Division has maintenance responsibility for more than 615 stormwater retention/detention and runoff quality enhancement facilities. More than 55 newly constructed and private residential facilities are expected to be included in the Stormwater Division Inspection and Maintenance Programs within the next two years. Approximately 43% of the 2016 Stormwater Division Program budget is slated for inspection, maintenance, and retrofitting of County stormwater facilities.

The goals and objectives of the County’s Stormwater Program reflect the level of service (LOS) for stormwater management facilities. The Stormwater Capital Improvement Program, adoption of the Kitsap County Stormwater Management Ordinance, and watershed planning activities undertaken by the Department of Community Development all contribute to the public's level of service expectations.

Current Level of Service

The current level of service complies with a 2007 National Pollution Discharge Elimination System permit. Land development activities requiring land use approval from Kitsap County are conditioned to meet the water quality, runoff control, and erosion control requirements of Kitsap County’s Stormwater Design Manual, which was adopted by the Board of Commissioners, amended in August of 2009, and implemented in February of 2010.

The Kitsap County Stormwater Design Manual requires development projects to provide water quality enhancement for 91% of the runoff volume generated at the project site. When discharging to streams or open channels, runoff rates from development sites are required to be controlled to meet stream bank erosion control standards. These standards require that post-developed peak flow runoff rates do not exceed pre-developed rates for all stormwater flows ranging from 50% of the two-year flow through the 50-year flow as predicted by the Western Washington Hydrology Model. Alternative design criteria are pending by December 2013 based on the National Pollution Discharge Elimination System permit for Western Washington Phase II, issued by the Department of Ecology in 2013.

Capital Projects and Funding

The Stormwater Capital Improvement Program focuses on correction of drainage problems that are not likely to be financed by the County's road fund. The objective of the program element is to secure enough funding to construct projects that address identified water quality problems, publicly owned fish passage barriers, and serious flooding problems located beyond County rights-of-way.

The County's stormwater facilities include 15 capital projects in the six-year planning period at a cost of \$15.5 million. See Exhibit 4-91.

New development in the 2022-2036 period will meet LOS criteria through compliance with applicable regulatory criteria. Other stormwater capital projects in the 2022-2036 period may include regional retrofits or restoration projects designed to address historical problems. The specific schedule, costs, and revenue sources for these 2022-2036 projects will be identified through future six-year CIP planning processes.

Exhibit 4-91. Kitsap County Stormwater Capital Projects 2016-2036 (All numbers are in 2015 \$1000s)

Category / Project Description	Revenue Sources	Cost Years 2016-2018	Cost Years 2019-2021	Cost Years 2022-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)					
<p>Dickerson Creek Culvert Replacement & Floodplain Restoration Project (97003093)</p> <p>This project replaces two fish-passage barrier culverts (Taylor & David Roads) on Dickerson Creek and restores floodplain function in this critical salmon stream system (both Dickerson & Chico Mainstem). Property Purchases Completed in 2012. Design & Permitting Completed in 2014. Construction scheduled for 2015-16. Phase I (David Road) completed in 2015. Phase II (Taylor Road) to be constructed in 2016.</p>	Grant Storm + Roads	\$500 \$300			\$800
<p>Clear Creek Culvert Floodplain Restoration & Culvert Removal Project (97003096)</p> <p>This project replaces two fish-passage barrier culverts and removes a section of Schold Road to restore floodplain function on lower Clear Creek. Design & Permitting Completed in 2013-15. Construction scheduled for 2016.</p>	Grant Storm + Roads	\$2,000 \$600			\$2,600
<p>Manchester Stormwater Treatment & Outfall Replacement (97003107)</p> <p>This project is partially funded by an Ecology Stormwater Grant. The project will design and construct a new stormwater outfall for Manchester, provide water quality treatment for runoff draining to that outfall in the form of a multi-use stormwater park, add GSI components [Green Stormwater Infrastructure] to Manchester residential streets, and provide transportation (road and pedestrian) improvements in the Colchester-Main commercial center of Manchester. Stormwater Division is the lead for Public Works. Property purchase completed in 2013. Design and Permitting completed in 2014. Phase I construction completed in 2014-15 & Phase II completed in 2015. Phase III construction scheduled for 2016.</p>	Storm + Roads	\$200			\$200
<p>Illahee Regional Stormwater Retrofit Project (97003088)</p> <p>This project will design and construct a regional stormwater facility (Water Quality & Flow-Control) in the Illahee Creek headwaters sub-watershed. Design & Permitting in 2014-16. Construction scheduled for 2017-19.</p>	Storm	\$750	\$750		\$1,500
<p>Silverdale Way Regional Stormwater Treatment & Flow-Control Facility (97003137)</p> <p>This project will design and construct a regional stormwater facility (Water Quality & Flow-Control) in the Clear Creek Ridgetop-Silverdale Way headwaters sub-watershed. Property purchased and grant funding obtained in 2015. Design is underway. Tentative construction in 2017-18.</p>	Grant	\$1,000			\$1,000
<p>Koch Creek Regional Stormwater Treatment & Flow-Control Facility (97003127)</p> <p>This project will design and construct multiple stormwater facilities (Water Quality & Flow-Control) in the Koch Creek headwaters sub-watershed. The project will also include GSS components. Design & Permitting in 2016-17 and construction scheduled for 2018-19.</p>	Storm	\$720	\$255		\$975

Category / Project Description	Revenue Sources	Cost Years 2016-2018	Cost Years 2019-2021	Cost Years 2022-2036	Total Cost
Ridgetop Blvd Green Street Retrofit (97003121) This project will retrofit Ridgetop Boulevard as a Green Street. The project will also add pedestrian safety features, bike lanes, and traffic safety improvements. Design and permitting will be completed in 2015-16. The project will be constructed in multiple phases in 2017-20.	Grant + Loan Storm + Roads	\$595 \$215	\$1,680		\$2,490
Silverdale Way Green Street (97003118) This project is a joint Roads-Stormwater project to add WQ treatment to Silverdale Way between Byron Street and Bucklin Hill Road. This is a multi-year, phased project.	Storm + Roads	\$145	\$500		\$645
Category II (Non-Capacity Projects Needed for Maintenance and Operations)					
Old Town Silverdale (Bayshore & Washington) Water Quality Treatment Project (97003118) This is a joint Sewer-Stormwater project to replace aging infrastructure and add WQ treatment in the form of tree-box filters. Design & Permitting to be completed in 2015. Construction scheduled for 2018.	Grant Storm + Roads + Sewer	\$275 \$85			\$360
Keyport Water Quality Treatment Project (97003130) This is a joint Sewer-Stormwater project to replace aging infrastructure and add WQ treatment in the form of bioretention & permeable pavers. Design & Permitting to be completed in 2015. Construction scheduled for 2016.	Grant Storm + Roads + Sewer	\$250 \$250			\$500
Silverdale Duwe'iq Stormwater Water Quality Treatment Facility (97003081) This project will design and construct a stormwater treatment facility (water quality) and restore wetlands in lower Clear Creek. The project will treat runoff from existing development along Silverdale Way. Property purchase completed in 2013. Design & Permitting completed in 2014. Construction scheduled for 2016-17.	Grant	\$950			\$950
Strawberry Creek Culvert Replacement - Silverdale Loop Road (97003102) This project replaces a fish-passage barrier culvert on Strawberry Creek at Silverdale Loop Road. Design & Permitting underway. Construction scheduled for 2019.	Storm	\$50	\$950		\$1,000
Kingston Regional Stormwater Facility (97003138) This project involves water quality retrofit of existing development in Kingston. Feasibility and Preliminary Design Underway. Design and Construction will depend on grant funding.	Storm + Roads	\$25	\$975		\$1,000
Duncan Creek Fish Passage Improvements (97003110) This project replaces a fish-passage barrier culvert on Duncan Creek at Colchester. The project also addresses failing infrastructure and local flooding. Only preliminary design and modeling are scheduled at this time.	Storm	\$45			\$45

Category / Project Description	Revenue Sources	Cost Years 2016-2018	Cost Years 2019-2021	Cost Years 2022-2036	Total Cost
Silverdale Water Quality Treatment Projects - Mickleberry, Myhre, & Blaine (97003135) This project involves water quality retrofit of existing development in Silverdale. Preliminary design underway. Design and Construction will depend in grant funding.	Storm	\$45	\$1,390		\$1,435
Wildcat Tributary Culvert Replacements (97003132)	TBD			TBD	TBD
Blackjack Tributary Culvert Replacements (97003133)	TBD			TBD	TBD
Thomas Creek Culvert Replacement (97003111)	TBD			TBD	TBD
Indianola - Indianola Road Green Street Project (97003129)	TBD			TBD	TBD
Suquamish - Brockton Green Street Project (97003074)	TBD			TBD	TBD
Manchester - Alaska Green Street Project (97003119)	TBD			TBD	TBD
Manchester - California Green Street Project (97003120)	TBD			TBD	TBD
Kingston - Bannister Green Street Project (97003123)	TBD			TBD	TBD
Kingston - Eastside Green Street Project (97003124)	TBD			TBD	TBD
Kingston - Main Street WQ Treatment Project (97003125)	TBD			TBD	TBD
Beach Drive Stormwater WQ Treatment Project (97003134)	TBD			TBD	TBD

Source: Kitsap County Public Works Stormwater Division, BHC 2015

Costs and revenues for Kitsap County stormwater capital projects for the 2016-2036 time period are shown in Exhibit 4-92 and Exhibit 4-93, respectively.

Exhibit 4-92. Kitsap County Stormwater Capital Project Costs, 2016-2036
(All numbers are in 2015 \$1000s)

Category Summary	Cost 2016-2021	Cost 2022-2036	Total Cost
Capacity	\$10,210	TBD	\$10,210
Non-Capacity*	\$5,290	TBD	\$5,290
Sum	\$15,500	TBD	\$15,500

*Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency
Source: Kitsap County Public Works Stormwater Division, BHC 2015

Exhibit 4-93. Kitsap County Stormwater Capital Project Revenues, 2016-2036
(All numbers are in 2015 \$1000s)

Revenue Source	Revenues 2016-2021	Revenues 2022-2036	Total Cost
Potential State Grants & Loans	\$7,250	TBD	\$7,250
Utility Fees	\$8,250	TBD	\$8,250
Sum	\$15,500	TBD	\$15,500

Source: Kitsap County Public Works Stormwater Division, BHC 2015

4.8 Transportation

-This section addresses motorized and non-motorized modes of travel. The section provides an inventory of existing facilities, an analysis of levels of service, a six-year transportation improvement program and a 20-year project list describing improvements and costs. Detailed revenue sources are provided for the six-year program. Long-range revenue projections and alternative sources are addressed in Chapter 3.

Inventory

Roads

Exhibit 4-94 summarizes the existing miles of county arterial roadways by federal functional classification. The majority of roads in Kitsap County are local streets.

Exhibit 4-94. Existing County-Owned Roadway Mileage by Functional Classification within Kitsap County

Functional Classification	Total Miles of Roadway	Percentage of Total
Urban Principal Arterial	9.85	1.1%
Urban Minor Arterial	95.15	10.2%
Urban Collector	48.04	5.1%
Rural Minor Arterial	18.37	2.0%
Rural Major Collector	94.13	10.1%
Rural Minor Collector	51.25	5.5%
Local	614.12	66.0%
Total	930.91	100.0%

Source: Kitsap County Public Works Department, 2015a.

Pedestrian Facilities

Pedestrian facilities are an integral part of the transportation system. For some citizens, particularly elderly residents and children, walking is the primary mode of travel. It is also a key link to transit service and between land uses in urban areas. In general, sidewalks are present in the urbanized areas of Silverdale and Kingston and along many urban arterials. Roadways in rural areas generally do not have sidewalks, but many have shoulders that can be used for non-motorized travel.

Bicycle Facilities

Exhibit 4-95 shows bicycle routes in Kitsap County. The Bicycle Facilities Plan strives to provide non-motorized transportation facilities for bicycle and mixed bicycle/pedestrian user groups. Recommended goals and policies related to non-motorized transportation facilities are outlined in the *Kitsap County Bicycle Facilities Plan* (Kitsap County Public Works Department, 2014).

Multi-Use Trails

For more than 20 years, the County has had planning programs for non-motorized modes, including several trail plans. Major trails within the county include the Clear Creek Trail in central Kitsap, the Hansville Greenway Trails in north Kitsap.

Level of Service Capacity Analysis

Level of service standards are used to evaluate the transportation impacts of long-term growth and to ensure concurrency. Jurisdictions must adopt standards by which the minimum acceptable roadway operating conditions are determined and deficiencies may be identified.

Kitsap County’s level of service policy generally recognizes that urban areas are likely to have more congestion than rural areas. This reflects the different characteristics of land use and transportation in these areas. For purposes of defining level of service standards, urban areas are the geographic areas located within a UGA boundary, and rural areas are the geographic areas located outside UGA boundaries.

In rural areas, the system of major roads must have sufficient access to the abutting land uses, but because of the low level of land development, rural roads have small capacity requirements. In contrast, urban areas typically attract and generate high volumes of traffic. In order to facilitate through traffic and minimize congestion, major roads may have limited access to adjacent land uses while the more minor roads serve as access points to the surrounding development. The increased density and activity in an urban area inherently results in higher levels of congestion. Drivers are aware of the differences in land use between urban and non-urban areas and generally are more tolerant of congestion and the associated lower level of service in urban areas than in rural areas.

The level of service standards shown in Exhibit 4-96 are based on the location and functional classification of the roadway facilities to which they apply. Kitsap County uses traditional engineering methodology to evaluate level of service of roadway segments, which are sections of roadway located between major intersections. Level of service is based on the Volume-to-Capacity ratio (V/C), which is calculated by dividing the traffic volume on a roadway by the roadway’s vehicle capacity.

Exhibit 4-96. County Roadway Level of Service Standards

Functional Classification	Maximum V/C Ratio/LOS Standard	
	Urban ¹	Rural ²
Principal Arterial	0.89/D	0.79/C
Minor Arterial	0.89/D	0.79/C
Collector	0.89/D	0.79/C
Minor Collector	0.89/D	0.79/C
Residential/Local	0.79/C	0.79/C

Source: Kitsap County Public Works Department, 2014.

¹ Urban area is located within UGA boundaries.

² Rural area is located outside UGA boundaries.

The Kitsap County Concurrency Ordinance, codified in KCC 20.04, establishes ~~a the~~ process for ~~testing-determining~~ whether a development project meets concurrency. Though the County’s goal is to have no LOS deficiencies, it is recognized that not all roadways will meet the standards all the time given the limits of county, state, and federal funding and timing of project improvements. Therefore, 15% of lanes miles tested for concurrency will be allowed to temporarily exceed LOS standards. This 15% allowance shall be applied at both the system wide and project site level. Generally, the 15% threshold for road concurrency is the County’s adopted strategy to ensure LOS standards are within an accepted range and is not an acknowledgement of an LOS deficiency. This 15% is evaluated on a county wide basis and includes both rural and

~~urban areas. As established by the ordinance, c~~Concurrence is satisfied if no more than 15% of county road lane-miles exceed LOS standards.

By adopting an area-wide standard, the County acknowledges the fact that not every roadway facility or link in the network will meet the adopted facility LOS standards all the time. Measures of area-wide concurrence are conducted periodically, such as during updates of the Comprehensive Plan, for sub-area planning, and when corridor studies are conducted.

The 15% allowance relates to individual development proposals undergoing a concurrence test. If LOS is equal to or better than the adopted standard, the concurrence test is passed, and an applicant is issued a Capacity Reservation Certificate. For purposes of concurrence determination, the analysis of LOS adequacy would only be applied to County arterials and collectors in rural areas and urban areas under the County’s jurisdiction. A Certificate of Concurrence is not issued to any proposed development if the standards in this section are not achieved and maintained within the six-year period allowed by GMA for transportation concurrence. The applicant has the option of accepting the denial of application; appealing the denial of application; or accepting a 90-day reservation period and, within this time, revising the development proposal to bring transportation within concurrence requirements.

~~The ordinance allows for the concurrence test to be applied on either a countywide or sub-area level, but does not define methods for defining the area of impact at the sub-area level. Consequently, the concurrence test is currently only applied at the countywide level.~~

Exhibit 4-97 summarizes the lane-miles of county roadway (classified as collector or above) that exceed standards under existing conditions (based on 2012 data). Approximately 2.2% of lane-miles of functionally classified roadways in Kitsap County currently exceed adopted segment LOS standards. This is well below the 15% concurrence threshold, and indicates that under the current concurrence management program, the system-wide concurrence test would be passed for a considerable level of additional development.

Exhibit 4-97. Existing Roadway Deficiencies on County Roadways

Region	Total Lane-Miles ^{1,2}	Number of Road Sections with Deficiencies ³	Lane-Miles of Deficient Segments ³	Percent of Deficient Lane-Miles	Concurrence Threshold
North	191.0	4	7.9	4.1%	15%
Central	221.3	6	3.4	1.5%	15%
South	263.0	2	3.6	1.4%	15%
Total	675.3	12	14.9	2.2%	15%

Source: Kitsap County Public Works Department, 2015b.

¹ Segments include all functionally classified roadways (principal arterials, minor arterials, and collectors).

² Lane-miles are calculated by multiplying the length of the roadway by the number of travel lanes on that roadway.

³ Deficient segments are those for which V/C ratio exceeds standards defined in Exhibit 4-96.

Exhibit 4-98 summarizes the lane-miles of deficient county roadway segments projected by 2036. Exhibit 4-98 shows that the percentage of deficient lane-miles would not exceed the County concurrence standard of 15%.

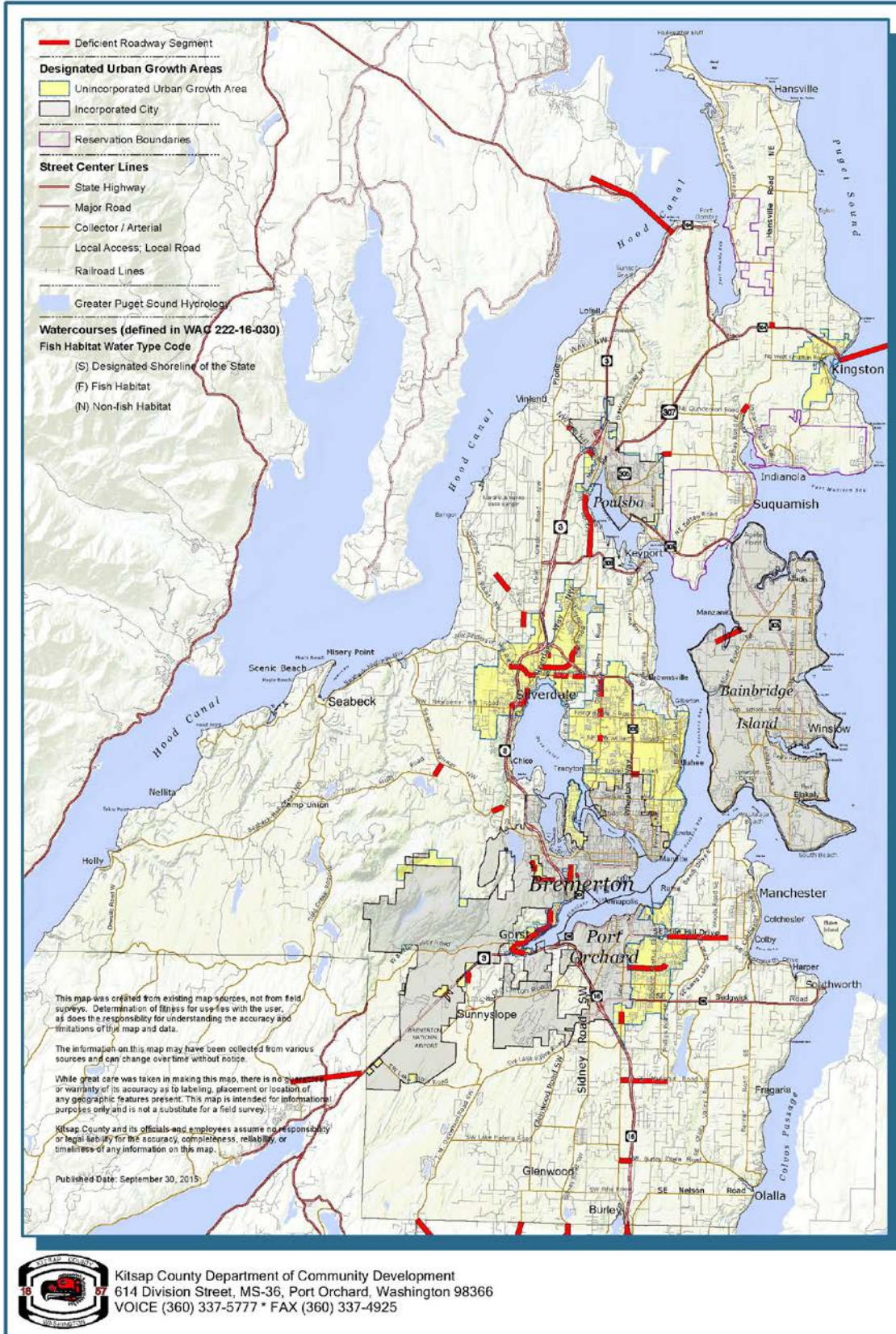
Exhibit 4-98. Projected 2036 Roadway Segment Deficiencies

	Preferred Alternative
North County	7.2 lane-miles
Central County	17.1 lane-miles
South County	13.5 lane-miles
Total Deficient Lane-Miles	37.8 lane-miles
Total 2036 County Roadway Lane-Miles	675.3 lane-miles
Percent of Deficient Lane-miles	5.6%
Exceeds Countywide Concurrency Standard of 15%	No

Source: Kitsap County Public Works Department, 2015b.

Locations of deficient segments are shown on Exhibit 4-99.

Exhibit 4-99. Projected 2036 Deficient Roadway Segments



Projected Deficient Roadway Segments

Source: Kitsap County Department of Community Development, 2015

Recommended Roadway Improvements

Exhibit 4-100 summarizes the roadway segments identified for improvement under the three alternatives in order to meet adopted County roadway segment LOS standards. The Preferred Alternative would have a need for 17 projects through the year 2036.

Exhibit 4-100. Locations of Recommended Roadway Improvements by 2036

Roadway	Location	Preferred Alt
North County		
Viking Way NW	SR 308 - Poulsbo City Limits	X
	Total # Improvement Locations – North County	1
Central County		
Anderson Hill Road NW	Apex Road NW – Bucklin Hill Road NW	X
Bucklin Hill Road NW	Anderson Hill Road NW – Silverdale Way NW	X
Central Valley Road NW	NW Fairgrounds Road – SR 303 On-Ramp	X
Kent Avenue W	Sherman Heights Road – 3rd Avenue	X
Newberry Hill Road NW	Provost Road NW - Silverdale Way NW	X
Riddell Road NE	SR 303 – Almira Drive NE	X
Ridgetop Boulevard NW	Silverdale Way NW – SR 303	X
Sherman Heights Road	Belfair Valley Road – Kent Avenue	X
Silverdale Way NW	NW Newberry Hill Road – NW Byron Street	X
	Total # Improvement Locations – Central County	9
South County		
Belfair Valley Road	Sam Christopherson Ave W – SR 3	X
Bethel Road SE	Cedar Road E – Ives Mill Road SE	X
Burley-Olalla Road	Bethel-Burley Road SE – SR 16	X
Lund Avenue	Madrona Drive SE – Cathie Avenue SE	X
Mile Hill Drive SE	Woods Road E – Whittier Avenue SE	X
Mullenix Road SE	Bethel-Burley Road SE – Phillips Road SE	X
Sunnyslope Road SW	SW Rhododendron Drive – SR 3	X
	Total # Improvement Locations – South County	7
Countywide Total Number of Improvement Locations		17

Source: Kitsap County Public Works Department, 2015b.

Capital Projects and Costs

Transportation facilities include improvements to capital facilities at various locations throughout the County at a cost of \$76.1 million, as listed in Kitsap County’s *Six Year Transportation Improvement Program – 2016 to 2021*. The Transportation Improvement Program is updated annually. The County will update this section periodically as appropriate. The proposed financing plan is shown on Exhibit 4-101. The table does not show transportation improvements that will be financed and constructed by private parties, for example, improvements that are conditions of a project approval.

Exhibit 4-101. Six Year Transportation Improvement Project Costs (All numbers are in 2015 \$1000s)

PRIORITY NO.	PROJECT IDENTIFICATION A. Federal Aid No. B. Road Log Number - Bridge Number C. Project / Road Name E. Beginning and End E. Description of Work	Funding Source Information					Cost by Year							
		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	21709 / 31009 CRP# 2572													
1	Bethel Burley Road / Mullenix Road Intersection Improvements						20	20	20					
							20	20	20					
	57740 CRP# 3644													
2	Bucklin Hill Road Bridge						150	150	150					
	Clear Creek crossing	STP	3,000	TIB	2,190		810	6,000	6,000					
	Replace culvert w/ new bridge		3,000		2,190		960	6,150	6,150					
	CRP# 2568													
3	Main Street / Madrone Avenue													
	Alaska Avenue to Beach Drive						1,300	1,300	1,300					
	Pave shoulders and sidewalk						1,300	1,300	1,300					
	Various Locations CRP # 1592													
		STP	12				2	14	14					
4	Kingston Complete Streets & SR 104 Corridor Study													
	Develop Complete Streets Plan with emphasis on downtown parking and pedestrian needs		12				2	14	14					
	74597 CRP # 1585													

PRIORITY NO.	PROJECT IDENTIFICATION A. Federal Aid No. B. Road Log Number - Bridge Number C. Project / Road Name E. Beginning and End E. Description of Work	Funding Source Information					Cost by Year							
		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
5	Orseth Road Culvert													
	Replace Deteriorated 72" Culvert						20	20	20					
							20	20	20					
	11709 CRP# 3624													
	Seabeck Highway													
6	Calamity Lane to Gross Road													
	Pave shoulders and channelization						50	50	50					
	at Holly Road intersection						50	50	50					
	56140 CRP# 3654													
							10	10	10					
7	McWilliams Road / Old Military Road Intersection						10	10	10					
	Construct left-turn channelization on McWilliams Road						863	863	863					
							883	883	883					
	Various Locations CRP # 5026													
							20	20	10	10				
8	Seal Coat Pilot Project													
	Apply variety of surface treatments as preservation tool						730	730	490	240				
							750	750	500	250				
	70400 CRP# 1579													
							50	50	10	10	10	10	10	
9	Hansville Road Pave Shoulders													
	Eglon Road to Twin Spits Road						1,600	1,600	320	320	320	320	320	
	Construct paved shoulders with County Forces						1,650	1,650	330	330	330	330	330	

PRIORITY NO.	PROJECT IDENTIFICATION A. Federal Aid No. B. Road Log Number - Bridge Number C. Project / Road Name E. Beginning and End E. Description of Work	Funding Source Information					Cost by Year							
		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	56409 / 59050 CRP # 3655													
							10	10	10					
10	Fairgrounds Road / Central Valley Road													
	Channelization Improvements all legs of Intersection						2,200	2,200	2,200					
							2,210	2,210	2,210					
	57720 / 19515 CRP # 3656													
							15	15	15					
11	Myhre Road / Silverdale Way						10	10	10					
	Intersection Improvements						850	850	850					
							875	875	875					
	71530 / 70509 CRP# 1588													
							10	10	10					
12	Widme Road / Totten Road Intersection													
	Intersection widening to accommodate truck turning						250	250	250					
	movements with paved shoulders - County Forces						260	260	260					
	19519 CRP # 3670													
							10	10	10					
13	Chico Way													
	Overlay with 2" ACP	STP	720				102	822	822					
	SR 3 off-ramp to Newberry Hill Rd. Roundabout		720				112	832	832					
	19000 CRP# 3673													

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020
14	Taylor Road - Culvert												
	Replace culvert at Dickerson Creek for						700	700	700				
	Fish Passage - Participation with Stormwater						700	700	700				
	20509 CRP # 2555												
							30	30	30				
15	Glenwood Road # 2			RAP	180		20	200	200				
	Wildwood Road to J H Road			RAP	2,046		227	2,273	2,273				
	Widen, paved shoulders, intersection improvements				2,226		277	2,503	2,503				
	19801 CRP# 3667												
							10	10	10				
16	Provost Road - Culvert						5	5	5				
	Slip Line deteriorated 48" CMP Culvert						40	40	40				
	County Forces						55	55	55				
	CRP # 3677												
17	Clear Creek Floodplain												
	Construct Trail Bridge						500	500	500				
	Participation with Stormwater Division						500	500	500				
	Various Locations CRP # 5029												
							5	5	5				
18	2015 - 2016 County Wide Sidewalk Repair												
	Replacement/repair of sidewalks and						200	200	200				

PRIORITY NO.	PROJECT IDENTIFICATION A. Federal Aid No. B. Road Log Number - Bridge Number C. Project / Road Name E. Beginning and End E. Description of Work	Funding Source Information					Cost by Year							
		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	pedestrian ramps at various locations 14390 CRP # 3668						205	205	205					
							50	50	50					
19	Bay Shore Drive						10	10	10					
	Construct sidewalk curb and gutter with 2" Overlay						625	625		600	25			
	Participation with Sewer Utility, and Stormwater 19140						685	685	60	600	25			
20	Golf Club Hill Road Bridge Replacement													
	Replace bridge to improve fish passage on Chico Creek						450	450		450				
	Participation w/ Suquamish Tribe CRP# 1584						450	450		450				
							250	250	200	50				
21	Mosquito Fleet Trail Extension						20	20	20					
	White Horse to West Kingston Road						2,000	2,000		2,000				
	Construct trail 19515 CRP# 3662						2,270	2,270	220	2,050				
							400	400	350	50				
22	Silverdale Way Road Improvements						150	150	150					
	350 feet south of Byron Street to Anderson Hill Road	STP	2,419				1,081	3,500		3,500				
	Widening, intersection improvements 11300 CRP# 3665		2,419				1,631	4,050	500	3,550				

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020
		STP	186				29	215	195	20			
23	Seabeck-Holly Road Bridge #20						10	10	10				
	Replace existing timber bridge at Anderson Creek	STP	1,000				440	1,440		1,440			
	55275 CRP# 3666		1,186				479	1,665	205	1,460			
							25	25	20	5			
24	Tracyton Blvd. - Culvert						25	25	15	10			
	Replace existing culvert with structure meeting WDFW Fish Passage design criteria						385	385		385			
	86671 CRP # 1591						435	435	35	400			
		NAVFAC	400					400	300	100			
25	West Kingston Road	NAVFAC	75					75	50	25			
	Replace existing culvert at Carpenter Creek with a Bridge - Participation with Navy	NAVFAC	2,297					2,297		2,297			
	11870 CRP # 3671		2,772					2,772	350	2,422			
							55	55	50	5			
26	Panther Lake Road - Culvert												
	Replace existing culvert with structure meeting WDFW Fish Passage design criteria						283	283		283			
	84370 CRP # 1595						338	338	50	288			
		STP	30				83	113	113				
27	Washington Boulevard Corridor Improvements						5	5		5			
	3rd Street to SR 104 (First Street)	STP	420				70	490		490			

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	Pedestrian and bicycle facilities		450			158	608	113	495					
	56791 CRP # 1593													
	Ridgetop Boulevard - Widening Phase 1					200	200	100	100					
28	SR 303 to 500 ft past Quail Run Dr.					25	25		25					
	Participation w/stormwater, widening, channelization, bioretention cells					1,581	1,581		1,581					
	56791 CRP # 1593					1,806	1,806	100	1,706					
	Ridgetop Boulevard - Phase 2					300	300	100	100	100				
29	500 ft past Quail Run Dr. to 250 ft past Tower View Cir./					25	25			25				
	Pinnacle Ct Intersection - Participation w/stormwater					710	710			710				
	Intersection improvements, bioretention cells					1,035	1,035	100	100	835				
	56791 CRP # 1593													
	Ridgetop Boulevard - Phase 3					300	300		100	100	100			
30	250 ft past Tower View Cir./Pinnacle Ct. intersection					25	25					25		
	to Silverdale Way					690	690					690		
	Participation w/stormwater, bioretention cells					1,015	1,015		100	100	815			
	22840 CRP# 2576													
						35	35		25	10				
31	Spruce Road Bridge # 22													
	Implement bridge scour counter measures					200	200			200				

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	to protect bridge footings. 56409 CRP# 3664						235	235		25	210			
							140	140	50	50	40			
32	Fairgrounds Road - Sidewalk Improvements						380	380		200	180			
	Construct sidewalk both sides from Central Valley Road to Nels Nelson Road 70310 CRP# 1589						800	800			800			
							1,320	1,320	50	250	1,020			
							50	50	5	35	10			
33	Suquamish Way - Shoulders and Sidewalk Hyak Lane to Division Avenue						465	465			465			
	Construct paved shoulders and sidewalk 21109 CRP# 2585						515	515	5	35	475			
							75	75	10	40	25			
34	Sidney Road - Shoulders 106 feet south of Lider Road to Port Orchard City Limits						25	25		15	10			
	Construct 6 feet paved shoulders 21709 / 23760 CRP# 2584						650	650			650			
							750	750	10	55	685			
							15	15	5	5	5			
35	Bethel-Burley Road / Burley-Olalla Road Intersection Improvements						10	10		10				
							376	376			376			
							401	401	5	15	381			

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	47250 CRP # 2560													
						160	160	100	50	10				
36	Alaska Avenue					150	150		150					
	Mile Hill Drive to Madrone Avenue					1,000	1,000			1,000				
	Construct paved shoulders					1,310	1,310	100	200	1,010				
	57610 CRP # 1594													
						62	62	10	42	10				
37	Island Lake Road - Shoulders													
	Construct paved shoulders from Gallery Street to					523	523			523				
	Camp Court, County Forces					585	585	10	42	533				
	13549 CRP # 3672													
						53	53	10	33	10				
38	Anderson Hill Road - Shoulders													
	Construct paved shoulders from 300 feet west of the					332	332			332				
	roundabout to 480 feet east of the roundabout					385	385	10	33	342				
	21139 CRP # 2587													
						110	110	40	60	10				
39	Carney Lake Road - Shoulders and Realignment					50	50		50					
	306 ft. NE of Alta Vista Dr. to 90° curve					450	450			450				
	Construct 6 ft. paved shoulders and realign curve					610	610	40	110	460				
	32799 CRP # 2588													

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						85	85	10	50	25			
40	Horizon Lane SE Replace Deteriorated 42" Culvert					10	10		10				
						475	475			475			
						570	570	10	60	500			
	21320 / 21310 CRP # 2589												
						66	66	20	41	5			
41	Lake Helena Road / Wicks Lake Road – Culverts					4	4		4				
	Replace culverts with structure meeting					597	597			597			
	WDFW Fish Passage Design Criteria 13549 19801 57810 CRP# 3674					667	667	20	45	602			
						35	35	10	20	5			
42	Anderson Hill Road / Provost Road / Old Frontier Road												
	Intersection Improvements			SEPA	47	110	157			157			
					47	145	192	10	20	162			
	41409 CRP#2586												
						55	55	20	25	10			
43	Olympiad Drive - Culvert Replace Deteriorated Culvert					240	240			240			
						295	295	20	25	250			
	13429												
						138	138		50	88			
44	Newberry Hill Road - Culvert Replace culvert with structure meeting					830	830			830			

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
	WDFW Fish Passage Design Criteria 21709 CRP # 2579					968	968		50	918				
						350	350		25	300	25			
45	Bethel-Burley Road Bridge					10	10			10				
	Replace fish-passage barrier culvert with a short span bridge					1,800	1,800				1,800			
	43809 CRP # 2559					2,160	2,160		25	310	1,825			
						54	54		30	19	5			
46	E. Chester Road / E. Madrone Avenue California Avenue to Alaska Avenue					100	100		50	50				
	Construct paved shoulders					480	480				480			
	42510 CRP# 2557					634	634		80	69	485			
						193	193		98	80	15			
47	Beach Drive #2					85	85			85				
	Daniels Loop (E) to Jessica Way (E)					715	715				715			
	Pave Shoulders with drainage improvements					993	993		98	165	730			
	N/A CRP # 3656													
						145	145	5	65	70	5			
48	Markwick / DNR Trail													
	Silverdale Way to Ridgetop Blvd.					775	775				775			
	Construct multi use trail					920	920	5	65	70	780			
	40700 / 40490 CRP# 2583													
						85	85	30	40	10	5			

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020
49	Lund Avenue / Harris Road Intersection					20	20				20		
	Construct signal at intersection			SEPA	180	420	600					600	
					180	525	705	30	40	30		605	
	42910 / 40609 CRP# 2591												
						90	90	10	60	10		10	
50	Jackson Avenue / Salmonberry Road Intersection Improvements					24	24				24		
						554	554					554	
	Various Locations CRP# 1587					668	668	10	60	34		564	
						300	300		25	200		75	
51	Spirit Ridge					10	10					10	
	Selected Neighborhood Roads within Plat, Drainage,					1,400	1,400					1,400	
	Pavement Rehabilitation, Participation w/ Stormwater					1,710	1,710		25	200		1,485	
	57740 / 56950 CRP#3675												
						130	130	5	25	95		5	
52	Bucklin Hill Road / Nels Nelson Road Intersection					25	25				25		
	Construct signal with channelization at the intersection					850	850					850	
	of Nels Nelson Road and Bucklin Hill Road					1,005	1,005	5	25	120		855	
	21709 CRP# 2592												
						71	71	5	5	56		5	
53	Bethel Burley Road - Culvert					2	2				2		

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	Replace failing 24" dia. culvert with a fish passage structure						322	322					322	
	12259 / 12256 / 12250 CRP# 3676						395	395	5	5	58		327	
							90	90	5	25	55		5	
54	Tahuyeh Lake Rd / Gold Creek Rd / Kingsway Intersection						10	10			10			
	Realign Intersection						386	386					386	
	70509						486	486	5	25	65		391	
							260	260		100	140		20	
55	Totten Road													
	Sackman Lane to Suquamish Way - Pedestrian / Bike path			TRIBE	500		840	1,340					1,340	
	Participation with Suquamish Tribe				500		1,100	1,600		100	140		1,360	
	70400													
							75	75		5	5		60	5
56	Hansville Road - Right Turn Lane													
	Construct right turn lane for southbound traffic at intersection of Hansville Rd and SR 104			SEPA	328		52	380						380
	56140				328		127	455		5	5		60	385
	McWilliams Road - Two-way Left-turn Lane						200	200			50		125	25
57	Gentile Lane to Athens Way						20	20					5	15
	Add two-way left-turn, street lights and sidewalk on the						1,200	1,200						1,200

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	north side					1,420	1,420			50	130	1,240	
	11709												
				RAP	275	31	306		75	100	100	31	
58	Seabeck Highway #2												
	Pave shoulders and resurfacing			RAP	1,525	1,035	2,560					2,560	
	Gross Road to Newberry Hill Road				1,800	1,066	2,866		75	100	100	2,591	
	59725												
						75	75		20	25	20	10	
59	Scandia Road												
	Replace deteriorated culvert at Little Sandia Creek					317	317					317	
						392	392		20	25	20	327	
	56409												
						500	500				225	225	50
60	Fairgrounds Road - Sidewalks												
	Central Valley Road to SR 303					1,500	1,500						1,500
	Construct sidewalks					2,000	2,000				225	225	1,550
	56791												
						1,500	1,500					250	1,250
61	Ridgetop Boulevard - South					1,000	1,000						1,000
	Silverdale Way to SR 303												
	Widen to 5 lanes					2,500	2,500					250	2,250
	70370 / 70320												
						1,000	1,000				100	750	150
62	Miller Bay Road / Augusta Avenue					200	200					100	100
	Gunderson Road to Geneva Street					3,145	3,145						3,145

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	Pave shoulders					4,345	4,345					100	850	3,395
	Various Locations					150	150		50			50		50
63	County Wide Bridge Repair													
	Bridge repairs at various locations					600	600	200		200			200	
						750	750	200	50	200	50	200		50
	Various Locations					60	60		20			20		20
64	County Wide Sidewalk Repair													
	Replacement/repair of sidewalks and pedestrian ramps at various locations					540	540		180			180		180
						600	600		200			200		200
	Various Locations					120	120	20	20	20	20	20	20	20
65	County Wide Culvert Projects					60	60	10	10	10	10	10	10	10
	Replacement of emergent structurally or capacity deficient culverts					420	420	70	70	70	70	70	70	70
						600	600	100	100	100	100	100	100	100
	Various Locations													
66	County Wide Surfacing Upgrades													
	Base stabilization and paving of structurally deficient pavements at various locations					1,200	1,200	200	200	200	200	200	200	200
						1,200	1,200	200	200	200	200	200	200	200
	Various Locations					90	90	30		30			30	

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		FEDERAL FUND CODE	FEDERAL COST BY PHASE	RAP / CAPP / TIA / UATA / PWTF / OTHER	STATEOR OTHER FUNDS	IMPACT FEES	LOCAL FUNDS	TOTAL	YEAR 1 2016	YEAR 2 2017	YEAR 3 2018	YEAR 4 2019	YEAR 5 2020	YEAR 6 2021
67	County Wide Safety Improvements					90	90	30		30		30		
	Spot improvements for guardrail, and traffic safety improvements					570	570	140	50	140	50	140	50	
	CRP # 5028					750	750	200	50	200	50	200	50	
	Various Locations													
68	County Wide Bicycle/Ped. Improvements													
	Spot improvements for bicycle/pedestrian					1,500	1,500	250	250	250	250	250	250	
	County Force Electrical Work < \$10,000					1,500	1,500	250	250	250	250	250	250	
	Various Locations													
69	WSDOT Project Participation													
	County participation in State Projects involving County Roads					600	600	100	100	100	100	100	100	
	TOTAL		\$10,559	\$-	\$7,271	\$-	\$58,333	\$76,163	\$20,540	\$16,764	\$11,329	\$12,137	\$7,248	\$8,145

Source: Kitsap County, 2015.

The estimated costs under the Preferred Land Use Plan are estimated to be ~~between \$135 to \$165~~ about \$133.3 million.

Exhibit 4-102. Transportation Projects Needed by 2036 (2015\$ Millions)

Road Project	Preferred Alternative
North County	
Viking Way	\$9.8
Central County	
Anderson Hill Road NW	\$10.2
Stoli Lane NW - Bucklin Hill Road	
Bucklin Hill Road	\$4.9
Central Valley Road NW	\$9.4
Kent Avenue W	\$1.8
Newberry Hill Road NW	\$4.1
Riddell Road NE	\$2.2
Ridgetop Boulevard NW	\$15.0
Sherman Heights Road	\$4.3
Silverdale Way NE	\$24.8
South County	
Belfair Valley Road	\$3.4
Bethel Road SE	\$2.5
Cedar Road E - Ives Mill Road SE	
Burley-Olalla Road	\$1.6
Lund Avenue	\$14.2
Mile Hill Dr SE	\$14.8
Mullenix Road SE	\$6.8
Sunnyslope Road SW	\$3.5
Sum	\$133.3

Source: BHC, Heffron Transportation, Kitsap County 2015 and 2016

Exhibit 4-103 summarizes the total cost of the projects recommended countywide by the Year 2036.

**Exhibit 4-103. Summary of Cost of Roadway Improvements Recommended by 2036
(in 2015\$ Millions)**

Location	Preferred Alternative
North	9.8
Central	76.7
South	46.8
Total	133.3

Source: BHC, Heffron Transportation, Kitsap County 2015 and 2016

In addition to Kitsap County's investments in multimodal transportation, Kitsap Transit intends to improve its system. One improvement that would also support the Silverdale Regional Growth Center is a planned transit center. Kitsap Transit is considering relocating its current Silverdale Transfer Center (STC) to an area that can support improved waiting environments, pedestrian connections, a park & ride function and better bus bays to improve safety for the buses. The STC is presently located along Greaves Way near a major intersection with Highway 3. It is next to a large retail development set to open in early 2016. A location across from the Harrison Medical Center has been chosen by the Kitsap Transit Board for further study as of late 2015. An approximate cost estimate equals \$12.9 million total for the entire project. (Kitsap Transit 2016)

4.9 Wastewater: Sanitary Sewer

Overview

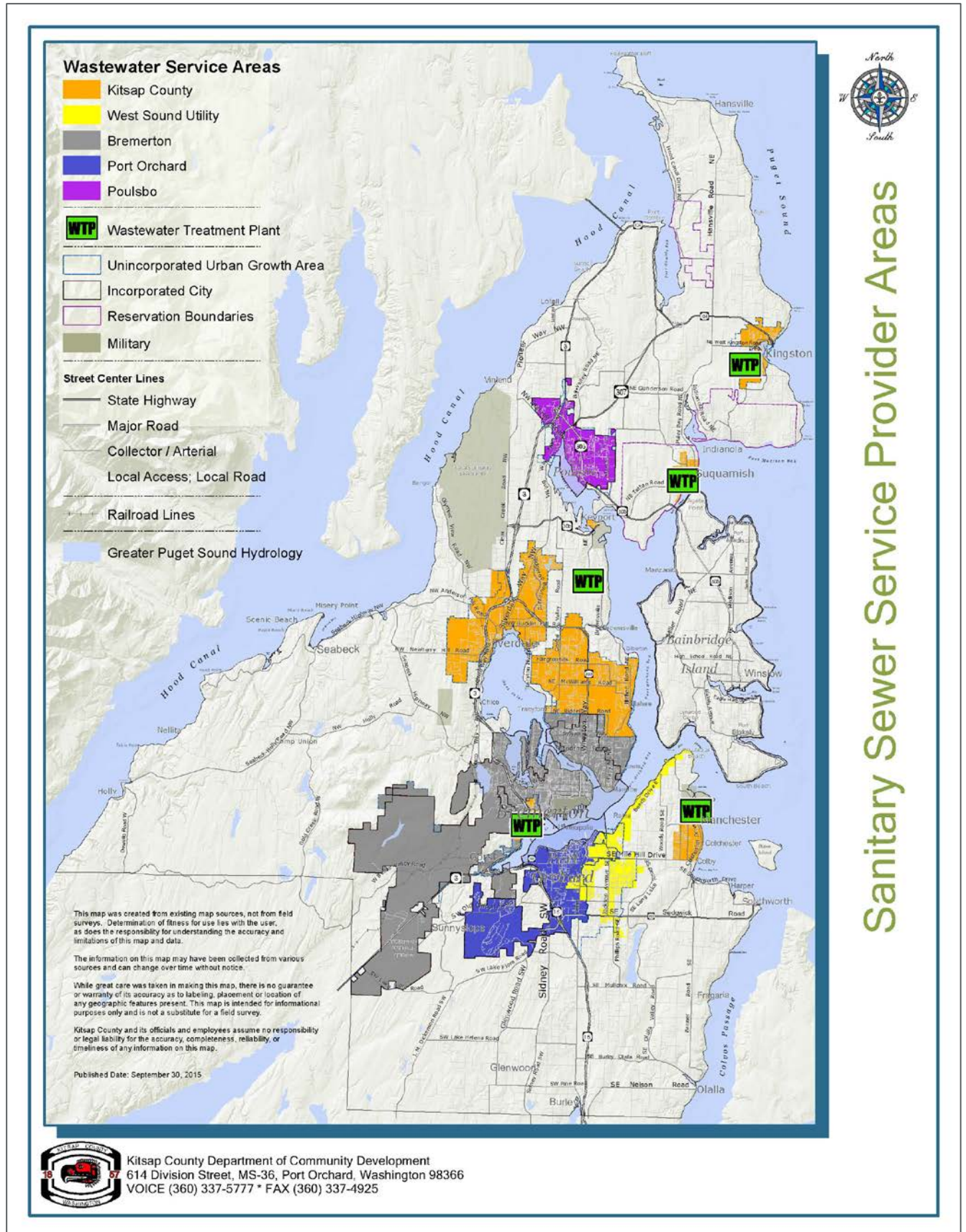
According to the *2012 Kitsap County Capital Facilities Plan*, there are a total of 13 wastewater collection systems and 10 wastewater treatment facilities in Kitsap County, which serve approximately 40% of the total County population. The majority of the rural population uses on-site septic systems.

Several agencies within the County provide sanitary sewer services:

1. Kitsap County manages five wastewater collection systems: Central Kitsap, Kingston, Manchester, Navy Yard City, and Suquamish, and four treatment plants servicing Central Kitsap, Manchester, Suquamish, and Kingston.
2. The City of Bremerton maintains and operates collection and treatment systems for the East Bremerton UGA, portions of the West Bremerton UGAs, and the Gorst UGA.
3. The City of Poulsbo maintains a collection system and contracts with the County to treat city wastewater at the Central Kitsap Treatment Plant in Brownsville.
4. The City of Port Orchard and West Sound Utility District independently operate their respective collection systems and jointly own the treatment facility at Annapolis. West Sound Utility District is responsible for daily operation of the treatment plant.
5. The Port Gamble/S'Klallam Tribe owns and operates a small collection system and treatment facility that serves the community east of Port Gamble Bay.
6. Pope Resources owns and operates a collection system and secondary treatment plant serving the Port Gamble town site and mill site.
7. The Port of Bremerton owns and operates a collection and treatment system that serves the commercial development on Port property.
8. The U.S. Navy manages wastewater collection systems on federal reservations and contracts with Kitsap County and the City of Bremerton to treat its effluent. It is a major contributor to several wastewater treatment plants in Kitsap County, with the Central Kitsap plant receiving the most.

Major providers to urban areas are shown in Exhibit 4-104.

Exhibit 4-104. Wastewater Service Areas



Source: Kitsap County Department of Community Development 2015

Inventory of Current Facilities

An inventory of the existing municipal, county, and private wastewater facilities located in Kitsap County is presented in this section. This inventory is summarized in Exhibit 4-105. Columns (4) – (6) show the LOS as flow design capacity in millions of gallons per day (mgd), 2014 existing flow capacity, and corresponding 2014 flow capacity surpluses or deficits for each of the 10 major wastewater management systems in the County. Column (7) shows the existing populations served within each wastewater system. Maps are provided in Appendix A that show location and type of existing and future sanitary sewer facilities. Appendix B includes a list of potential wastewater funding sources to be used for the 20-year planning period.

Exhibit 4-105. Kitsap County Public Sewer System Inventory

Name	Collection System		Treatment Plant			Service Area		
	Miles of Pipe (1)	Collection System Existing Conditions	Existing Flow, mgd (1)	Design Flow, mgd (1)	Surplus/Deficit, (mgd)	2015 Population Served	Existing Connections ERU (2)	Surplus/Deficit ERU (3)
CITY SEWER SYSTEMS								
City of Bremerton [2013]	176	Completed improvements to reduce overflows to one event per year, per outfall on 5-year avg. during design storm, in all drainage basins. Minor overflows to be reduced to one event/yr in 5 years.	10.0	15.5	5.5	38,309		
City of Port Orchard	70	5 pump station upgrades are included in the six-year CIP. 1 pump station upgrade and 8,500 LF of gravity pipe upgrades are included in the 20-year CIP. 1 additional pump station will be upgraded with developer funding.	0.9	2.1	1.1	11,550	5,509	6,100
NOTE: Treatment plant is jointly owned by the City of Port Orchard and WSUD with a design flow capacity of 4.2 mgd. WSUD is responsible for daily operation of the plant.								
City of Poulsbo	31	The City currently pumps sewage for Central Kitsap Wastewater Plant.	0.61	0.95	0.34	9,950	4,540	1,940
NOTE: The 6.0 mgd design flow for CKTP includes the 0.95 mgd allocated to the City of Poulsbo. Kitsap County reserves treatment capacity to Poulsbo for 0.95 mgd ADF. City of Poulsbo currently removes infiltration and inflow.								

Name	Collection System		Treatment Plant			Service Area		
	Miles of Pipe (1)	Collection System Existing Conditions	Existing Flow, mgd (1)	Design Flow, mgd (1)	Surplus/Deficit, (mgd)	2015 Population Served	Existing Connections ERU (2)	Surplus/Deficit ERU (3)
West Sound Utility District	55	Upgraded to replace mains with insufficient capacity. Can meet current community needs.	1.0	2.1	1.1	14,000	5,705	6,100
NOTE: Treatment plant is jointly owned by Port Orchard and the District. The District is responsible for operation of the plant. The plant capacity has been increased.								
KITSAP COUNTY SYSTEMS								
Central Kitsap Wastewater Facilities	145	Several flow capacity and aging infrastructure problems have been identified.	3.7	6.0	2.3	44,476	14,042	6,240
NOTE: The Central Kitsap treatment plant serves the Silverdale and Central UGAs (existing connections), as well as is contracted to receive sewage from US Navy at Bangor and Keyport and also from City of Poulsbo.								
Kingston Sewer Facilities	14.1	Wastewater collection system has sufficient capacity for projected future flows.	0.127	0.292	0.165	1,900	754	660
NOTE: The Kingston treatment plant serves the Kingston UGA.								
Suquamish Sewer System	10	No critical pipe flow problems identified. Average of 3 highest monthly flows at WWTP is 0.37 mgd.	0.43	0.40	-0.03	2,248	944	-120
NOTE: The Suquamish treatment plant serves the Suquamish LAMIRD and is contracted to receive sewage from the Suquamish Tribal community.								
Manchester Sewer Facilities	12.3	Facility Plan does not address existing conditions of the collection system.	0.28	0.46	0.18	2,193	925	720
NOTE: The Manchester treatment plant serves the Manchester LAMIRD.								
Navy Yard City (Sewer Dist. #1)	9.2	Significant amount of I/I identified in the older sewers in this service area.		0.40 (see notes)		2,947	2,258	
NOTE: The Navy Yard City sewer system serves a portion of the West Bremerton UGA. The conveyance systems is owned and managed by Kitsap County and current discharge contract with the City of Bremerton limits flows to 0.40 mgd ADF.								
OTHER SYSTEMS								
Port of Bremerton Industrial Area	1.6		10,000-15,000 gpd	72,500 gpd	57,000-62,500 gpd	400	160	1000

Sources: Kitsap County; Cities of Bremerton, Port Orchard, and Poulsbo; West Sound Utility District; BHC Consultants 2015; Parametrix 2012

Table Notes:

mgd = million gallons per day

1. Based on the average day flow during the peak flow month (ADF: basis of National Pollutant Discharge Elimination System [NPDES] permits)
2. “ERU” means equivalent residential unit. For Kitsap County owned and operated WWTPs, ERUs include residential, multi-family, commercial and restaurant accounts as provided by Kitsap County Public Works.
3. Residential connections assume 100 gallons per capita per day and an average of 2.5 persons per residence (250 gpd/ERU).

City of Bremerton Sewer Facilities

The City of Bremerton maintains and operates a wastewater collection and treatment system that provides service to the West Bremerton, East Bremerton, and Gorst UGAs.

The system also accepts wastewater flows from the Puget Sound Naval Shipyard (PSNS), other U.S. Navy facilities, and Kitsap County Sewer District No. 1 (KCSD No. 1) in West Bremerton. Other than the U.S. Navy, the system does not provide sewer service for any significant industrial dischargers. The components of the City’s sewer system are listed below:

- Combined sanitary and stormwater sewers
- Gravity sewers
- Gravity-pressure sewers
- Sanitary sewer pump stations and force mains
- Combined sewer overflow (CSO) structures
- Wet weather treatment facility
- Conventional wastewater treatment facilities
- Odor control stations

Since a portion of the City of Bremerton sanitary sewer collection system is composed of combined sewers, flows are derived from the following types of sources:

- Conventional wastewater and sanitary sewage
- Stormwater inflow
- Groundwater infiltration, including rainfall-induced infiltration

The City of Bremerton currently operates two wastewater treatment facilities. The Westside Wastewater Treatment Plant (WWTP) in West Bremerton provides secondary wastewater treatment for the entire service area and discharges to Sinclair Inlet. Biosolids produced at the Westside Plant are treated through anaerobic digestion, dewatered by centrifuge, transported and applied to permitted forestland owned by the City. The Eastside Treatment Facility provides treatment for combined wet weather and sewer flows from East Bremerton and discharges to Port Washington Narrows.

A network of gravity sanitary sewer pipelines, pump stations, and force mains delivers flows from the collection system to these treatment facilities. The various East Bremerton collection facilities deliver combined sanitary sewer flows to the East Bremerton beach main. During normal dry weather operations East Bremerton flows are delivered from the East Bremerton beach main to West Bremerton through 16- and 24-inch inverted siphons.

The wastewater is then pumped into the Crosstown Pipeline force main and gravity-pressure sewer main system by pump station CE-1, along with flows from various West Bremerton basins. The Crosstown Pipeline delivers these pumped flows to the Westside WWTP. Wastewater from the remaining West Bremerton service areas is delivered to the WWTP via gravity sewer mains and pump stations.

During wet-weather conditions the East Bremerton beach main is pressurized by pump station EB-2 to increase peak flow capacity and most of the combined sewage flow is diverted to the Eastside Treatment Facility. The flow is treated at the facility and discharged to Port Washington Narrows.

The hydraulic capacity of the city's combined wastewater collection system and associated components is adequate to convey dry weather wastewater flows to the Westside WWTP for treatment. However, during extreme wet weather storm events, combined wet weather and wastewater flows can exceed the hydraulic capacity of the city's existing conveyance. When this occurs, excess untreated combined sanitary sewer flows have historically been allowed to overflow to receiving waters of Puget Sound. As a result of increasing water quality and environmental mandates, federal and state regulations have been developed to limit the occurrence of untreated CSOs.

The Eastside Treatment Facility was designed to provide treatment for the East Bremerton sewer flows during wet weather storm events to meet Puget Sound water quality standards. The facility was functional in December 2001 and completed in 2002.

The Health District declared Gorst and the surrounding area a "severe public health hazard" in 1997, due to the large number of failing septic systems in the area. The City of Bremerton received American Resource Recovery Act and other grant funding to construct two new municipal pump stations and a collection system that covers a 326-acre area. A total of 103 residences and 29 existing commercial businesses are connected to the Gorst sewer system. Flows are pumped to the Westside Wastewater Treatment Plant.

The City of Bremerton updated the Combined Sewer Overflow (CSO) Reduction Plan for Bremerton's drainage basins and began the "Cooperative Approach to CSO Reduction" in 2000. A total of 23 projects were completed, including two new pump stations, seven pump station upgrades, over 12 miles of new sanitary and storm sewers, construction of the new Eastside Wet Weather Treatment Plant, and a major upgrade to the Westside Wastewater Treatment Plant. The final CSO project was completed in 2009.

The city produces a CSO report that is submitted to Ecology on an annual basis. The 2010 report shows that the CSO reduction program has been very successful in reducing total overflow volume and frequency, with overflow volume reduced by 96.4 percent, frequency of events reduced by 99 percent, and compliance with CSO reduction requirements at all 15 sites. See the Bremerton Comprehensive Plan, 2014 Wastewater Comprehensive Plan Update, 2008 Wastewater Conveyance Planning document, and 2016 Capital Improvement Plan for further details.

City of Poulsbo Sewer Facilities

The current sanitary sewer service area for the City of Poulsbo is primarily within the city limits. The city contracts with Kitsap County for wastewater treatment at the Central Kitsap Treatment Plant. The City and County are currently planning and implementing improvements to both the City and County's existing systems to reduce infiltration and inflow and to increase the capacity of the conveyance system. As Exhibit 4-105 shows, the City of Poulsbo wastewater system has a

current (2015) surplus of 1,940 equivalent residential units (ERUs), which has sufficient capacity to accommodate population growth for the City of Poulsbo during the planning period.

City of Port Orchard Sewer Facilities

The City of Port Orchard maintains and operates a wastewater collection system that provides service to the City of Port Orchard. The collection system includes 49 miles of gravity sewers, 8 miles of force mains, and 14 miles of septic tank effluent pumping (STEP) mains where effluent is pumped from conventional septic tanks to a sewer main located in the street. Pipes range from 2-inch to 24-inch in diameter. The collection system also includes 16 pump stations.

The City of Port Orchard and West Sound Utility District (WSUD) jointly own the South Kitsap Water Reclamation Facility located east of Port Orchard along the south shore of Sinclair Inlet. The facility is operated by WSUD.

2015 City of Port Orchard population is approximately 11,550. New residential development is occurring primarily along Sidney Road SW and SW Sedgwick Road, and on the west side of town along Old Clifton Road. Future wastewater collection system needs for the City are described in the City of Port Orchard 2015 Comprehensive Sanitary Sewer Plan Update, which is currently being updated.

West Sound Utility District

West Sound Utility District (WSUD) generally serves the City of Port Orchard, including the UGA east and south of the city limits. The district also provides sewer collection service in the rural area along Beach Drive to Watauga Beach. The current service area is approximately 5.5 square miles. The collection system consists of 15 pumping stations and about 55 miles of pipeline. The maximum capacity of the conveyance system is estimated to be 6.0 million gallons per day (mgd). Exhibit 4-105 shows the joint West Sound-Port Orchard wastewater system has a current surplus of about 12,200 ERUs, which has sufficient capacity to accommodate the combined growth population of Port Orchard and WSUD under the Preferred Alternative. Future wastewater collection system needs for portions of the Port Orchard UGA that are within the WSUD service area are described in Karcher Creek Sewer District Comprehensive Sewer Plan (2007).

The City of Port Orchard and West Sound Utility District (WSUD) jointly own the South Kitsap Water Reclamation Facility located east of Port Orchard along the south shore of Sinclair Inlet. The facility is operated by WSUD and treats wastewater from the service areas of both West Sound and the City of Port Orchard totaling approximately 25,500 people, and discharges to Sinclair Inlet. WSUD and the City jointly own the facility; however, the West Sound Utility District is responsible for daily operation. Annual average day flow for 2014 was approximately 1.9 mgd. WSUD and the City expect to continue sharing treatment capacity equally. Upon the expansion in 2006, the facility was re-rated, increasing its capacity from 2.8 mgd to 4.2 mgd, with a peak day capacity of 16 mgd, which provides sufficient capacity to serve population growth within the City during the planning period. Along with the expansion, the treatment process was upgraded and can now produce Class A reclaimed water and Class A biosolids, which can be used for revegetation of commercial/industrial areas and as composting cover for tree farms.

Port of Bremerton Sewer Facilities

According to the 2012 *Kitsap County Capital Facilities Plan*, the Port of Bremerton operates a public wastewater treatment plant located in the Olympic View Industrial Park on State Route 3 west of Gorst. The service area encompasses the Port's 1,800 acres, which includes the Bremerton National Airport and the Olympic View Industrial Park.

Constructed in the 1970s and expanded in the mid-1980s, the plant serves the vast majority of businesses at the airport and industrial park. A few older business locations operate septic tank and drainfield systems. Ecology has designated the plant as a municipal plant and has rated the plant capacity at 72,500 gallons per day (average daily flow). The plant uses a combination gravity and pump station collection system with aeration lagoons and settling ponds for treatment and drainfields for disposal.

The plant is currently treating between 10,000 and 15,000 gallons per day depending on weather and business cycles, and is serving approximately 400 persons. Typical levels of sewage generation for light industrial business activity are 25 to 35 gallons of wastewater per day per person. The plant serves two commercial/industrial areas (the airport and industrial park) that have been designated for business, industrial, and airport activity since the first County comprehensive plan was developed in the 1970s.

Kitsap County Sanitary Sewer Facilities

Central Kitsap Wastewater Facilities

Kitsap County owns and operates conveyance and treatment facilities in the Central Kitsap service area. This service area is the largest system in Kitsap County and includes the naval facilities at Bangor, Keyport, and the City of Poulsbo along with the Silverdale and Central Kitsap UGAs. The plant also treats septic tank waste hauled to the plant.

The Central Kitsap collection system consists of approximately 44 lift stations and over 145 miles of gravity mains and force mains ranging in size from 2-36 inches in diameter. In 1997, Pump Stations 3, 4, 12, 13, and 17 were converted from gaseous chlorine to sodium hypochlorite for odor control. In 2003, gaseous chlorine was also removed from the Johnson Road Chlorine Station and replaced with sodium hypochlorite.

Flows from the City of Poulsbo enter the northern portion of the collection system via a gravity siphon crossing from Lemolo to Keyport, across the mouth of Liberty Bay. Some of the collection and transfer systems serving the Meadowdale areas, downtown Silverdale, and northern portion of the Central Kitsap collection system are undersized for existing wastewater flows. A phased expansion of the conveyance and treatment facilities is planned to repair and replace worn facilities, and to extend service to surrounding areas. Modifications to accommodate current flows are included in the design phase.

Treatment facilities at the Central Kitsap Wastewater Treatment Plant (CKWWTP) are currently rated for an Average Daily Flow (ADF) of 6.0 mgd, with a peak hour flow of 15 mgd. The plant utilizes an activated sludge/solids contact process for tertiary treatment of wastewater and an ultraviolet light disinfection system. The County plans to expand the plant based on the extent of growth predicted within the existing sewer service area. The second phase of construction at the plant will upgrade to 10.6 mgd ADF. The existing 68-acre site is expected to accommodate layout of facilities for capacity in excess of 25 mgd ADF.

Treated wastewater from the CKWWTP is discharged into the northern portion of Port Orchard Bay in Puget Sound. The outfall pipe has a maximum hydraulic capacity of approximately 31 mgd. The diffuser has a maximum hydraulic capacity of 16 mgd. Future extension of the existing diffuser is expected to provide sufficient dilution for the increased flow. The Central Kitsap Treatment Plant treats 3.7 mgd average annual flow (2014). The effluent is discharged approximately 3,200 feet offshore at a depth of 46 feet below mean low water.

The CKWWTP is the regional sludge treatment center for all County-owned treatment plants and septage from on-site treatment systems. Approximately 30 to 40 percent of the solids treated at the CKWWTP are derived from septage or sludge from the County's outlying treatment plants. Sludge treatment facilities at the CKWWTP include gravity thickening and dewatering. Currently, dewatered sludge is hauled to eastern or southwestern Washington for composting or land application. Future wastewater collection systems for the Silverdale and Central Kitsap UGAs include a total of 52 new pumping stations, with 135 miles of new gravity sewer and force mains to complete the major sewer collection system of these UGAs.

Kingston Wastewater Facilities

Sewer service in the Kingston area is owned and maintained by Kitsap County. The existing Kingston collection system consists of approximately 39,000 feet of gravity sewer pipe ranging in size from 6 to 12 inches in diameter and approximately 18,500 feet of force main ranging from two to six inches in diameter. Six pump stations serve the Kingston area, which serves approximately 777 ERUs.

Completed in May 2005, the Kingston wastewater treatment facility is designed to treat an average daily flow of 292,000 gallons per day. This is a 95% increase in capacity from the previous facility, and will accommodate residential and commercial growth in the Kingston area for the next 20 years. The plant utilizes an oxidation ditch, with two rotating stainless steel brushes, for biological treatment. Two oxidation ditches were constructed; one for current flows and one to accommodate future growth (500,000 gallons per day). Only the active ditch contains rotating brushes.

Built in conjunction with the new treatment plant and located on the old plant grounds, Pump Station 71 pumps all of the sewage generated in Kingston approximately 1.8 miles to the new plant.

Construction of a new outfall into Puget Sound was included in the improvements. Since the previous outfall was damaged during dredging operations by the State ferry system, the new pipe was located well outside the ferry corridor and extended to 165 feet below sea level to limit impacts on shellfish harvesting areas. Waste sludge from the Kingston WWTP is currently trucked to the Central Kitsap WWTP for digestion and treatment.

As Exhibit 4-105 shows, the Kingston wastewater system has a current (2012) surplus of 1,280 ERUs (2,925 additional people) which has enough capacity to accommodate the projected 2036 growth population. Future wastewater collection systems, as described in the 2007 Kingston Wastewater Facilities Plan Addendum, include a total of eight new pumping stations, with 47,000 feet of new gravity sewer and force mains, ranging from 4-10 inches in diameter to complete the major sewer collection system for the Kingston UGA. Sludge from the plant is hauled for further treatment at the CKWWTP.

Suquamish Wastewater Facilities

Kitsap County owns and operates the Suquamish wastewater conveyance and treatment facilities that provide sewer service to approximately 1,871 residents in the Suquamish area with sewer service available within the LAMIRD. The newest extension of the existing service area beyond the LAMIRD covers about 37 acres and lies west of Urban Avenue between Geneva Street and South Street. The plant serves the Suquamish Tribal Casino. The Tribal Casino pump station and collection system consist of approximately 48,200 linear feet of pipeline.

The McKinstry Street pumping station and the Division Street pump station are the pumping stations in the collection system. All wastewater in the system flows by gravity to these stations

for transfer to the Suquamish WWTP. Existing sewers are sufficient to accommodate additional growth within the existing service area.

The Suquamish WWTP is a secondary plant with an ADF capacity of 0.4 mgd. The U.S. Environmental Protection Agency (EPA) is responsible for issuing the required National Pollutant Discharge Elimination System (NPDES) permit since the treatment plant is located within the Port Madison Tribal Reservation boundary. The County upgraded the existing facilities in 1997, expanding the plant from 0.2 to 0.4 mgd ADF capacity. Sludge from the plant is hauled for further treatment at the Central Kitsap WWTP.

Manchester Wastewater Facilities

Kitsap County owns and operates a small sewer collection and treatment system in Manchester. This system serves a population of approximately 1,000 people and treats an average flow of 0.19 mgd. The Manchester collection system consists of five pumping stations and approximately 60,000 linear feet of pipeline. Public sewers now serve approximately 25% of the land within the LAMIRD boundary, although the remaining area is subdivided into smaller parcels and much of it is built out.

The current service area includes the EPA laboratory at Clam Bay and the Manchester Naval Fuel Depot. Waste flows from the Manchester Naval Fuel Depot originate from ships discharging sewage at the facility. Kitsap County has an agreement with the Navy that requires the County to be notified when the Navy plans to discharge wastewater to the County's system. The Navy has storage facilities at the depot to allow holding of wastewater if the County does not permit immediate discharge.

The plant provides for an ADF capacity of 0.46 mgd. Sludge from the Manchester WWTP is thickened, temporarily stored on the plant site and then hauled to the Central Kitsap WWTP for treatment. The outfall provides sufficient capacity for discharge of the projected future wastewater flows. Sludge from the plant is hauled for further treatment at the Central Kitsap WWTP.

Navy Yard City Sanitary Sewer Facilities (Sewer District 1)

Kitsap County owns and maintains a sewage collection system in the area commonly referred to as Navy Yard City within the West Bremerton UGA. The collection system consists of two pump stations and 9.2 miles of pipeline and serves approximately 970 residential and commercial units.

Over the years, Kitsap County and the City of Bremerton have discussed the possibility of transferring a collection system. Currently, the County contracts with the City for treatment capacity at the West Bremerton treatment facility. Kitsap County and the City of Bremerton expect to continue to discuss the possibility of transferring the collection system to the city through an ILA and Resolution.

Private Sanitary Sewer Facilities

Port Gamble/S'Klallam Tribe Reservation Sewer Facilities

The Port Gamble/S'Klallam reservation is located along the northeast shore of Port Gamble. Failing septic drainfields and concern for the environment of Port Gamble Bay have prompted the Port Gamble/S'Klallam Tribe to construct wastewater collection and secondary treatment facilities. The collection system uses gravity sewers and septic tank effluent pumping (STEP) systems to convey wastewater to a recirculating sand filter for secondary treatment and subsurface disposal of the liquid effluent.

According to the 2012 CIP, four lift stations and associated pipeline are constructed along Little Boston Road. Solids accumulating in the septic tanks continue to require removal and hauling to a regional plant that accepts such wastes (e.g., Central Kitsap WWTP). Treatment facilities are designed for an initial average design flow capacity of 0.05 mgd with ultimate expansion to 0.1 mgd to serve a projected population of 1,565 people.

Port Gamble Sewer Facilities

Pope Resources (Olympic Resource Management) owns and operates the sewer collection and treatment system in Port Gamble. This system is a small, prefabricated plant.

The current outfall is located in relatively shallow water in Hood Canal. Pope Resources also provides potable water and solid waste removal services for this area. Any changes or upgrades to the Port Gamble system will be subject to conditions in the operating permit. A new treatment plant is currently under construction to replace the existing plant.

Sewer Facilities Needs Forecast

The purpose of the Sewer Facilities Plan of the Capital Facility Element is to ensure there are adequate facilities for sewer service as the population increases. This plan addresses existing and future facility needs, and provides a financial plan to indicate revenue sources for funding the increase in sewer services. Facilities and financial planning for sewer service purveyors other than Kitsap County Department of Public Works (e.g. cities, tribes, private districts) are summarized in this plan and are described in greater detail in each of the City's and district's CFPs.

Sewer system planning is based on the assumption that sewer service will only be provided in areas located within UGA boundaries or Limited Areas of More Intense Rural Development (LAMIRD) except where a significant threat to human and/or environmental health is identified. Projects planned in the six-year CFP are for service to areas within UGA boundaries or LAMIRDs. Most of these projects are physically located within UGA boundaries, or are associated with existing facilities located outside UGA boundaries (e.g., improvements to the Central Kitsap WWTP). Sewer projects planned for 2013-2018 as well as in 2019-2025 focus on providing service to customers located within (1) existing sewer districts (i.e., in-fill), and (2) UGAs (i.e., extensions).

The sewer facility forecast assumes that existing, acceptably operating, on-site sewage (OSS) disposal systems will continue to be used for some existing developments within the UGAs until such time that municipal sanitary sewers are available, and replacement of the existing OSS is required to support redevelopment or meet applicable public health statutes. The sewer facility forecast also assumes that new OSS disposal systems or other approved wastewater treatment and disposal options may be used for new development where urban densities, lot sizes, and physical characteristics meet applicable regulatory criteria such as soil type and setbacks to surface water or wells. However, Kitsap County and its wastewater service providers assumed the possibility of all OSS disposal systems transitioning to traditional wastewater collection service by 2036. This need is documented in plant capacity plans and evaluation procedures²,

² Whenever any of the actual flows or loadings reaches 85% of the design criteria for three consecutive months or if projected increases in flows or loadings would reach design capacity within five years, the NPDES discharge permit

conveyance infrastructure³, as well as secured and potential future funding sources as reflected in this CFP and associated appendices. Funding for these facilities is expected to include private funding sources such as Local Improvement Districts (LIDs) and developer extensions for conveyance infrastructure.

Level of Service

The adequacy of existing sewer facilities to meet present and future needs is based on the estimated gallons per day of wastewater for the current sewered population and for the projected future sewered population. It is also based on an assumed existing and planned Level of Service (LOS) for sewer service. There is an average of 2.5 people per household in Kitsap County. Current wastewater flow data indicates that an average of 70 to 100 gallons per capita per day (GPCD) is used. With an average of 2.5 people per dwelling unit, a residential connection will generate a demand for treatment of 250 gallons per day. These characteristics serve as a planning standard or LOS for sewer service during the next 20-year planning period. Based on this standard and sewered population allocation, it is possible to identify future deficiencies in various sewer systems and the capital projects necessary to correct those deficiencies. Current wastewater flow data from Kitsap County facilities indicates that approximately 70 GPCD may be a more representative of typical sewer service demand, so the 250 gpd LOS standard is likely somewhat conservative.

Capital Projects and Funding

Sewer system capital projects have been identified based on a combination of existing Sewer Comprehensive Plans, work that was conducted for the County's 2007 Wastewater Infrastructure Task (WIT) Force and supplemental technical analysis associated with each UGA. Individual projects for each UGA and each land-use alternative are summarized in the following exhibits and include both capital cost and expected revenue sources. Additional information on potential revenue sources that may be used for sewer facilities is provided in Appendix B.

For summary purposes, Exhibit 4-106 provides an overview of capital costs for the Preferred Alternative. Details of the projects are found below by each service provider.

states that the County must begin a plan to expand the capacity of the plant or take other actions to avoid exceeding the design criteria.

³ See Appendix A for maps showing coverage of facilities in existing developed areas and future development areas in UGAs.

**Exhibit 4-106. Sewer Cost by Provider under the Preferred Alternative
2016-2036 (All numbers are in 2015 \$1000s)**

UGA	Preferred Alternative
Bremerton (City)	\$304,633
Port Orchard (City)	\$7,470
WSUD	\$27,835
Poulsbo (City)	\$11,655
Kitsap County	\$341,263

Source: BHC 2015

Kitsap County 2016-2036 Capital Improvement Projects – Overview

The County's sanitary sewer facilities improvements are summarized in Exhibit 4-107, including the proposed implementation schedule, costs, and financing plan. Costs and revenues are further summarized in Exhibit 4-108 and Exhibit 4-109. The 2016-2021 six-year CIP section is presented as two three-year budgets and are primarily publicly funded projects.⁴ Projects that are in the 2022-2036 period could move up to the 2016-2021 period based on specific requirements to serve new development, or environmental or public health concerns that warrant sewer service extension. Specific revenue sources for these projects would be identified and reflected in annual wastewater CIP updates prepared by service providers.

CIPs for the period 2022 through 2036 are also presented in Exhibit 4-107 as a total cost for each category of improvements. These costs are for the upgrade/replacement of other existing pump stations, force mains and gravity sewers as well as new pump stations, force mains and gravity collectors and interceptors to provide sewer service beyond the existing County sewer systems. Individual projects have been combined into sets of projects based on the types of projects or areas being served. The sets of capital projects associated with the Kitsap County wastewater system are summarized below for each UGA and service area having sewer utilities owned and operated by Kitsap County.

Several improvement projects have been identified in Exhibit 4-107 for three of the four wastewater treatment plants owned and operated by Kitsap County. Some of these projects include upgrades for additional treatment capacity as indicated in Exhibit 4-107. However, National Pollutant Discharge Elimination System (NPDES) discharge permit issued by Ecology to Kitsap County for each of these plants has design criteria for maximum month influent flow and maximum month loadings of biochemical oxygen demand and total suspended solids. Whenever any of the actual flows or loadings reaches 85% of the design criteria for three consecutive months or if projected increases in flows or loadings would reach design capacity within five years, the NPDES discharge permit states that the County must begin a plan to expand the capacity of the plant or take other actions to avoid exceeding the design criteria. Thus, as wastewater flows and loadings increase, Kitsap County will be required to review the adopted CIP for each facility and take appropriate actions to remain in compliance with the NPDES discharge permit.

⁴ The draft six-year CIP is being reviewed and revised by County staff. It is possible that projects would be moved from the six-year to the seven-20 year timeframe or broken down further to assist with phasing and funding opportunities.

Central Kitsap System

Six improvement projects have been identified for the existing Central Kitsap UGA sewer system in the six-year CFP consisting of pump station upgrades and pipe replacements projects. One set of projects has been identified in the 2016-2021 CIP:

- PS 6, PS 8 and PS 18 and related conveyance systems

Five sets of projects have been identified in the 2022-2036 CIP:

- PS 32, PS 33, PS 69 PS 32 force main and PS 69 conveyance systems
- PS 34
- PS 62, PS 65 and PS 65 forcemain
- PS 10 upgrades
- Old Military Road piping upgrades

New infrastructure improvements to extend sewer service beyond the existing Central Kitsap system would be implemented as development occurs in those areas including:

- 2 new medium sized pump stations (200-500 gpm capacity)
- 13 new small pump stations (<200 gpm capacity)
- 33,000 feet of new force mains
- 69,800 feet of new gravity sewers

Silverdale System

Nine improvement projects are scheduled for the existing Silverdale UGA sewer system in the six-year CFP consisting of pump station upgrades and pipe replacements projects. Five of these projects are in the 2016-2021 CIP including:

- PS 1 improvements
- PS 3, PS 4 and collection system improvements
- PS 19 Upgrades
- Bucklin Hill Bridge Project forcemain pipe
- Bay Shore Drive gravity pipe upgrade

The remaining existing infrastructure projects are scheduled for completion during 2022-2036 including the following projects:

- PS 12 and Provost Road conveyance system upgrades
- PS 21, PS 22 and PS 22 conveyance system improvements
- Upper Anderson Hill Road gravity sewer
- Silverdale Way to PS 1 and Levin Road gravity pipe

New infrastructure improvements to extend sewer service beyond the existing Silverdale system are also summarized in Exhibit 4-107 and would be implemented as development occurs in those areas. These facilities include:

- 6 new medium sized pump stations

- 16 new small pump stations
- 31,000 feet of new force mains
- 119,000 feet of new gravity sewers

Central Kitsap Wastewater Treatment Plant

The Central Kitsap Wastewater Treatment Plant (CKTP) provides secondary treatment for wastewater flows generated in the Central Kitsap and Silverdale UGAs, the City of Poulsbo, the Keyport area and the naval facilities at Bangor. Biosolids generated at the Kingston, Suquamish and Manchester Wastewater Treatment Plants are transported to CKTP for treatment and processing with biosolids generated at CKTP. In addition, nitrogen is removed to meet reclaimed water standards for a portion of the wastewater flows treated at CKTP.

The CIP for the Central Kitsap Wastewater Treatment Plant (CKTP) consists of three projects completed during the six-year CIP:

- CKTP ultraviolet disinfection system upgrades
- CKTP screw press
- CKTP campus buildings

One project is scheduled for completion during 2022-2036:

- CKTP primaries and aeration tanks 5 and 6

Two of these projects are capacity related while the others are scheduled for implementation as funding becomes available in the planning period.

Kingston System

Three improvements projects at the Kingston Wastewater Treatment Plant (KTP) and existing collection/conveyance system have been identified in the six-year CIP. All other infrastructure improvements implemented during the 20-year planning period extend sewer service beyond the existing system in response to growth in the Kingston UGA. The six-year CIP projects consist of the following:

- KTP water reclamation and reuse
- KTP oxidation ditch upgrades
- West Kingston Road bridge pipeline replacements

New infrastructure improvements to extend sewer service beyond the existing Kingston system are scheduled to occur in the 2022-2036 period and would be implemented as development occurs. These projects consist of the following:

- 1 new medium sized pump station
- 4 new small pump stations
- 12,000 feet of new force main
- 36,000 feet of new gravity sewers

Keyport LAMIRD System

CIP improvements identified for the Keyport LAMIRD consist of one project to eliminate one pump station (PS 16) with an upgrade to a second pump station (PS 67), both located in the

Keyport community. The majority of wastewater flows through these pump stations originate in the City of Poulsbo. The pipeline conveying these flows is called the Lemolo Shores pipeline which must be replaced as the flows from Poulsbo increase. Both projects are scheduled for implementation in the six-year CIP and would be funded jointly by Kitsap County and the City of Poulsbo.

Manchester LAMIRD System

Two projects have been identified for the sewer system serving the Manchester area during the six-year CIP. One project is required to replace outdated equipment and to upgrade failing pipe within the Puget Sound shoreline:

- PS 45, PS 46, and PS 47, and gravity pipe improvements

The second project consists of a new pump station, force main, and gravity sewer system and the individual pump stations to serve 121 homes along Yukon Harbor.

Future sewer system infrastructure improvements to serve growth within the Manchester LAMIRD have been identified in the Manchester Sewer Facilities Strategy Plan (BHC Consultants, 2014). These facilities consist of approximately 42,000 feet of new gravity sewers extending into new service areas and one new pump station. These facilities would be constructed as growth occurs in the sewer subbasins.

Suquamish System

One project has been identified for the Suquamish system consisting of an upgrade to the solids handling system at the Suquamish Wastewater Treatment Plant (STP). This project will be completed during the six-year CIP. Pipe replacement projects throughout collection system will be continued as necessary.

Exhibit 4-107 Sanitary Sewer -- Kitsap County Systems Capital Facilities Projects 2016-2036 (All numbers are in 2015 \$1000s) – Preferred Alternative

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3*	Cost Years 4-6*	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
KTP Water Reclamation and Reuse (4102007) The project would upgrade the Kingston Treatment Plant from secondary to tertiary to provide reclaimed water for irrigation use.		Grants, Partner Funding	\$3,550			\$3,550
KTP Oxidation Ditch Upgrades (4102009) The project would upgrade the secondary treatment processes to replace outdated equipment and improve nutrient removal.		See Exhibit 4-109	\$750			\$750
STP Solids Handling Upgrades (4103004) The project is to replace the outdated and inefficient solids handling process at the Suquamish Treatment Plant. The project will include upgrades to the obsolete instrumentation and controls software and hardware in order to run on current Windows operating system.	√	See Exhibit 4-109	\$3,306			\$3,306
CKTP Primaries and Aeration Tanks 5 & 6 This project will address primary treatment effectiveness, nitrification capacity, hydraulic capacity, updating outdated equipment.	√	See Exhibit 4-109			\$28,643	\$28,643
CKTP UltraViolet Disinfection Upgrade (410139*) This project will replace the outdated and inefficient UV Disinfection System.		See Exhibit 4-109	\$2,000			\$2,000
CKTP Screw Press This project will provide redundancy in solids dewatering system.	√	See Exhibit 4-109		\$1,050		\$1,050
CKTP Campus Buildings Replace and upgrade admin building, laboratory, storage/maintenance building to improve energy efficiency and capacity.		See Exhibit 4-109		\$1,400	\$10,400	\$11,800
PS's 1, 6, 8, & 18, and Collection System Improvements (4101019) The project is to upgrade the pump station components at Pump Stations 1, 6, 8, and 18 in the Silverdale and E. Bremerton area, and to increase associated forcemain and gravity pipe capacity. There will be separate contracts for the pump station and conveyance line portions.	√	See Exhibit 4-109	\$17,551			\$17,551

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3*	Cost Years 4-6*	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
<p>PS's 16 & 67 Improvements (4101033*) The project in Keyport is to change the hydraulics on the Poulsbo side of the piping system in order to eliminate PS16 on the water and reroute all the Poulsbo flow to PS 67. Upgrades to PS67 are needed to handle the increase in flow. Joint project with the Stormwater Division.</p>	√	City of Poulsbo (93.6%)	\$3,448			\$3,448
<p>PS 3 Collection System Improvements (4101037) The project is to replace equipment and upsize the capacity at Pump Station 3 in Silverdale including collection system upgrades including replacing lower Anderson Hill gravity sewer across Silverdale Way to PS3.</p>	√	See Exhibit 4-109	\$8,796			\$8,796
<p>PS 19 Upgrades (4101038) The project is to replace equipment at Pump Station 19 including collection system upgrades in the vicinity of Waaga Way and Stampede Blvd.</p>	√	See Exhibit 4-109	\$2,300			\$2,300
<p>PS's 45, 46, & 47 and Gravity Pipe Improvements (4105002) The project is to rebuild Pump Stations 45, 46, & 47 in Manchester due to outdated infrastructure. The project includes replacing or upgrading the gravity pipe along the beach between the pump stations.</p>	√	Low interest loans, Ecology	\$5,460			\$5,460
<p>PS 4 Collection System Improvements The project is to replace equipment and upsize the capacity of Pump Station 4 in Silverdale including collection system upgrades of 1,600 ft. of PS 4 force main along Waaga Way and Fredrickson Rd. gravity sewer.</p>	√			\$14,779		\$14,779
<p>PS 12 and Provost Rd. Conveyance Upgrade to replace outdated infrastructure and increase capacity in Chico Way area of Silverdale, including replacing 3,750 ft. of gravity sewer along Provost Rd.</p>	√	See Exhibit 4-109			\$8,580	\$8,580
<p>PS 21, PS 22, and PS 22 Conveyance Upgrade to replace outdated infrastructure and increase capacity in north Silverdale area in the vicinity of Island Lake, including 1,050 ft. of forcemain west of PS 22.</p>	√	See Exhibit 4-109			\$6,600	\$6,600
<p>PS 32, PS 33, PS 69, PS 32 FM, PS69 Conveyance (4105002) Upgrade to replace outdated infrastructure and increase capacity near the southern edge of the CK UGA west of Hwy. 303 between Riddell Rd. and McWilliams Rd.</p>	√	See Exhibit 4-109			\$10,560	\$10,560
<p>PS 34 (4105002) Upgrade to replace outdated infrastructure and increase capacity in vicinity of Central Valley and McWilliams Rd.</p>	√	See Exhibit 4-109			\$4,703	\$4,703

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3*	Cost Years 4-6*	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
PS 36 and PS 36 FM (4105002) Upgrade to replace outdated infrastructure and increase capacity south of Fairgrounds Rd. between Hwy. 303 and Central Valley Rd.	√	See Exhibit 4-109			\$1,825	\$1,825
PS 62, PS 65 and PS 65 FM (4105002) Upgrade to replace outdated infrastructure and increase capacity serving the Illahee area of the CK UGA	√	See Exhibit 4-109			\$8,600	\$8,600
PS 10 Upgrade to replace outdated infrastructure and increase capacity in the Meadowdale West area.	√	See Exhibit 4-109			\$2,925	\$2,925
Bucklin Hill Bridge Project (4101035) The project is to replace the existing from along Bucklin Hill in conjunction with the Road's Div. building the new bridge in Silverdale. Joint project with Roads Division.		See Exhibit 4-109	\$423			\$423
Bay Shore Drive Gravity Pipe Upgrade (4101029) The project is to replace and upsize the existing outdated gravity pipe along Bay Shore Dr. and Washington Ave. in Silverdale. Joint project with Roads & Stormwater Divisions.	√	See Exhibit 4-109	\$1,678			\$1,678
Yukon Harbor This project provides sewer service along Colchester Drive in Manchester to 121 homes currently on septic.	√	Grants (\$4.6M), ULID	\$7,255			\$7,255
Lemolo Shores Pipeline Upgrade (4101036*) This project replaces the existing forcemain with a new upsized pipe for capacity and replace outdated material.	√	City of Poulsbo	\$350	\$3,150		\$3,500
Silverdale Way to PS 1 and Levin Rd. This project upsizes the existing sewer main from Waaga Way south along Levin Rd. to PS 1.	√	See Exhibit 4-109			\$6,787	\$6,787
Old Military Rd. Piping Upgrades Replacing existing sewer on North Old Military to the CKTP to increase capacity.	√	See Exhibit 4-109		\$9,648		\$9,648
Upper Anderson Hill Rd. Replacing existing sewer on Upper Anderson Hill Rd. to increase capacity.	√	See Exhibit 4-109		\$218	\$1,670	\$1,888

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3*	Cost Years 4-6*	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
Manchester Gravity Pipe Replacement Replace gravity pipe in Basins 49 and E per the 2014 Manchester Sewer Strategy Plan. Work includes replacement of 3 tees within these basins.		See Exhibit 4-109		\$378		\$378
West Kingston Road Bridge Replace existing pipeline with bridge. Joint project with Roads Division		See Exhibit 4-109	\$480			\$480
Sewer System Expansion – Central Kitsap UGA New medium PS (2) New small PS (13) New forcemain (33,000 LF) New gravity pipe (69,800 LF)	√	See Exhibit 4-109			\$4,900 \$12,200 \$7,100 \$29,900	\$4,900 \$12,200 \$7,100 \$29,900
Sewer System Expansion – Silverdale UGA New medium PS (6) New small PS (16) New forcemain (31,000 LF) New gravity pipe (119,000 LF)	√	See Exhibit 4-109			\$14,500 \$15,000 \$3,400 \$47,000	\$14,500 \$15,000 \$3,400 \$47,000
Sewer System Expansion – Kingston UGA New PS (5) New forcemain (12,000 LF) New gravity pipe (36,000 LF)	√	See Exhibit 4-109			\$6,600 \$4,400 \$17,000	\$6,600 \$4,400 \$17,000
TOTALS			\$57,347	\$15,844	\$253,293	\$341,263

Note: The draft six-year CIP is being reviewed and revised by County staff. It is possible that projects would be moved from the six-year to the seven-20 year timeframe or broken down further to assist with phasing and funding opportunities.

Source: Kitsap County Public Works Wastewater Division, BHC 2015

**Exhibit 4-108. Sanitary Sewer -- Kitsap County Systems Capital Facilities Project Costs
2016-2036 (All numbers are in 2015 \$1000s) – Preferred Alternative**

Category Summary	Cost Years 2016-2021	Cost Years 2022-2036	Total Cost
Capacity	\$64,210	\$257,672	\$334,435
Non-Capacity*	\$8,981	\$10,400	\$19,381
Sum	\$73,191	\$268,072	\$341,263

Source: Kitsap County Public Works Wastewater Division, BHC 2015

**Exhibit 4-109. Sanitary Sewer -- Kitsap County Systems Capital Facilities Project Revenues
2016-2036 (All numbers are in 2015 \$1000s) – Preferred Alternative**

Revenue Source	Projection Years 1-6	Projection Years 7-20	Total Cost
Revenue Bonds	\$28,000	\$0	\$28,000
Potential State Grants & Loans	\$10,241	\$0	\$10,241
Utility Fees, ULID, Developer, and Poulsbo share *	\$49,729	\$253,293	\$303,022
Sum	\$87,970	\$253,293	\$341,263

Note: *The Poulsbo share of costs for all improvements at CKTP is 15.8%, for PS 16&67 improvements is 93.6% and for the Lemolo Shores Upgrade project is 100%.

Source: Kitsap County Public Works Wastewater Division, BHC 2015 Kitsap County Sewer Service – Alternatives Comparison

Exhibit 4-110 provides Kitsap County Sewer Utility costs by the Preferred Alternative, and shows the relative demand for sewer facilities.

Capacity upgrades at the four wastewater treatment plants would be constructed when increasing wastewater flows and/or loadings approach the threshold limits stated in the discharge permits issued for each facility.

**Exhibit 4-110. Kitsap County Sewer Utility Cost – Preferred Alternative
(All numbers are in 2015 \$1000s)**

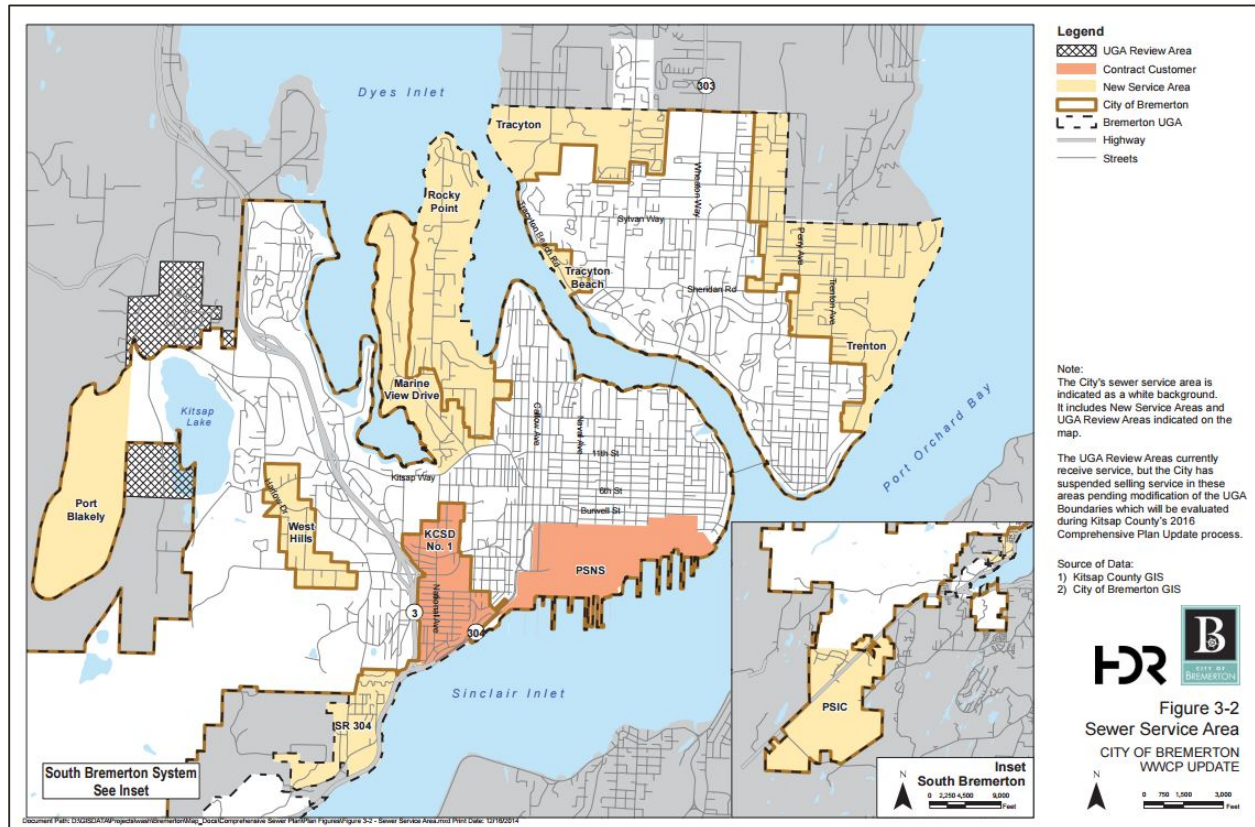
UGA	Preferred Alternative
Central County Sewer Service Area	
Central Kitsap UGA (Conveyance)	106,053
Silverdale UGA (Conveyance)	135,590
Keyport LAMIRD (Conveyance)	6,948
Central Kitsap WWTP	43,493
Kingston	
Kingston Conveyance	28,480
Kingston WWTP	4,300
Manchester Conveyance	13,093
Suquamish WWTP	3,306
TOTAL	341,263

Source: BHC 2015 and 2016

City of Bremerton

The City of Bremerton’s Sewer System Plan (HDR 2014) illustrates the City’s sewer planning area with city limits, assigned UGAs, and an area around Kitsap Lake that the City considered for future service if the UGA is changed in the future. For each sewer basin area, the City has estimated projects and costs, and detailed plans in the Sewer System Plan may be consulted and are summarized here.

Exhibit 4-111. Bremerton Sewer Service Area



Source: HDR 2014

The City of Bremerton capital projects for the planning period are shown in Exhibit 4-112. These projects are associated with providing sewer service to the West Bremerton, East Bremerton, Gorst, and SKIA UGAs. The projects currently identified within the City’s 2015 CIP all pertain to providing service to the City and these UGA areas, as assumed under the Preferred Alternative. Capital sewer projects through the year 2036 are estimated at a cost of ~~\$334,969,000~~ **\$225,406 million**.

The proposed schedule, costs, and financing plan for projects that will be needed for all alternatives are shown in Exhibit 4-112. A summary of project categories, costs, and revenues are found in Exhibit 4-113 and Exhibit 4-114.

[Note: Bremerton is updating its capital list for its Comprehensive Plan Update. Change to the tables below are anticipated prior to final County hearings and adoption.]

Exhibit 4-112. Sanitary Sewer – City of Bremerton Capital Facilities Projects 2015-2036
(All numbers are in 2016 – 2036 YOES, ~~2015~~ \$1000s)

Category / Project Description	Revenue Sources	Cost 2015 - 2017	Cost 2018 - 2020	Cost 2020-2036	Total Cost
Category I (Capacity Projects Required to Meet LOS)					
New Service Areas	UFA/G	<u>\$10,191</u>	<u>\$43,276</u>	<u>\$212,711</u>	<u>\$266,178</u>
		\$13,521	\$12,099	\$132,647	\$158,267
Category II (Non-Capacity Projects Needed for Maintenance and Operations)					
Collection System	UFA	<u>\$9,625</u>	<u>\$9,545</u>	<u>\$24,256</u>	<u>\$43,426</u>
		\$8,618	\$3,497	\$24,377	\$36,492
Facilities and Equipment	UFA/G	<u>\$2,868</u>	<u>\$348</u>	<u>\$5,728</u>	<u>\$7,994</u>
		\$2,268		\$5,725	\$7,994
Wastewater Treatment Plant	UFA/G	<u>\$1,479</u>	<u>\$2,730</u>		<u>\$4,209</u>
		\$3,743	\$3,932		\$7,674
Operations and Maintenance	UFA	<u>\$5,171</u>	<u>\$5,791</u>	<u>\$1,250</u>	<u>\$12,213</u>
		\$5,940	\$6,457	\$2,583	\$14,980

Note: Assumptions based on the 2013 rate study.

Source: Wastewater Comprehension Plan, 2014; BERK, ~~2015~~2016.

Exhibit 4-113. Sanitary Sewer – City of Bremerton Capital Facilities Costs 2015-2036
(All numbers are in 2016 – 2036 YOES, \$1000s)

Category Summary	Costs 2015 - 2017	Costs 2018 - 2020	Costs 2020 – 2036	Total Costs
Category I (Capacity Projects Required to Meet LOS)	<u>\$10,191</u> \$13,521	<u>\$43,276</u> \$12,099	<u>\$212,711</u> \$132,647	<u>\$266,178</u> \$158,267
Category II (Other Projects Needed for Maintenance and Operations)	<u>\$19,143</u> \$20,569	<u>\$18,414</u> \$13,886	<u>\$31,234</u> \$32,685	<u>\$68,791</u> \$67,139
TOTAL	<u>\$29,334</u> \$34,090	<u>\$61,690</u> \$25,985	<u>\$243,945</u> \$165,331	<u>\$334,969</u> \$225,406

Note: Assumptions based on the 2013 rate study.

Source: Wastewater Comprehensive Plan, 2014; City of Bremerton, 2015; BERK, ~~2015~~2016.

The 2014 Bremerton Wastewater Comprehensive Plan provides a more detailed summary of funding for years one through six (ending in 2020) included in Exhibit 4-114. Additionally, regular updates to the 6-year Capital Improvements Program are anticipated. Beyond 2020, each project in the plan is assigned a revenue source of either 1) user fee assessments, 2) grants and ULIDs, or 3) user fee assessments/grants and ULIDs. The [2014 Bremerton Wastewater Comprehensive Plan and the City’s Capital Facilities Plan](#) may be referenced for more detailed information after 2020.

Exhibit 4-114. Sanitary Sewer – City of Bremerton Capital Facilities Revenues 2015-2020
(All numbers are in ~~2015-2013~~ \$1000s)

Category Summary	Revenues 2015 - 2017	Revenues 2018 - 2020	Total Revenues
Capital Fund Reserves	\$1,622	\$9,800	\$11,422
General Facility Charges	\$1,509	\$1,561	\$3,070
Grant Funding/Developer Contributions	\$12,196	\$9,862	\$22,058
Assumed New Revenue Bonds	\$17,500	\$8,000	\$25,500
Subtotal Funding Sources	\$32,827	\$29,223	\$62,050
Capital Funded by Rates	\$2,600	\$4,100	\$6,700
Total Funding Sources Through 2020	\$35,427	\$33,323	\$68,750

Note: Assumptions based on the 2013 rate study.
Source: Wastewater Comprehensive Plan, 2014; BERK, 2015.

City of Port Orchard

Capital projects for the City of Port Orchard sewer system are associated with expanding conveyance capacity within the existing system. Capital project and revenue information is shown in Exhibit 4-115, Exhibit 4-116, and Exhibit 4-117 and is based on information contained in the City of Port Orchard 2015 General Sewer Plan Update, currently in progress. Projected costs for the sewer projects total approximately \$7,470,000 for the six-year CIP through 2021.

Exhibit 4-115. Sanitary Sewer – City of Port Orchard Capital Facilities Project Costs 2016-2036
(All numbers are in 2015 \$1000s)

Category Summary	2016-2018	2019-2021	2020-2036
Capacity	\$6,370	See Note 1	\$6,370
Non-Capacity*	\$1,100	See Note 1	\$1,100
Total	\$7,470	See Note 1	\$7,470

Projects are identified for this timeframe. However, costs have not been estimated for projects in years 7-20.
Source: BHC 2015*Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency.

Exhibit 4-116. Sanitary Sewer – City of Port Orchard Capital Facilities Project Revenues 2016-2036 (All numbers are in 2015 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Years 2022-2036	Total Revenue
Potential State Grants & Loans	\$1,396	See Note 2-	\$1,396
Utility Fees	\$6,074	See Note 2	\$6,074
Developer	See Note 1	See Notes 1 and 2	See Note 1
Total	\$7,470	\$0	\$7,470

1. The Albertsons Pump Station will be funded and constructed by a developer. Costs have not been estimated.
2. Projects are identified for this timeframe, but costs are not available.

Source: BHC 2015

Exhibit 4-117. Sanitary Sewer – City of Port Orchard Capital Facilities Projects 2016-2036 (All numbers are in 2015 \$1000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost ¹
(All Amounts in \$1,000s)						
<p>Marina Pump Station Improvements</p> <ul style="list-style-type: none"> • Replace existing high flow pumps and install Variable Frequency Drives (VFDs) for new Pumps. • Install bypass vault • Replace mechanical equipment • Replace the existing emergency generator set, automatic transfer switch, and upgrade the fuel storage to include secondary containment. • Upgrade electrical, instrumentation, and controls equipment • Upgrade the drywell ventilation to meet Department of Ecology requirements. • Remove sanitary sewer overflow pipe. • Relocate 8” sewer inlet • Replace sea wall 	√	FEMA (\$1,396), Sewer Fund	\$3,800			\$3,800
<p>Bay Street Pump Station Improvements</p> <ul style="list-style-type: none"> • Replace dilapidated wet well riser • Replace dry well access with flush hatch • Coat interiors of existing wet well and dry well • Replace existing constant speed dry pit pumps with new constant speed dry pit pumps • Replace all mechanical components • Replace all electrical components • Reroute gravity main from the west around the north side of dry well • Install generator set • Relocate sidewalk to provide better access for wet well manhole lid • Site paving/restoration • Install fencing around site 		Sewer Fund		\$1,100		\$1,100
<p>McCormick Pump Station 2 – Design</p> <ul style="list-style-type: none"> • Replace pump system including pumps, controls and panels, level sensors, rails and reducers • connecting to existing discharge elbows 	√	Sewer Fund		\$190		\$190

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost ¹
(All Amounts in \$1,000s)						
<ul style="list-style-type: none"> • Provide free standing roof structure above the pump control panel with integrated lights to illuminate area and to protect workers from the rain with a design similar to the McCormick Ridge installation • Replace check valves, plug valves and saddles downstream of the pump station in kind • Reduce the volume of storage in the wet well to reduce odors caused by long residence time • Employ new corrosion control system utilizing less toxic chemicals • If odor remains an issue at the station with the new corrosion control system, provide an odor control system that treats hydrogen sulfide and also the complex odors formed by STEP system effluent 						
<p>McCormick Pump Station 2 – Construction</p> <ul style="list-style-type: none"> • Replace pump system including pumps, controls and panels, level sensors, rails and reducers connecting to existing discharge elbows • Provide free standing roof structure above the pump control panel with integrated lights to illuminate area and to protect workers from the rain with a design similar to the McCormick Ridge installation • Replace check valves, plug valves and saddles downstream of the pump station in kind • Reduce the volume of storage in the wet well to reduce odors caused by long residence time • Employ new corrosion control system utilizing less toxic chemicals • If odor remains an issue at the station with the new corrosion control system, provide an odor control system that treats hydrogen sulfide and also the complex odors formed by STEP system effluent 	√	Sewer Fund		\$1,100		\$1,100
<p>McCormick Pump Station 1 – Design</p> <ul style="list-style-type: none"> • Replace pump system including pumps, controls and panels, level sensors, rails and reducers connecting to existing discharge elbows • Provide free standing roof structure above the pump control panel with integrated lights to illuminate area and to protect workers from the rain with a design similar to the McCormick Ridge installation • Replace check valves, plug valves and saddles downstream of the pump station in kind • Reduce the volume of storage in the wet well to reduce odors caused by long residence time • Employ new corrosion control system utilizing less toxic chemicals 	√	Sewer Fund		\$180		\$180

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost ¹
(All Amounts in \$1,000s)						
<ul style="list-style-type: none"> If odor remains an issue at the station with the new corrosion control system, provide an odor control system that treats hydrogen sulfide and also the complex odors formed by STEP system effluent 						
<p>McCormick Pump Station 1 – Construction</p> <ul style="list-style-type: none"> Replace pump system including pumps, controls and panels, level sensors, rails and reducers connecting to existing discharge elbows Provide free standing roof structure above the pump control panel with integrated lights to illuminate area and to protect workers from the rain with a design similar to the McCormick Ridge installation Replace check valves, plug valves and saddles downstream of the pump station in kind Reduce the volume of storage in the wet well to reduce odors caused by long residence time Employ new corrosion control system utilizing less toxic chemicals If odor remains an issue at the station with the new corrosion control system, provide an odor control system that treats hydrogen sulfide and also the complex odors formed by STEP system effluent 	√	Sewer Fund		\$1,100		\$1,100
<p>Albertsons Pump Station²</p> <ul style="list-style-type: none"> Replace pumps Replace all electrical equipment Replace all mechanical equipment Clean and re-coat wet well 	√	Developer		See Note 2		
<p>McCormick Woods Drive SW Gravity Sewer Upgrades</p> <ul style="list-style-type: none"> Replace 1,390 lf of 10-inch pipe with 15-inch pipe from manhole 115-2-2-0200 to manhole 115-2-2-0020 May not be necessary depending on future development patterns 	√	Sewer Fund			See Note 1	
<p>Flower Meadows Pump Station</p> <ul style="list-style-type: none"> Replace pumps Replace all electrical equipment Replace all mechanical equipment Clean and re-coat wet well 	√	Sewer Fund			See Note 1	
<p>Bay Street Gravity Sewer Upgrades</p> <ul style="list-style-type: none"> Replace 1,330 lf of 18-inch pipe with 30-inch pipe from manhole 115-2-2-0200 to manhole 115-2-2-0020 	√	Sewer Fund			See Note 1	

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost ¹
(All Amounts in \$1,000s)						
Port Orchard Boulevard Gravity Sewer Upgrades <ul style="list-style-type: none"> Replace 5,760 lf of 12-inch pipe with 15-inch pipe from manhole 312-2-2-0220 to manhole 115-2-2-0200 	√	Sewer Fund			See Note 1	
TOTALS			\$3,800	\$3,670	See Note 1	\$7,470

1 Costs have not been estimated for projects in years 7-20.

2 The Albertsons Pump Station will be funded and constructed by a developer. Costs have not been estimated.

Source: Draft Sewer CIP, 2015 (BHC)

City of Poulsbo

The City of Poulsbo is currently updating their Comprehensive Sewer Plan (CSP) and sewer utility Capital Improvement Program (CIP). Exhibit 4-118, Exhibit 4-119, and Exhibit 4-120 shows the costs and revenue sources of capital projects that have yet to be completed under their current CSP as updated with City input. All project costs portrayed were escalated from the year they were formulated (2008) to year 2015 using comparative industry construction cost indexes or are based on more current information based on the ongoing formulation of the CSP update. The City will also contribute to the funding of County-led sewer projects as described under the Kitsap County sewer capital plans above.

As Poulsbo projected growth is limited to small portions adjacent to city limits that are designated as Urban Transition Areas, the projects portrayed within Exhibit 4-120 remain the same.

Exhibit 4-118. Sanitary Sewer – City of Poulsbo Capital Facilities Project Costs 2016-2036 (All numbers are in 2015 \$1000s)

Category Summary	Cost Years 2016-2021	Cost Years 2020-2036	Total Cost
Capacity	\$3,790	\$1,400	\$5,190
Non-Capacity*	\$2,485	\$1,400	\$3,885
Sum	\$6,275	\$2,800	\$9,075

*Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency.

Source: City of Poulsbo, 2008; BHC 2015

Exhibit 4-119. Sanitary Sewer – City of Poulsbo Capital Facilities Project Revenues 2016-2036 (All numbers are in 2015 \$1000s)

Revenue Source	Revenue Year 2016-2021	Revenue Year 2020-2036	Total Cost
Utility Fees	\$6,275	\$2,800	\$9,075
Sum	\$6,275	\$2,800	\$9,075

Source: City of Poulsbo, 2008; BHC 2015

Exhibit 4-120. Sanitary Sewer – City of Poulsbo Capital Facilities Projects 2016-2036 (All Amounts in \$1,000)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
<p>Annual Inflow Reduction Program Flow monitoring data shows that the existing sewer system experiences high levels of inflow during storm events. This inflow may be associated with leaking manholes, storm drain connections, or roof drain connections. Starting in 2007-2008, the City implemented an annual inflow reduction program consisting of identifying and repairing inflow sources.</p>	√	Utility Fees	\$400	\$200	\$1,400	\$2,000
<p>Village Pump Station Upgrade Upgrades are currently under design.</p>		Utility Fees	\$500			\$500
<p>Replace Force Main Between Marine Science Center and Harrison Street This project replaces the 12-inch force main from the Marine Science Center pump station that runs along the beach. The existing main is subject to damage or failure which would result in release of sewage to Liberty Bay. The force main will be rerouted along Fjord Drive and then tie into the existing Central Interceptor main in SR 305 at Harrison Street.</p>		Utility Fees	\$250			\$250
<p>305 Interceptor Capacity Upgrade This project would increase the capacity in the 305 Interceptor by either extending the Bond Road Pump Station force main or by constructing a parallel gravity main.</p>	√	Utility Fees	\$2,810			\$2,810
<p>Telemetry System This project would update the telemetry system.</p>		Utility Fees	\$175			\$175
<p>Liberty Bay Pump Station Upgrades The south end of the Viking Way basin is expected to experience significant development. This project would upgrade and expand the pump station from the current 100 gpm, to 400 gpm (0.58 mgd).</p>	√	Utility Fees	\$360			\$360
<p>Purchase and Demolition of Lemolo House</p>		Utility Fees	\$350			\$350
<p>Public Works Facility</p>		Utility Fees	\$450	\$450	\$1,350	\$2,250
<p>Noll Road Sewer Improvements This project will construct new sewer improvements to allow for the Alasund Pump Station to be abandoned.</p>		Utility Fees	\$20	\$210		\$230
<p>Applewood Pump Station Replacement</p>		Utility Fees	\$730			\$730

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
This project will replace old and obsolete electrical and mechanical equipment. Existing structures would be rehabilitated and recoated.						
Annual Pump Station Rehabilitation/Replacement This is an ongoing program to rehabilitate and replace equipment and structures to ensure well maintained pump stations. This includes replacement of mechanical and electrical equipment that has reached the end of its useful life, recoating structures to extend the life, and replacement of corroded valves, and piping.		Utility Fees	\$300	\$300	\$1,400	\$2,000
TOTALS			\$6,345	\$1,160	\$4,150	\$11,655

Source: City of Poulsbo, BHC 2015

West Sound Utility District

Twenty-two improvement projects were identified for the WSUD sewer system in their six-year CFP starting in 2016. A summary of costs is provided in Exhibit 4-121; revenues are summarized in Exhibit 4-122; and a breakdown of capital projects is shown in Exhibit 4-123. All project costs are in their original 2014 dollars and have not been escalated. More than 50 projects are planned for the 2016-2034 period including a variety of lift station upgrades, repairing or replacing force mains and gravity sewer pipes, and building new lift stations and conveyance systems to accommodate growth. The largest project is the 6-phase East Port Orchard Sewer Replacement Project. This \$8.3 million dollar project is planned to start in 2018 and continue through 2026 with a one year gap between phases 4 (2021) and 5 (2023) and a 2 year gap between phases 5 (2023) and 6 (2026).

The 2016-2021 six-year CIP consists of:

- 6 Lift Station Upgrades: \$ 505,000
- 8 Repair / Replace Gravity Sewer and Manholes Projects: \$ 1.63 Million
- 4 Phases of the East Port orchard Sewer Replacement Project: \$5.2 Million
- Phillips Road sewer utility extension project, including 4 lift stations: \$4.6 Million

The 2022 – 2034 CIP consists of:

- 13 Lift Station Upgrade Projects: \$3.05 Million
- 4 Repair / Replace Gravity Sewer and Manhole Projects: \$600,000
- 2 Phases of the East Port Orchard Sewer Replacement Project: \$3.1 Million
- West Port orchard Sewer Replacement Project: \$4.5 Million
- 11 New Lift Station and Collection Systems: \$8.5 Million

Exhibit 4-121. Sanitary Sewer – Port Orchard UGA – West Sound Utility District Capital Facilities Project Costs 2016-2034 (All Amounts in \$1,000)

Category Summary	Cost 2016-2021	Cost Years 2022-2034	Total Cost
Capacity	\$4,600	\$8,500	\$4,600
Non-Capacity*	\$7,335	\$19,750	\$27,085
Total	\$11,935	\$19,750	\$31,685

Source: WSUD, BHC 2015

*Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency.

Exhibit 4-122. Sanitary Sewer – Port Orchard UGA – West Sound Utility District Capital Facilities Project Revenues 2016-2034 (All Amounts in \$1,000)

Revenue Source	Revenue Year 2016-2021	Revenue Year 2022-2034	Total Cost
Revenue Bonds	\$4,600	0	\$4,600
Utility Fees	\$ 7335	\$ 19,750	\$ 27,085
Total	\$ 11,935	\$ 19,750	\$ 31,685

Source: WSUD, BHC 2015

Exhibit 4-123. Sanitary Sewer – Port Orchard UGA – West Sound Utility District Capital Facilities Projects 2016-2034 (All Amounts in \$1,000)

Category / Project Description	Revenue Sources	Cost 2016-2018	Cost 2019-2021	Cost 2022-2034	Total Cost
Category I (Capacity Projects Required to Meet LOS)					
New Lift Station and Collection System These projects are designed to increase system capacity by constructing new lift stations and conveyance systems.	Revenue Bonds, Utility Fees	\$4,600 1 project		\$8,500 11 Projects	\$ 13,100 12 Projects
Category II (Non-Capacity Projects Needed for Maintenance and Operations)					
Lift Station Upgrades These projects include pump replacements, wetwell upsizing, SCADA improvements and complete lift station replacements.	Revenue Bonds, Utility Fees	\$ 505 6 Projects		\$ 3,050 13 Projects	\$ 3,555 19 Projects
Repair / Replace Gravity Sewer and Manholes These projects include repairing, moving, replacing and upsizing gravity sewer pipes and manholes.	Revenue Bonds, Utility Fees	\$ 1,630 8 Projects		\$ 600 4 Projects	\$ 2,230 12 Projects
East Port Orchard Sewer Replacement Phase 1 Phases 2, 3 and 4 Phases 5 and 6	Revenue Bonds, Utility Fees	\$1,300	\$3,900	\$3,100	\$8,300 6 Projects
West Port Orchard Sewer Replacement Phases 1, 2 and 3	Revenue Bonds, Utility Fees			\$4,500 3 Projects	\$4,500 3 Projects
Totals: 2015 UGA Boundaries	Revenue Bonds, Utility Fees	\$8,035 16 Projects	\$3,900 3 Projects	\$19,750 33 Projects	\$31,685 52 Projects
2016 Preferred Alternative UGA – Reduced Costs					\$ 27,835

Note: A full list of CIP projects can be found in the West Sound Utilities District Wastewater Utility Capital Improvement Fund (2015-16).
Source: West Sound Utilities District Wastewater Utility Capital Improvement Fund (2015-16).

4.10 Water

Overview

Water systems are classified into two categories, Group A (former Classes 1–3) and Group B (former Class 4) systems. According to the Washington State Department of Health (DOH), Group A systems, which have 15 or more service connections or regularly serve 25 or more people 60 or more days per year, currently comprise approximately 95% of all the County’s public connections; Group B systems, which have less than 15 connections or serve less than 25 people, serve approximately 5% of the connections. Most of the Group B systems were developed with a shallow well to serve short plats or small subdivisions and serve only that development. Exhibit 4-124 below shows the breakdown of population in the County served by each type of water system.

Exhibit 4-124. Percent Connections Served by Type of Water Supply System

Type of Water Supply System	Percent (%) Public Connections
Group A Public Water Systems	95
Group B Public Water Systems	5
Total	100

Source: Washington State Department of Health, 2015.

Kitsap County Water Planning Programs

Kitsap Public Utility District (KPUD) has been designated by the Kitsap County Board of Commissioners as having countywide responsibility for technical, managerial, financial, operational, and support services needed to provide satisfactory water resource development, protection, and utility service. KPUD also functions as a Satellite System Management Operator throughout the County by provision of direct service, contract service, and support service.

The KPUD has worked cooperatively with the County and local water purveyors to conduct the Groundwater Management Plan (GWMP) process. The District and County have also jointly sponsored the preparation of a Coordinated Water System Plan (CWSP) for Kitsap County. The District, in coordination with Ecology, completed the initial basin assessment for Kitsap County. Each of these planning processes is described in more detail below.

Kitsap County Ground Water Management Plan

To meet the requirements of the Ground Water Management Act, the KPUD served as a co-lead agency to develop the Draft Kitsap County Groundwater Management Plan completed in 2004. All of Kitsap County has been identified as a groundwater management area. KPUD coordinated with water purveyors in the County, as well as other members of the Kitsap County Groundwater Advisory Committee.

Preparation of the GWMP was done in accordance with the requirements of Chapter 173-100 WAC, Groundwater Management Areas, and Programs. These regulations led to the designation of Kitsap County as a Groundwater Management Area (GWMA) on October 7, 1986. An Interlocal Agreement was entered into between the KPUD and the Kitsap County Board of Commissioners on December 15, 1986. This Agreement established both entities as co-lead agencies for the evaluation and preparation of the GWMP.

Kitsap County Coordinated Water System Plan (CWSP)

The Kitsap County CWSP (revised May 9, 2005) presents an assessment of municipal and industrial water supply needs in Kitsap County and a program to effectively provide water supply and service to customers throughout the area. The CWSP was developed to comply with Chapter 70.116 RCW and Chapter 246-293 WAC by the Water Utility Coordinating Committee (WUCC). The WUCC consists of representatives from each purveyor with over fifty services within the declared area, the county legislative authority, the Kitsap County Department of Community Development and the Kitsap County Health District.

The CWSP provides a process and strategy for the existing water utilities to define their role in a program consistent with adopted land use policies and the projected growth strategy. The regional water supply, transmission, and storage plan represents the collective views of the WUCC and integrates the findings of the Kitsap County GWMP (Water Conservation per Groundwater Plan Volume III).

The September 2011 CWSP Update addresses only those eight water systems that meet the Department of Health definition of “expanding.” These include the Indian Hills, Indianola, Keyport, North Bainbridge, North Peninsula, Suquamish, Vinland, and West Kitsap systems.

Water Conservation in the County

County government supports Group-A water utilities as they pursue ongoing conservation programs. These programs include both supply and demand management measures within individual service areas.

In June 2009, the Board of County Commissioners adopted by resolution a new policy treating water as a resource, not a waste stream. This policy establishes a culture of innovative development and operating practices in order to preserve this natural resource on public property.

Members of the Water Purveyors of Kitsap County (WATERPAK) provide basic conservation kits and literature for water users. They also evaluate the advisability of countywide programs to retrofit existing homes with low flow toilets, low-flow shower heads, restricted flow aerators, and other appropriate devices on a cost-effective basis.

Water utilities conduct leak detection programs that identify problem water losses in distribution systems. The Kitsap County WATERPAK plans to evaluate a regional approach to leakage analysis efforts.

The WATERPAK developed a comprehensive, model water conservation program for small utilities. The conservation program includes conservation objectives, demand forecasting methods, program activities, and level of effort, budget estimates, savings estimates, and evaluation and monitoring criteria. Program activities include education, system monitoring and improvements, promotion of conservation devices, incentives for customers, water production monitoring, drought response conservation, and other appropriate supply and demand management measures. WATERPAK plans to conduct joint conservation efforts with Pierce and Mason counties.

Inventory of Current Facilities

Exhibit 4-125 shows the current inventory and capacity for the Group “A” Community Water Systems that currently serve the County with 50 approved DOH connections or more. The

inventory includes the name of the water system, existing and approved DOH connections, and the capacity of each system.

**Exhibit 4-125. Current Facilities Inventory –
Group “A” Community Water Systems Over 50 Connections**

50+ Connections System Name	Connections(1)		Water Rights (2)			System Information		
	Existing	Approved	Qa (afy)	Qi (gpm)	Qi (cfs)	Source Capacity (gpm)(2)	Storage Capacity(1) (gal in 1,000)	System Owner/ Op (1,3)
Alpinewood	98	99	44.6	161		300	0	WW
Bainbridge Island, City of	2,709	Unspec	2,564	3,456	0.35	1,993	2,800	COBI
Bear Cub	55	70	49.5	107		160	17	NWW
Bethel East	52	55	17	20		120	11	NWW
Bill Point Water	84	84	64.2	42		66	30	NWW
BKS	71	73	35	126		180	0	WW
Bremerton West 517 Zone, City of	137	Unspec	6,658	5,743		8,820	1,210	
Bremerton, City of	18,063	Unspec	N/A	17,952	40	13,200	33,200	COB
Bucklin	92	121	42.5	139		114	117	WW
Cedar Glen Mobile Home Park	137	137	31	100		120	32	NWW
Cedarbrook	34	56	30	600		232	0	WW
Driftwood Cove	67	120	32	50		50	83	KPUD
Eldorado Hills	153	157	69	225		210	254	KPUD
Emerald Heights	84	92	90	150		152	95	
Erland Point Water Co	936	Unspec	1344	900	0.25	500	385	
Foss Road	42	51	-	-		-	35	WW
Fragaria Landing	85	86	32	98		177	28	
Gala Pines Water	52	52	54	154		150	50	KPUD
Glenwood Station	60	62	25	100		100	47	WW
Harbor Heights	71	71	22	100		135	20	WW
Hintzville Acres	66	66	32.5	105		82	11	WW
Holly	84	107	26	110		85	30	NWW
Horizons West	998	Unspec	449	856		1,210	555	WW
Indian Hills Estates	141	148	75	100		110	31	KPUD
Indianola Water	699	Unspec	300.4	500		481	287	KPUD
Island Lake	316	441	92	80		140	209	AU
Island Utility	171	455	336	300		310	406	KPUD
Jackson Park Naval Hospital	320	Unspec	-	-		-	3,500	
Johanson	54	56	-	-		-	35	WW
Keyport Water	422	Unspec	858	650		600	401	KPUD
Kitsap Memorial State Pk	38	50	-	-		-	20	

50+ Connections System Name	Connections(1)		Water Rights (2)			System Information		
	Existing	Approved	Qa (afy)	Qi (gpm)	Qi (cfs)	Source Capacity (gpm)(2)	Storage Capacity(1) (gal in 1,000)	System Owner/ Op (1,3)
Kitsap West MHC Water Co	96	146	45	250		80	7	
Little Tree	54	54	36	100		70	35	WW
Long Lake View Est 2 5	364	399	152.4	260		212	187	KPUD
Mainland View Manor	54	57	32.5	150		150	0	WW
Manchester Water District	3,253	Unspec	1,673.7	2,260		3,630	3,200	
Martell Mobile Manor	79	79	39.5	171		140	38	NWW
McCormick Woods	803	Unspec	450	600		1,830	569	
Meadowmeer	306	335	150	250		320	225	
Miller Bay	420	460	112	200		170	167	KPUD
Minter Creek Rapids	49	55	93	250		235	0	WW
Naval Base Kitsap At Bangor (Subbase Bangor)	2,348	Unspec	N/A	N/A		3,050	3,500	
Naval Base Kitsap At Bremerton (Puget Sound Naval Yard)	1,042	Unspec	N/A	N/A		INPORT	2,500	
Naval Base Kitsap At Keyport (Navy Undersea War Ctr.)	176	Unspec	N/A	N/A		1,000	600	
Navy Yard Park	105	121	48	52		52	110	KPUD
Newberry Hill	76	140	1,720	1,950		100\200	749	KPUD
North Bainbridge Water Co	1,800	Unspec	1974	1475		911	842	KPUD
North Peninsula	4,975	Unspec	2,341.5	1,880		1,880	2,602	KPUD
North Perry Ave Water District	7,589	Unspec	4,089.6	4,540		3,560	4,750	
Olalla	74	99	55	130		130	24	WW
Olympic View Mobile Manor	76	76	13	26		70	5	PLC
Parkview Terrace	806	1067	587.1	748		1,580	699	WW
Pine Lake Mobile Home Est 1 3	79	82	48.6	112		138	0	
Port Gamble	48	61	-	-		-	46	KPUD
Port Madison Water Company	100	144	80	30		158	65	KPUD
Port Orchard Water Dept	3,132	Unspec	2,330	1,600		2,600	4,300	
Poulsbo, City Of	5,396	Unspec	2,147	1,940	1.2	2,060	3,050	
Priddy Vista	83	85	56	47		123	47	KPUD
Rockaway Beach Water	69	88	80	34		80	132	
Rocky Point Water District 12	687	1,000	N/A	N/A		INPORT	0	

50+ Connections System Name	Connections(1)		Water Rights (2)			System Information		
	Existing	Approved	Qa (afy)	Qi (gpm)	Qi (cfs)	Source Capacity (gpm)(2)	Storage Capacity(1) (gal in 1,000)	System Owner/ Op (1,3)
Sandy Hook Park Community Club	97	189	80	160		57	61	NWW
Seabeck	212	300	3,000	2,000		600	580	KPUD
Silverdale Water Dist 16	8,688	Unspec	4,664.9	4,835	0.78	6,730	5,184	
South Bainbridge	1,145	1,416	902.5	767	0.11	625	807	KPUD
Strattonwood	80	99	40.5	160		160	37	WW
Strawberry Hill	94	94	83.7	125		125	80	KPUD
Sunnyslope	375	455	1,456.6	200		270	375	
Suquamish	1,470	Unspec	800	1,650		1,240	816	KPUD
Surfrest Park Water Company	48	54	47	105		110	50	KPUD
Tahuyeh Lake Community Club	224	259	2,000	334		196	106	NWW
Viewside Community	49	64	36	125		175	40	KPUD
Vinland	1,258	Unspec	1,008	1,183		1,530	1,150	KPUD
West Kitsap	665	740	596	1,475		-	278	KPUD
West Sound Utility District #1	7,707	Unspec	-	-		-	4,100	
Wicks Lake Ranches	228	355	142	300		225	56	WW
Total	88,741	11,282	57,680.8	56,239	42.94	63,216	84,898	

Notes:

¹ Data obtained from Department of Health Drinking Water Sentry Database September 2015

² Data from 2012 Kitsap County Capital Facilities Plan

³ System Operator or Owner: AU –Aquarius Utilities; COB – City of Bremerton; COBI – City of Bainbridge Island; COPO – City of Port Orchard, KPUD – Kitsap Public Utility District; NWW – Northwest Water; PLC – Peninsula Light; WW – Washington Water Service

Qa = Annual Quantity; Qi = Instantaneous Quantity; afy = Acre Feet per Year; gpm = gallons per minute; cfs = cubic feet per second.

Unspec – Unspecified by DOH – System sets capacity; NA = Not Applicable

Note: Totals are shown for systems with multiple water rights, not by water system name. This table may not present water rights information pertaining to those systems for which the owner’s name differs from the water system name.

All of the Group “A” water systems inventoried in Exhibit 4-125 for Kitsap County have sufficient water resources to meet existing average demand. See Exhibit 4-126.

Exhibit 4-126. Summary of Existing Water Rights Information^(1,2)

	North Kitsap	Bainbridge Island	Central Kitsap	South Kitsap	Total
Ground Water Rights					
Qa (afy)	10,965	10,282	26,649	17,044	64,940
Qa (mgd)	9.78	9.17	23.77	15.2	57.93
Qi (gpm)	12,864	11,618	26,424	23,452	74,358
Qi (mgd)	18.52				
Surface Water Rights					
Qa (afy)	762	102	715	626	2205
Qa (mgd)	0.68	0.09	0.64	0.56	1.97
Qi (cfs)	28.89	2.71	38.13	41.26	110.99
Qi (mgd)	0.04	0	0.05	0.06	0.16
Total					
Qa (mgd)	10.46	9.26	24.41	15.76	59.9
Qi (mgd)	18.57	16.73	38.1	33.83	107.24

Notes:

Data from 2012 Kitsap County Capital Facilities Plan.

All water rights, permits, and certificates within Kitsap County, including municipal, commercial/industrial, domestic, irrigation, and rights for all other purposes of use.

Qa = Annual Quantity; Qi = Instantaneous Quantity; afy = acre-feet per year; cfs = cubic feet per second; mgd = million gallons per day

Responses from water purveyors indicate that a majority of the systems in Kitsap County have a range of deficiencies when meeting the requirements as outlined in the Kitsap County Uniform Fire Code. These systems generally need to increase the size of piping, need to install additional looping to increase water pressure for fire flow, or increase frequency of hydrant placement to meet spacing requirements.

Kitsap Public Utility District Water System Facilities

The general characteristics of five major water systems managed by the KPUD are summarized below. Detailed information on each system is included in Exhibit 4-125.

Eldorado Hills. Eldorado Hills is located in Section 31 and 32, Township 25N, Range 1E. It serves an area that ranges from approximately 100 feet to 500 feet in elevation. Eldorado Hills serves only residential customers.

Keyport Water System. A majority of the Keyport Water System is located in Section 35 and 36, Township 26N, Range 1E, along the south end of Liberty Bay, north of Bremerton along the western shores of the Puget Sound. The remainder of the system is situated in Sections 1 and 2, Township 25N, Range 1E. The topography within this system also varies substantially, rising from sea level to approximately 260 feet. The water system supplies a mix of residential, multi-family, and commercial uses within Keyport.

North Peninsula. The North Peninsula water system was created in 1995 through the consolidation of seven District systems, including Kingston, Hansville, Jefferson Beach, Jefferson Point, Gamblewood, Cedar Acre 5, and Kingston Farms. The North Peninsula Water System is located on the northern end of the Kitsap Peninsula between the communities of Jefferson Beach and Hansville. The system serves residential and commercial customers.

Suquamish Water System. The Suquamish Water System includes Indianola, Miller Bay, and Suquamish. It is located along Puget Sound north of the Agate Passage Bridge in Sections 8, 9, 16, 17, 20, 21, 28 and 29, Township 26N, Range 2E. Approximately 75 percent of the system is within the Port Madison Indian Reservation. The system serves a diverse mix of residential and commercial customers.

Vinland. The Vinland system was formed in October 1994 through the intertie of the Edgewater Estates and Bella Vista systems. The system is located north of the Bangor Submarine Base in Sections 4 and 5 of Township 26N, Range 1E and Section 27, Township 27N Range 1E. The topography within the area rises from sea level near Hood Canal to elevations of 260 feet along Pioneer Way and 280 feet at Edgewater Estates to the north. As reported in the 2012 Kitsap County CFP, the District is under contract with the City of Poulsbo to sell 120 gpm continuously from the Vinland system.

Municipal Water Systems

City of Bremerton. The City of Bremerton Water Utility's system serves over 54,000 residents in Bremerton and portions of Kitsap County, including the Gorst area to the south and the western portion of the Manette Peninsula in central Kitsap County, from the city limits to Bucklin Hill Road. The current service area includes approximately 8,724 acres within the Bremerton City limits and approximately 3,376 acres within Kitsap County. This description does not include other areas with service area agreements, such as PSNS, Jackson Park, and Rocky Point Water District, or the City of Port Orchard. In 2004, the city assumed the Tracyton water system.

The City of Bremerton Water Utility service area is essentially contiguous with the surrounding water purveyors. Erland Point Water District is located at the northwestern boundary of the Bremerton Water Utility service area. The Silverdale Water District is to the northeast. The City of Bremerton Water Utility service area is bounded to the east by the North Perry Avenue Water District, and to the south by the City of Port Orchard and the Sunnyslope Water Districts.

City of Port Orchard. The Port Orchard existing service area includes the majority of the current city limits, as well as the annexed community of McCormick Woods in the western portion of the service area. The City maintains service to the majority of its residents and a variety of commercial and governmental activities within the City limits, and the West Sound Utility District serves a small area in the eastern portion of the City.

State Highway 166 extends along the north of the city and travels eastward from it. Commercial development has typically occurred along the corridor. Since the opening of the Port Orchard Bypass, commercial development has begun to accelerate in the Bethel corridor. Residential development is occurring primarily in the center of the city and in the McCormick Woods subdivision within the City UGA.

The northern half of the city has the greatest population density. The property development becomes more rural toward the south. It is the policy of the city to provide utility service outside its corporate limits if the city council approves the action.

City of Poulsbo. The City of Poulsbo is a community of about 9,950 people located at the north end of Liberty Bay in Kitsap County. The center of the city is on the east shore of the bay about one mile south of the head of the bay. The city extends around the head of the bay and about 0.5 mile south on the west side, and the city limits are about two miles down the east side of the bay. The incorporated area extends up from the shore into the low hills. It reaches elevations of 300 to 400 feet on the east, and 100 to 200 feet on the north and west.

The City has a policy of requiring new customers outside city limits to file petitions for annexation and to provide power of attorney to the mayor to file petitions of annexation. This has assured that the water system service area is within the City of Poulsbo.

Other Water Systems

West Sound Utility District. West Sound Utility District was formed by the consolidation of Annapolis Water District and Karcher Creek Sewer District in November 2007. The district provides potable water in the Port Orchard urban area and south Kitsap County. It serves from Watauga Beach to Long Lake and includes Beach Drive, East Port Orchard, south of Sedgwick Road, and portions of the City of Port Orchard. The 8.3 square miles of service area with three primary pressure zones range from sea level to an upper pressure zone of 487 feet.

Manchester Water District. The Manchester Water District serves the Southworth, Colby, and Manchester areas. The district's southern boundary borders Sedgwick Road and extends to Colvos Passage of Puget Sound. To the west, the boundary follows Woods Road and a portion overlaps into the Annapolis (now West Sound) Water District.

The existing water system serving the district is composed of two service levels. There is a storage reservoir in each subsystem. These service levels are delineated by the 180-foot contour running through the district. The low-level system (elevation 275 feet) serves the majority of the customers. The high level (elevation 430 feet) system has a majority of the Water District supply and storage capacity.

North Perry Avenue Water District. North Perry Avenue Water District extends from Illahee to Keyport Road along Port Orchard Bay and is bounded to the south and west by the City of Bremerton. Although the two systems are connected, this interconnection is not currently utilized. However, it could be activated to aid either district under emergency conditions.

Silverdale Water District bounds North Perry Avenue Water District to the west. The long-range plan for the North Perry Avenue and Silverdale districts is to enter into an agreement to intertie strictly for emergency use. A portion of North Perry Avenue Water District's service area west of Central Valley Road was designated an uncontested overlap with Silverdale Water District. This designation took into consideration demand and growth factors to the area, and therefore no further changes to the North Perry Avenue service area are anticipated in the near future.

KPUD bounds North Perry Avenue Water District to the north. At the end of 1989, the KPUD took over a small section of the north end of the North Perry Avenue Water District. This change had a minimal effect on the North Perry Avenue water system because the rural area had only a minor influence on the overall demand.

Rocky Point Water District. The Rocky Point Water District serves an area on the west side of City of Bremerton that is outside the city limits and generally encompasses the peninsula known as Rocky Point. The southern boundary is Kitsap Way. The majority of the system was constructed in the early 1940s, but several extensions have been made since that time to complete the system as it exists today. The City of Bremerton's existing water systems surround the district. The system serves mostly residential customers, with a few commercial customers adjacent to Kitsap Way in the southern end of the district. There is some vacant land in the district that could provide space for the construction of additional residential units. However, part of the area is not suitable for septic tanks, which will likely preclude home construction at this time. Therefore, it is not anticipated that much expansion will occur in the near future.

Silverdale Water District. The Silverdale Water District provides water service to approximately 8,688 customer connections within the district's retail water service area (DOH, 2015), which primarily serves the community of Silverdale and its outlying areas. The district's existing retail service water service area comprises an area of approximately 25.22 square miles within unincorporated Kitsap County according to their 2013 Comprehensive Water System Plan. This area includes portions of the Silverdale and Central Kitsap UGAs. The current population served by the district is estimated at 20,665 (DOH, 2015).

Sunnyslope Water District. The service area includes the community of Sunnyslope primarily south of SR 3, northeast of the Bremerton National Airport, and east of McCormick Woods. The 2012 Kitsap County CFP reported that there is an approximately 1,600-acre service area that crosses the highway and is contiguous with the City of Bremerton watershed. The district serves Sunnyslope Elementary School and several commercial businesses, but primarily serves single-family residential units at one dwelling unit per acre or greater.

Level of Service Capacity Analysis

Exhibit 4-127 from the CWSP shows the projected water demands for the county in 2010, 2020, and 2030. These calculations were based on the Puget Sound Regional Council's (PSRC) demographic forecasts for each forecast analysis zone (FAZ), on past water consumption rates and peaking factors, estimates of future commercial/industrial demand, and effects of conservation. Each of these is described in more detail in the following paragraphs.

The CWSP used water consumption rate estimates of 356 gallons per household per day (gphpd) inside UGAs and 237 gphpd outside UGAs, and a peaking factor of 2.32 to calculate future water demand. These figures are based on average trends in several representative water systems within the county. PSRC demographic forecasts were made at the FAZ level, and then FAZs, UGAs, and sub-areas were used to assess water demand and water use characteristics. When water districts plan for future growth, each calculates future demand based on past water use trends within the individual district.

Since rate estimates are based on past water consumption rates and do not account for the possibility of a new, large commercial or industrial water consumer, it was assumed in the CWSP that between 2000 and 2010 new industries with a total demand of 1.25 mgd would locate in the City of Bremerton's service area, while an additional 0.25 mgd of new industrial demand would develop elsewhere throughout the County. Additional new industrial demands of these same amounts were estimated to develop between the years of 2010 and 2020, and between 2020 and 2030 an additional 0.5 mgd industrial demand would develop in the City of Bremerton.

Effects of conservation were also incorporated into demand calculations to account for implementation of conservation and efficiency measures. WATERPAK, an organization of the larger water purveyors, has pursued an effective conservation program over the past decade. In most cases, larger systems have reduced water losses below ten percent of their water production. For the CWSP, a one percent per year reduction in water supply requirements was assumed for years 2001 through 2010. Further reductions beyond 2010 were not included, based on the assumption that the majority of conservation gains, using current technology, will likely be realized by that time.

Exhibit 4-127. Water Demand Projections (in mgd) from the CWSP

Year	Average Day Demand ⁽¹⁾	Maximum Day Demand ⁽²⁾
2010	30.03	69.67
2020	37.57	87.16
2030	42.89	99.5

Notes:

¹ Based on per household approach, including conservation and additional industrial water supply requirements.

² Based on peak day factor of 2.32

Source: Kitsap County Water Utility Coordinating Committee. 2005 (CWSP Table 7-10 Kitsap County Water Supply Requirement Projections (in mgd))

Capital Facility Plan Growth Estimates and Provider Plans

Population estimates used in functional plans prepared by the water purveyors vary from the estimates used in the preparation of this CFP. This is attributable to two factors. The County’s population estimates for each district are based on transportation analysis zones which overlap but do not coincide with the district’s water service area boundaries. The result is a likely overestimation of the current and future population of each district. Further, water districts’ baseline population estimates are taken from existing connections, which are converted to population estimates through persons per household assumptions. This approach does not account for households served by private systems and therefore may result in an under-estimate of actual population located within the district service area (but not an under-estimate of actual population served by the district).

Capital Projects and Funding

West Sound Utility District has 56 maintenance and distribution water projects planned through the year 2032. Exhibit 4-128 and Exhibit 4-129 summarize costs and revenues. Exhibit 4-130 below shows the projected year and cost of the projects in detail.

Exhibit 4-128 – Water Systems – West Sound Utility District Capital Facilities Project Costs, 2015-2036 (All Amounts in 2014 \$1,000)

Category Summary	Costs 2016-2021	Cost 2022-2036	Total Cost
Capacity	\$2,942	\$7,589	\$10,531
Non-Capacity*	\$11,298	\$7,658	\$18,956
Sum	\$14,240	\$15,247	\$29,487

* Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency

Source: West Sound CIP, 2015-2034

Exhibit 4-129 – Water Systems – West Sound Utility District Capital Facilities Project Revenues, 2015-2036 (All Amounts in 2014 \$1,000)

Revenue Source	Revenues 2016-2021	Revenues 2022-2036	Total Cost
OI	\$9,475	\$10,063	\$19,538
OI/Dev	\$0	\$550	\$550
OI or RB	\$2,165	\$0	\$2,165
Dev	\$0	\$4,634	\$4,634
RB	\$2,600	\$0	\$2,600
Sum	\$14,240	\$15,247	\$29,487

Funding Key: OI = Operating Income (Rates); Dev = Developer Funded/Contributed; RB = Revenue Bonds Source: West Sound CIP, 2015-2034

Exhibit 4-130. Water Systems – West Sound Utility District Capital Facilities Projects and Financing 2015-2036
(All numbers are in 2014 \$1000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
Water Supply						
<p>S-1 Salmonberry Aeration Facility Upgrades</p> <p>The existing capacity of the Salmonberry Aeration Facility Booster Pump Station (i.e., the two existing pumps that convey water from the aeration clearwell to the Salmonberry Reservoir) limits the combined pumping capacity of this site to 1,200 gpm, although the total combined source capacity of Wells 14, 17, and 21 is greater at approximately 1,850 gpm. This project would increase the pumping capacity of the Aeration Facility Booster Pump Station by installing three pumps each with a capacity of approximately 1,000 gpm. Two pumps would therefore be able to convey the combined capacity of the three wells, with one pump available for redundancy. In addition, the volume of the clearwell will be expanded to approximately 20,000 gallons to improve the operational efficiency of the facility (i.e., by reducing booster pump cycling due to short on/off levels). The conceptual-level cost estimate developed for this project assumes that portions of the existing aeration facility and structure will be retained to the extent possible.</p>	√	OI	\$270			\$270
<p>S-2 Construct Well 22 Infrastructure</p> <p>Well 22 has been drilled and developed. Drawdown pump tests have indicated a well production rate of 500 gpm. This project involves installing a well pump and associated wellhead infrastructure and site piping. Chlorine injection would be installed for disinfection prior to connection with the distribution system. This project would increase the District's supply capacity to serve long-term growth in the system. Currently, the District plans to bring Well22 online before Well9R, due to water quality concerns with that new source, as described below.</p>	√	OI/Dev			\$500	\$ 500
<p>S-3 Construct Well 9R Infrastructure</p> <p>Well 9R has been drilled and developed as a replacement well to the original Well 9. Drawdown tests for this well indicate a reliable yield of 200 gpm. However, water quality tests indicate levels of manganese (0.076 mg/L) above the EPAs Secondary Maximum Contaminant Level (MCL of 0.05 mg/L). This project involves installing a well pump and associated wellhead infrastructure and site piping. The disinfection system installed for Well 22 would be sized and designed to accommodate water from Well 9R, and would likely be sufficient to address the hydrogen sulfide concern.</p>	√	OI/Dev			\$50	\$ 50

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
<p>S-4 Develop New Source, Well 23 This project would install a future Well 23, most likely in the southern portion of the system for future source capacity. The timing, magnitude, and location of such a source will be further considered in the future as the District nears the need for such capacity increases.</p>	√	Dev			\$1,500	\$1,500
Interties						
<p>INT-1 Manchester Intertie (PRV and Pump), 50% Cost Share Between Districts This project involves a new intertie with the Manchester Water District water system. A PRV and pump will be installed on Beach Drive and Beaver Creek Road near the abandoned Watauga Wells. This will increase supply reliability to the Beach Drive area which is currently connected with a single 8-inch water main to the 314 pressure zone. The project cost assumes a 50% cost share between the two Districts.</p>		OI	\$75			\$75
<p>INT-2 Port Orchard Intertie (Including Pump and Check Valve) The project would install a pump and associated enclosure and appurtenances at the existing intertie with the City of Port Orchard's water system. The hydraulic grade line in Port Orchard's system varies between 380'- 390'. A pump and check valve will be installed to enable the District to pump water into the City's system.</p>		OI			\$70	\$70
Well Improvements						
W-1 Annual Well Rehabilitation		OI	\$180	\$360	\$660	\$1,200
W-2 Construct Well #19 Pumphouse		OI	\$80			\$80
W-3 Replace Well #1/#5 Pumphouse		OI		\$500		\$500
W-4 Install Onsite Generator at Well #1		OI		\$60		\$60
W-5 Install Onsite Generator at Well #20		OI		\$60		\$60
W-6 Replace Well #16 & #17 Pumphouse		OI		\$500		\$500
W-7 Replace Salmonberry / Well #21 Pumphouse		OI			\$300	\$300
Water Storage						
<p>ST-1 Well 1 Reservoir Replacement This project would replace the existing Well 1 Tank. The existing tank is open on its top, and for the purpose of increasing security to the water storage, a new tank will be installed that is closed.</p>		OI	\$305			\$305
ST-2 New South Reservoir	√	Dev			\$1,505	\$1,505

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
This project would install a new storage tank in the south portion of the 487 pressure zone. A location has not been selected, and for planning purposes it is assumed the new reservoir would provide 0.5 million gallons.						
ST-3 New Reservoir (Joint with Port Orchard) This project would install a new reservoir shared between the District and the City of Port Orchard. The new reservoir is assumed to be 1.0 million gallons in size.	√	Dev			\$1,500	\$1,500
ST-4 Demolish Karcher Springs Reservoir The old Karcher Reservoir is not used in the water system and would be demolished in this project. Project cost will include demolition, disposal, and restoration of the site area.		OI	\$65			\$65
Water Pump Stations						
PS-1 Replace Powell Booster Pump House and Pumps This project would replace the existing Powell Booster Pump House and install new pumps.		OI	\$100			\$100
PS-2 Karcher Pump Station Improvements – Upsize Pump and Wire, Correct Ground Issues This project would provide engineering support to develop a plan to move the booster pump control valves out of the vaults or add additional stages to the well pumps eliminating the need for the booster pumps. The pump station capacity will be increased and electrical ground issues will be corrected.		OI	\$30			\$30
Water Distribution System						
D-1 Annual Pipeline Replacement Program (aging lines/deadends, multiple projects) This is an annual program to replace pipe that has unexpectedly experienced water quality issues, high failure rates, or become impacted by a Kitsap County Road Department Capital Improvement Project.		OI	\$150	\$300	\$550	\$1,000
D-2. Demolish Watanga Reservoirs		OI		\$300		\$300
D-3 Install 1,300' of 12" DI watermain on Bethel Rd from Salmonberry Rd to Walmart Install approximately 1,300 LF of 12-inch ductile iron (DI) pipe along Bethel Road from Salmonberry Road to an existing 12- inch watermain near Walmart. This project increases fire flow to the commercial area in the vicinity of Lund Avenue and Bethel Road.	√	OI	\$277			\$277
D-4 Install 2,400' of 12" OJ watermain on Bethel Rd from Salmonberry Rd to Sedgewick Rd Install approximately 2,400 LF of 12-inch DI pipe to replace the existing 8-inch watermain on Bethel Road from Salmonberry Road to Sedgewick Road. This project increases fire flows in the commercial area at Sedgewick Road and Bethel Road.	√	OI	\$516			\$516

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
<p>D-5 Install 2,300' of 12" DI watermain on Bethel Rd from Fred Meyers to Oregon St Install approximately 2,300 LF of 12-inch DI pipe and hydrants along Bethel Road from the Fred Meyers to connect to an existing 8-inch watermain at Oregon Street. This project increases fire flow in a commercial area along Bethel Road south of Sedgwick Road and in the residential area along Cedar Road.</p>	√	OI		\$674		\$674
<p>D-6 Install 500' 12" watermain on Mile Hill Dr from 4586 to Baby Doll Rd Install approximately 500 LF of 12-inch DI pipe to replace an existing 6-inch watermain on Mile Hill Drive from street number 4586 to Baby Doll Road. This project increases fire flow to the northeast portion of the 487 pressure zone in the vicinity of Foss Road, Horstman Road, and Baby Doll Road. It will also decrease the number of leaks due to the existing system's substandard pipe.</p>	√	OI	\$202			\$202
<p>D-7 Install 550' of 8" watermain on Grand Fir Pl from Fire Hydrant to Dead End Install approximately 550 LF of 8-inch DI pipe to replace the existing 6-inch watermain along Grand Fir Place from the fire hydrant to the end of the street.</p>		OI		\$94		\$94
<p>D-8 Install 700 LF of 8" DI Pipe on Wynn Jones, Install PRV on Wynn Jones, and on Beach Drive. This will eliminate the Watanga Storage Tanks</p>		OI	\$200			\$200
<p>D-8 Install 225 LF of 8" DI Pipe to Connect Dead End Mains on Aiken</p>		OI	\$40			\$40
<p>D-9 Replace 1,500' of 4" with 8" watermain on Lidstrom Rd from Beach Dr to Lidstrom Pl, 350' of 6" with 8" on Lidstrom from Rama Drive to 350' East Install approximately 1,500 LF of 8-inch DI pipe to replace the existing 4-inch AC watermain on Lidstrom Road from Beach Drive to Lidstrom Place. This project will increase a small diameter pipe AC watermain.</p>		OI	\$325			\$325
<p>D-10 Install 750' of 8" watermain on Downing Pl from Higgins Rd to end of Downing Pl Install approximately 750 LF of 8-inch DI pipe on Downing Place from Higgins Road to the end of Downing. This project will connect new services to the water system.</p>	√	Dev			\$129	\$129
<p>D-11 Replace 1,300' of 6" AC with 8" watermain on Colonial Ln from Salmonberry Rd to Berger Ln Install approximately 1,300 LF of 8-inch DI pipe to replace the existing 6-inch AC watermain on Colonial Lane from Salmonberry Road to Berger Lane. This project will replace an AC watermain.</p>		OI			\$223	\$223
<p>D-12 Replace 1,000' of 4" AC with 8" watermain on Russell Ave from Horstman Rd to Lovell St Install approximately 1,000 LF of 8-inch DI pipe to replace the existing 4-inch AC watermain on Russell Avenue from Horstman Road to Lovell Street. This project increases fire flow to a hydrant on Russell Avenue and replaces a small diameter AC watermain.</p>	√	OI			\$175	\$175

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
D-13 Replace 900' of 8" AC with 12" watermain on Mile Hill Dr from Fircrest Dr to Harrison Ave Install approximately 900 LF of 12-inch DI pipe to replace the existing 8-inch AC watermain on Mile Hill Drive from Fircrest Drive to connect to an existing 12-inch watermain on Harrison Avenue. This project increases fire flow to the commercial area along Mile Hill Drive.	√	OI	\$224			\$224
D-14 Replace 1,100' of 4" AC with 8" watermain on Orchard Ln from Horstman Rd to Gregory Ln Install approximately 1,100 LF of 8-inch DI pipe to replace the existing 4-inch AC watermain on Orchard Lane from Horstman Road to Gregory Lane. This project increases fire flow to a deficient hydrant on Orchard Lane and replaces small diameter AC watermain.	√	OI			\$233	\$233
D-15 Replace 4,000' of 4" AC with 8" watermain on Horstman Rd from Lidstrom Rd to Peru Ave Install approximately 4,000 LF of 8-inch DI pipe to replace the existing 4-inch watermain on Horstman Road from Baby Doll Road to Peru Avenue. This project increases fire flow to hydrants along Horstman Road and replaces small diameter AC watermain.	√	OI			\$844	\$844
D-16 Replace 650' of 8" with 12" watermain on Fircrest Dr from Mile Hill Dr to Larch Ln Install approximately 650 LF of 12-inch DI pipe to replace the existing 8-inch watermain on Fircrest Drive from Mile Hill Drive to Larch Lane. This project increases fire flow to hydrants in a commercial area along Fircrest Drive.	√	OI	\$139			\$139
D-17 Replace 1,400' of 8" with 12" watermain on Mile Hill Dr from Baby Doll Rd to Saddle Club Rd Install approximately 1,400 LF of 12-inch DI pipe to replace the existing 8-inch watermain on Mile Hill Drive from Baby Doll Road to Saddle Club Road. This project increases fire flow in the vicinity of Long Lake Road and Mile Hill Drive.	√	OI			\$350	\$350
D-18 Beach Dr Connection with 13,000' of 8" Watermain Install approximately 13,000 LF of 8-inch DI pipe to provide an additional connection to the Watauga Beach area. The proposed alignment begins by connecting to an existing 8-inch watermain one Collins Road, following E Collins to Woods Road, and heading north on Woods Road to connect to an existing 8-inch water main north of Beaver Creek Road on Woods Road. This connection is between the 487 and 314 pressure zones and requires a new PRV to be installed. Based on County contour data, the location of a new PRV could be on Woods Road south of Beaver Creek Road. A final location of the PRV will be determined during design. This project improves reliability to the Watauga Beach area and increases fire flow in the area.		OI or RB		\$2,165		\$2,165
D-19 Install 2,600 LF of 12" DI Pipe on Jackson from Salmonberry to Sedgewick This project increases capacity to the SE For Future Development		OI		\$670		\$670
D-20 Construct New Water Main on Phillips Road.		RB	\$2,600			\$2,600

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
The project will provide a 12" DI Main for Future Development						
D-21 Replace 2,600' of 8" with 12" watermain on Sedgwick Rd from Phillips Rd to Long Lake Rd Install approximately 2,600 LF of 12-inch DI pipe to replace the existing 8-inch watermain on Sedgwick Road from Phillips Road to Long Lake Road. This project increases fire flow to the residential area in the southeastern portion of the 487 pressure zone.	√	OI			\$648	\$648
D-22 Replace 200' of 4" with 8" watermain on Bethel Road from 2500 to 2530 Install approximately 200 LF of 8-inch DI pipe to replace the existing 4-inch watermain on Bethel Road from an approximate street address of 2530 to 2500. This project increases fire flow to 3 hydrants in the Jefferson- Mitchell pressure zone.	√	OI			\$50	\$50
D-22 Install 2,200' of 8" on Eisenhower Avenue and Lincoln Road Install approximately 1,200 LF of 8-inch DI pipe on Eisenhower Avenue from Lincoln Avenue to Karcher Road. Abandon existing 8- inch main in backyards and move meters to the new main in the street. Install approximately 1,000 LF of 8-inch DI on Lincoln Avenue from Eisenhower Avenue to Sinclair View Drive. Move meters from backyards on Pioneer Lane to new main on Lincoln Avenue.	√	OI	\$640			\$640
D-23 Lincoln Avenue PRV Install a new PRV on Lincoln Avenue between 487 and 314 Zones to increase fire flow to the Mile Hill Drive and Mitchell Avenue area.	√	OI			\$105	\$105
Water Maintenance and Operations						
M- 1 SCADA Improvements Improvements to the existing SCADA system, such as remote chlorine residual sampling.		OI	\$150	\$300	\$550	\$1,000
M-2 Paint Interior and Exterior of Powell Tank, Install Cathodic Protection Paint Exterior of Powell Tank. Routine maintenance of an existing tank.		OI	\$129			\$129
M-3 Install 2,700 LF of 12" DI on Vanskiver Rd from Bethel to Zion Place		OI			\$700	\$700
M-4 Install 2,000 LF of 12" DI on Vanskiver Rd from Zion Place to N Van De Carr Rd		OI			\$600	\$600
M-5 Install 3,900 LF of 12" DI on N Van De Carr Rd on Bielmeir and on Phillips		OI			\$840	\$840
M-6 Install 2,600 LF of 8" DI on E. Hillcrest Dr. Connecting Saran to Woods Rd		OI			\$650	\$650
M-7 Install 5,400 LF of 8" DI on Mountain View Rd from Hillcrest to Collins		OI			\$945	\$945
M-8 Replace 350' of 1" Galvanized with 4" DI on Ahlstrom Rd E		OI	\$35			\$35
M-9 Transient Voltage Protection Install transient voltage protection measures at all pumping facilities.		OI	\$180	\$180	\$120	\$480

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in \$1,000s)						
M-10 Storage Building Installation of a storage building at the Salmonberry site.		OI		\$75		\$75
M-11 Double Check Valve Installation Purchase of parts for double check valves on private fire lines.		OI	\$90	\$60		\$150
M-12 Salmonberry Elevated Paint Interior and Exterior, Install Cathodic Protection		OI			\$800	\$800
M-13 Fircrest Elevated Paint Interior and Exterior, Install Cathodic Protection		OI	\$820			\$820
M-14 Fircrest Standpipe Repair Coating, Reseam Foundation		OI	\$120			\$120
M-15 Salmonberry Ground Paint Interior and Exterior		OI			\$200	\$200
M-16 Paint Interior of Powell Reservoir, Caulk Seams		OI			\$130	\$130
M-17 Paint Exterior of Powell Reservoir		OI			\$120	\$120
M-18 Paint Interior and Exterior of Well #1 Reservoir		OI			\$200	\$200
TOTALS			\$7,942	\$6,298	\$15,247	\$29,487

¹ Costs have not been estimated for projects in years 7-20.

Notes:

All future costs are shown in 2014 dollars. Escalation is required to determine anticipated changes in cost at time of construction/purchase.

Purpose of Project: Deficiency =Addresses deficiencies identified in the Water System Plan; Improve= Does not address a deficiency, but improves overall system operation; Growth = Required to address growth/expansion of the distribution system; O&M =Necessary for proper system maintenance.

Source of Funding: OI = Operating Income (Rates); Dev = Developer Funded/Contributed; RB = Revenue Bonds.

For projects involving ongoing annual costs the base cost is depicted as the typical annual cost (not the total for the planning period).

Source: West Sound CIP, 2015-2034.

[Note: Bremerton is updating its capital list for its Comprehensive Plan Update. Change to the tables below are anticipated prior to final County hearings and adoption.]

The City of Bremerton water capital projects for the period 2016 through 2018 include approximately \$159 million in planned improvements. Exhibit 4-131 shows the projected years and cost of projects.

Exhibit 4-131. Water Systems - City of Bremerton Capital Facilities Projects, 2016-2036
(All numbers are in 2016 – 2036 YOES, ~~2015~~ \$1000s)

Category	Revenue Sources	Costs 2016 - 2018	Costs 2019 - 2021	Costs 2022-2036	Total Costs
Repair, Replacement, or Extensions	UFA/G	\$16,568 <u>\$14,339</u>	\$18,248 <u>\$20,424</u>	\$105,659 <u>\$112,562</u>	\$140,475 <u>\$147,325</u>
Growth	UFA/G	\$605 <u>\$400</u>	\$1,316 <u>\$860</u>	\$16,299 <u>\$9,472</u>	\$18,220 <u>\$10,733</u>
Other	UFA/G	\$0 <u>\$145</u>	\$0 <u>\$0</u>	\$76 <u>\$0</u>	\$76 <u>\$145</u>
Regulation	UFA/G	\$0 <u>\$0</u>	\$206 <u>\$238</u>	\$0 <u>\$0</u>	\$206 <u>\$238</u>
Total		\$17,173 <u>\$14,884</u>	\$19,771 <u>\$21,522</u>	\$122,034 <u>\$122,034</u>	\$158,978 <u>\$158,440</u>

UFA = User fee assessment; G = Grants & ULID

Source: City of Bremerton Department of Public Works & Utilities, 2015~~2016~~; BERK, 2015~~2016~~.

Exhibit 4-132. Water Systems - City of Bremerton Capital Facilities Project Costs, 2016-2036
(All numbers are in 2016 – 2036 YOES, ~~2015~~ \$1000s)

Category Summary	Costs 2016 - 2018	Costs 2019 - 2021	Costs 2022-2036	Total Costs
Category I (Capacity Projects Required to Meet LOS)	\$390 <u>\$400</u>	\$5,542 <u>\$5,086</u>	\$9,472 <u>\$10,363</u>	\$15,404 <u>\$15,849</u>
Category II (Other Projects Needed for Maintenance and Operations)	\$16,783 <u>\$14,484</u>	\$14,228 <u>\$16,436</u>	\$112,562 <u>\$111,671</u>	\$143,574 <u>\$142,591</u>
TOTAL	\$17,173 <u>\$14,884</u>	\$19,771 <u>\$21,522</u>	\$122,034 <u>\$122,034</u>	\$158,978 <u>\$158,440</u>

Source: City of Bremerton, 2015~~2016~~; BERK, 2015~~2016~~.

Exhibit 4-133. Water Systems - City of Bremerton Capital Facilities Project Revenues, 2016-2036 (All numbers are in 2016 – 2036 YOES, ~~2015~~ \$1000s)

Category Summary	Percent Share 2016-2021*	Percent Share 2022-2036*	Revenues 2016 - 2021	Revenues 2022-2036	Total Revenues
GFC Revenue Towards Capital	14%	28%	\$5,258 \$5,182	\$34,015 \$34,015	\$39,273 \$39,197
Rate Funded System Reinvestment	10%	11%	\$3,660 \$3,607	13,811 \$13,811	\$17,471 \$17,418
Cash Financing	15%	5%	\$5,623 \$5,541	\$5,493 \$5,493	\$11,115 \$11,034
Revenue Bond Financing	61%	56%	\$22,403 \$22,077	\$68,715 \$68,715	\$91,118 \$90,792
TOTAL	100%	100%	\$36,943 \$36,406	\$122,034 \$122,034	\$158,978 \$158,440

* Based on the 2012 Water System Plan Update, Capital Funding Strategy.

Source: City of Bremerton, 2015; BERK, 2015. Source: City of Bremerton, BERK Consulting 2016

The Kitsap Public Utility District has been contacted to provide growth estimates and to obtain their capital plans. While no new information was received from the district, the growth is not substantively different than that reviewed in the County’s 2012 Capital Facility Plan. Further the district serves largely rural areas. In any case, the County requires adequate water supply at the time of development permit application.

The North Perry Water District is currently updating their CIP. Their 2015 draft list of capital improvement projects extends over the next 20 years. A summary of costs and revenues is provided in Exhibit 4-134 and Exhibit 4-135. The proposed projects are shown in Exhibit 4-136.

Exhibit 4-134. Water Systems - North Perry Water District Capital Facilities Project Cost, 2016-2036 (All numbers are in 2015 \$1000s)

Category Summary	Cost 2016-2021	Cost 2022-2036	Total Cost
Capacity	\$609	\$3,049	\$3,658
Non-Capacity*	\$1,947	\$5,492	\$7,439
Total	\$2,556	\$8,541	\$11,097

* Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency.

Exhibit 4-135. Water Systems – North Perry Water District Capital Facilities Project Revenues, 2016-2036 (All numbers are in 2015 \$1000s)

Revenue Source	Projection Years 1-6	Projection Years 7-20	Total Cost
Utility Fees	\$2,556	\$1,899	\$1,889
Developer	--	\$6,642	\$6,642
Sum	\$2,556	\$8,541	\$11,097

Source: BHC 2015

Exhibit 4-136. Water Systems - North Perry Water District Capital Facilities Projects and Financing, 2016-2036
(All numbers are in 2015 \$1000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
North Perry Avenue Water District – Water System						
California/6 th Ave to Gilberton Wells Water Main Replacement form 2” to 8”	√	Rates	\$132			\$132
Repipe and Relocate PRV at Gilberton Wells			\$56			\$56
Hillside Water Main Replacement from 2” to 6”	√	Rates	\$50			\$50
East 30 th St. Water Main Replacement 4” to 8”	√	Rates	\$60			\$60
Denny Water Main Replacement 2” to 8”	√	Rates		\$110		\$110
South Madrona Water Main Replacement 2” to 8”	√	Rates		\$132		\$132
Highway 303 8” Extension		Rates		\$156		\$156
East Sutton 8” Connection		Rates			\$90	\$90
Riddell and Pine Water Main Replacement 2” to 6”	√	Rates			\$80	\$80
Petersville/Riddell 4” CI Replacement with 8” DI	√	Rates			\$144	\$144
Trenton AC Replacement with 8” DI		Rates			\$180	\$180
Well 14 Chlorine Room Construction		Rates	\$50			\$50
Sunset Well Chlorine Room Construction		Rates	\$40			\$40
Sunset Chlorine Building Construction		Rates	\$160			\$160
Sunset Storage Building Replacement		Rates	\$480			\$480
Olympus Reservoir Flow Meter / Chlorine Analyzer Building		Rates	\$10			\$10
Sunset Reservoir Flow Meter / Chlorine Analyzer Installation		Rates	\$10			\$10
Riddell Reservoir Flow Meter / Chlorine Analyzer Installation		Rates	\$10			\$10
Install Olympus Reservoir Drain Line		Rates	\$75			\$75
Brownsville School Water Meter Move		Rates	\$15			\$15
Construct New Sunset Reservoir Equipment Carport		Rates	\$90			\$90
Keyport, Cantershire, Riddell Reservoir Seismic Evaluation		Rates	\$50			\$50
Reservoir Interior Cleaning (Every 5 Years)		Rates		\$10	\$30	\$40
Recoat Keyport 0.3 MG Reservoir		Rates		\$100		\$100

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
Recoat Sunset 0.5 MG		Rates	\$152			\$152
Recoat Sunset 2.0 MG		Rates	\$308			\$308
Perry Site – Drill Test Well	√	Rates		\$125		\$125
Perry Site – Convert Test Well To Production Well	√	Rates			\$125	\$125
Flush 315/490 (W)		Rates	\$10	\$20	\$70	\$100
Flush 345/490 (E)		Rates	\$20	\$10	\$80	\$110
Center 2 Well Rehabilitation		Rates	\$25			\$25
Well 14 Rehabilitation		Rates			\$25	\$25
Meadowdale #2 Rehabilitation		Rates			\$25	\$25
ESRI Install		Rates	\$20			\$20
Rack Server Update		Rates	\$30			\$30
Update to the District GIS Database (20130823-05)		Rates	\$20			\$20
Update to the District GIS Database (20130823-05)		Rates	\$20			\$20
New 1MG Tank in 400 Pressure Zone	√	Developer			\$2,000	\$2,000
Develop Paulson Well	√	Rates			\$200	\$200
Well Drilling	√	Developer			\$250	\$250
Acquire Future Well Sites	√	Rates			\$250	\$250
New District Office		Rates			\$600	\$600
New Water Mains (315 Pressure Zone)		Developer			\$3,156	\$3,156
New Water Mains (345 Pressure Zone)		Developer			\$1,236	\$1,236
TOTALS			\$1,893	\$663	\$8,541	\$11,097

Source: Draft North Perry Avenue CIP, 2015 (BHC)

The City of Port Orchard is currently updating their CIP. According to the *City of Port Orchard 2009 Comprehensive Water System Plan* (incorporated by reference in the 2012-2018 Capital Facilities Plan), 18 projects were identified to be completed between 2009 and 2018. Costs and revenue sources are summarized in Exhibit 4-137 and Exhibit 4-138. A detailed project list is provided in Exhibit 4-139.

Exhibit 4-137. Water Systems - City of Port Orchard Capital Facilities Project Costs, 2016-2036 (All Amounts in 2008 \$1,000s)

Category Summary	Cost 2016-2021	Cost 2022-2036	Total Cost
Capacity	\$8,650	-	\$8,650
Non-Capacity*	\$16,459	-	\$16,459
Sum	\$25,109	-	\$25,109

Source: City of Port Orchard Capital Facilities Plan 2012 – 2018/ City of Port Orchard 2009 Comprehensive Water System Plan

Exhibit 4-138. Water Systems - City Of Port Orchard Capital Facilities Project Revenues, 2016-2036 (All Amounts in 2008 \$1,000s)

Revenue Source	Revenues 2016-2021	Revenue 2022-2036	Total Revenue
Utility Fees	\$19,934	-	\$19,934
Developer	\$5,175	-	\$5,175
Sum	\$25,109	-	\$25,109

Source: City of Port Orchard Capital Facilities Plan 2012 – 2018 / City of Port Orchard 2009 Comprehensive Water System Plan.

Exhibit 4-139. Water Systems - City of Port Orchard Capital Facilities Projects and Financing, 2016-2036 (All Amounts in \$1,000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost 2016-2021	Cost 2022-2036	Total Cost
Telemetry Upgrades Upgrades of Telemetry equipment at various well and reservoir locations	√	Rates CC	\$75		\$75
Well 11 Treatment Upgrade Drilling of a new deep aquifer well that will produce 750 gpm, installing a well pump and controls, modifying treatment to include hydrogen sulfide removal, and reusing the existing chlorination system.	√	Dev. CC	\$675		\$675
Well 10 Pump, Generator, & Building Construct a small building to house the well, on-site generator, and controls.	√	Rates CC	\$650		\$650
Wells 6 & 10 Treatment Improvements This project combines treatment for the new Well 10 and the upgrade/replacement for treatment of Well 6. The new facility will be constructed on the Well 6 site. Treatment will include hydrogen sulfide, chlorination, and fluoridation. A pump station will be constructed to deliver water to both the 260 and 390 Zones as needed.	√	Rates CC	\$2,000		\$2,000
Well 10 Transition Main Design and construction of a 12-inch transmission main from the Well 10 site to the Well 6 site, then west and south along the west side of the cemetery to the extension of Kendall Street and connect to a 12-inch, 390 Zone main at that location.	√	Rates CC	\$1,600		\$1,600
Pressure Release Valves High to Low Zone This project involves installing three PRVs to provide connection between the 390 and 260 Zones to improve storage for its 260 Zone, circulation, and water quality. - Melcher/Pottery & Eaglecrest - Mitchell & Dwight - Kendall & Maple	√	Rates CC	\$165		\$165
City Hall Pump Station Upgrade The City desires to eliminate Wells 4 & 5 by transferring water rights to Well 10. By installing treatment for Well 7 at the Well 7 site, or another location, the City Hall facilities can be abandoned.	√	Rates CC	\$735		\$735
1.1 Million Gallon 580 Reservoir This project includes the construction of a new reservoir sized for ultimate development in the 580 and 660 Zones. Preliminary studies indicate the reservoir should have about 1.1 million gallons of usable storage.	√	Dev. CC	\$2,200		\$2,200

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost 2016-2021	Cost 2022-2036	Total Cost
390 to 580 Booster Pump Station Construction of a transfer booster station. This will include 2 650-gpm pumps with room for a future 600 gpm pump.	√	Dev. CC	\$450		\$450
390 to 580 12- inch Transmission Main Provide a pipeline to transfer water from the City's 390 Zone to the McCormick Woods area.	√	Dev. CC	\$1,600		\$1,600
580 to 660 Constant Pressure Booster Station Construction of a water booster station to pump from the City 580 reservoir(s) to the new 660 Zone.	√	Dev.	\$450		\$450
Melcher Street Pump Station Upgrade Install additional pumps and controls to accommodate the added transfer of water from the City 260 Zone to the 390 Zone.	√	Dev. CC	\$250		\$250
390 Zone Storage Alternatives are discussed in the Port Orchard 2009 Water System Plan.	√	Rates CC	\$500		\$500
Well 9 Water Treatment Provide treatment of Well 9 water to eliminate customer complaints. Options include filtration or discharging water to the adjacent Park Reservoir where oxidized iron/manganese can be captured.		Rates	\$850		\$850
Systems Operation Study An operations study is needed to assess system improvements to simplify the operation of the water system.		Rates	\$100		\$100
Water Main Replacement Program, Phase 1 Detailed in the Port Orchard 2009 Water System Plan Page 7-6, Table 7-1A.		Rates	\$6,306		\$6,306
East City Water Main Replacement Program Detailed in the Port Orchard 2009 Water System Plan, page 7-7, Table 7-1B.		Rates	\$2,374		\$2,374
Miscellaneous Improvements Detailed in the Port Orchard 2009 Water System Plan.		Rates	\$4,129		\$4,129
TOTALS			\$25,109		\$25,109

Legend: CC – Connection Charge, Dev. – Developer

Source: City of Port Orchard Capital Facilities Plan 2012 - 2018 / City of Port Orchard 2009 Comprehensive Water System Plan

The City of Poulsbo has identified \$13 million in capital improvement projects to the water system through the year 2036. Summary costs and revenues are shown in Exhibit 4-140 and Exhibit 4-141. The projects and revenue sources are listed in Exhibit 4-142.

**Exhibit 4-140. City of Poulsbo Water System –
Cost and Revenue Comparison (All numbers are in 2015 \$1000s)**

Category Summary	Cost 2016-2021	Cost 2022-2036	Total Cost
Capacity	\$3,730	\$4,362	\$8,092
Non-Capacity*	\$4,973	\$	\$4,973
Sum	\$8,703	\$4,362	\$13,065

Source: City of Poulsbo, BHC 2015

* Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency

**Exhibit 4-141. City of Poulsbo Water System - Project Revenues, 2016-2036
(All numbers are in 2015 \$1000s)**

Revenue Source	Revenues 2016-2021	Revenue 2022-2036	Total Revenue
Utility Fees	\$8,703	\$4,362	\$13,065
Sum	\$8,703	\$4,362	\$13,065

Source: City of Poulsbo, BHC 2015

Exhibit 4-142. Water Systems - City of Poulsbo Capital Facilities Projects and Financing (All numbers are in 2015 \$1000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
<p>Water Supply Project WS-1: Pugh Well and Lincoln Wells No. 1 and No. 2 Manganese Treatment</p> <p>The Pugh Well and Lincoln Wells have higher than normal manganese concentrations in the raw water. High concentrations cause the City to frequently have to flush its water mains and it can add an unwanted color, odor, and taste to the water. The City plans on installing a pilot test system (\$200,000) and a treatment facility (\$600,000). The treatment system would reduce or eliminate the manganese from the raw water concentration of 0.109 mg/L to below the EPA secondary MCL concentration of 0.05 mg/L in the finished water.</p>			\$800			\$800
<p>Water Supply Project WS-2: Westside Well Treatment</p> <p>The Westside well also has manganese concentrations in the raw water that are slightly higher than the EPA’s Secondary MCL. Manganese can add an unwanted color, odor, and taste to the water. The City plans on installing a pilot test system in 2015 (\$150,000) and a treatment facility in 2016 (\$450,000). The treatment system would reduce the manganese from the raw water concentration of 0.085 mg/L to below 0.05 mg/L in the finished water.</p>			\$600			\$600
<p>Water Supply Project WS-4: Big Valley Well No. 3</p> <p>The City Plans to drill, develop, and equip a third well at the Big Valley Well site. Additional source capacity is necessary to provide maximum day demand and replenish fire suppression storage by 2034 and a new 500 gpm well will provide sufficient flows.</p>	√				\$450	\$450
<p>Water Supply Project WS-5: Westside Well No. 2</p> <p>The City plans to drill, develop, and equip a second well at the Westside Well site. Existing sources will need to pump for more than 18 hours to meet MDD beyond 2019. Additional supply capacity should be installed shortly after to reduce the demand on the aquifers and equipment. This project will be re-evaluated upon completion of the long-term water supply study (WS-3).</p>	√				\$412	\$412
<p>Storage Project ST-1: Wilderness Park Reservoir Repairs</p> <p>Based on a seismic study which evaluated the City’s reservoirs, the Wilderness Park Reservoir does not meet current seismic design standards. This project will retrofit the existing reservoir to have additional ties to the foundation to resist overturning forces induced by seismic loads. The foundation itself might need to be reinforced to be able to withstand overturning loads and bearing capacity.</p>			\$500			\$500

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
<p>Storage Project ST-2: Raab Park Reservoir Replacement</p> <p>The City plans to replace the existing 150,000-gallon tanks with a 300,000-gallon tank. The existing tank does not meet seismic design standards and is at the end of its useful life. Additional capital improvements may be determined based on the findings of the evaluation.</p>			\$680			\$680
<p>Storage Project ST-3: Reservoir Coating Program</p> <p>The City plans to recoat the interior and exterior of the Finn Hill and Olhava Reservoirs. Periodic coatings need to be applied to protect the structural steel from corrosion damage. These coatings are normal maintenance.</p>				\$600		\$600
<p>Booster Station Project BS-1: Wilderness Park Booster Station Replacement</p> <p>The City plans to construct a new booster station at the Wilderness Park Reservoir site. The new booster station will transfer supply from the Low Zone to the East High Zone to eliminate the storage deficiency in the East High Zone and provide redundancy to the Pugh and Lincoln Wells. Currently, the City does not have a pumping facility to transfer supply to the East High Zone. The booster station will consist of three 750 gpm pumps, integrated control systems, standby generator, and an automatic transfer switch with a new CMU building.</p>	√		\$500			\$500
<p>Booster Station Project BS-2: 340 Zone Fire Flow Pump and Zone Expansion</p> <p>The 340 Zone currently has houses served by a pump for average day and maximum day demands but is served by gravity for fire flow. The high elevations cause pressures to drop below 20 psi during fire flow emergencies when the reservoirs are depleted of operational storage. A fire flow pump is needed to boost flows and pressures in the 340 Zone and would decrease the large dead storage in the Low Zone. This project will be coupled with a zone expansion to address the low pressure at the 4th Avenue Townhomes since work will need to be performed at the existing booster station. This project will include an additional 250 feet of pipe to expand the zone and the pumps necessary to meet projected demands.</p>	√			\$250		\$250
<p>Distribution System Project DS-1: Old Town Water Main Replacement</p> <p>The City plans to replace the undersized and aging water mains in the “old town” area located south of downtown. This area is primarily residential although a few businesses are located along the waterfront. Existing piping serving the area is approximately 9,000 LF of 4-inch water main and 5,450 LF of 6-inch water main. This project will replace 3,140 LF of 4-inch piping with 8-inch piping along 6th Avenue and Haugen Street. The new piping will serve as a “backbone” for the area and increase fire flow availability.</p>	√		\$750	\$330		\$1,080

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
<p>Distribution System Project DS-2: Viking Avenue PRV</p> <p>The Viking Ave water main currently has very high pressures (180 psi) that need to be reduced. High pressure in the main has caused pipes to burst several times. The City plans to install two PRV systems, including one at the old Viking Avenue Booster station site, to reduce pressure along this main.</p>			\$220			\$220
<p>Distribution System Project DS-3: Hostmark Transmission Main</p> <p>The City plans to install a transmission main between the Wilderness Park Booster Station (BS-1) and the East High Zone along Hostmark Street. This project will allow the City to transfer supply between the Low and East High Zones to improve supply redundancy to both areas. The project consists of approximately 3,000 LF of 12-inch water main along Hostmark Street. A new pressure reducing valve station will be installed to transfer supply from the East High Zone to the Middle Zone.</p>	√		\$500			\$500
<p>Distribution System Project DS-4: Hostmark Distribution Main</p> <p>The City plans to replace the transmission main from Caldart Avenue to the west side of SR 305 and Front Street along Hostmark Street. The existing water main is undersized and limits the flow to and from the reservoir. This project will result in an increase in available fire flow to the Low Zone and improved water quality in the area around the reservoir. The project consists of 2,200 LF of 12-inch water main on Hostmark from the Caldart Avenue to SR 305 and an additional 1,500 LF from SR 305 to Front Street.</p>	√		\$600			\$600
<p>Distribution System Project DS-5: SR 305 Crossing</p> <p>The City plans to replace the transmission main that crosses SR 305 at Hostmark. The existing water main is an old and undersized pipe that serves the downtown area.</p>	√		\$200			\$200
<p>Distribution System Project DS-6: Liberty Ridge Fire Flow</p> <p>The City plans to replace the transmission main that crosses SR 305 at Hostmark. The existing water main is an old and undersized pipe that serves the downtown area.</p>	√			\$100		\$100
<p>Distribution System Project DS-7: Water Main Replacement Program</p> <p>The City has schedule specific water main replacements for the next 6 years and will continue replacing aging water mains annually beyond the six-year timeframe. Which mains will be replaced beyond what is currently scheduled will depend on the needs of the system and the known pipe conditions at that time. To show the City is dedicated to increasing the reliability of the system and reducing DSL by replacing leaky water mains, the City has allocated \$250,000 per year for main replacement beyond 2020.</p>	√			\$500	\$3,500	\$4,000

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
Miscellaneous Project M-1: Meter Upgrade and Replacement Program The City plans to replace all existing meters in their water system. The new meters will have remote read capability and will be a higher quality magnetic meter. This project is intended to help reduce water loss and improve the efficiency of the water system.			\$350			\$350
Miscellaneous Project M-2: Telemetry System Upgrades The City plans to replace the current telemetry system. This project will upgrade the central control system so that the City will have better remote operation of its water and sewer facilities.			\$50			\$50
Miscellaneous Project M-3: Public Works Complex The City plans to construct a Public Works Complex which will provide a maintenance and operations center for the water, sanitary sewer, storm sewer, solid waste, roads, and parks departments. This project will be financed through utility reserve funds, land sales, and bond issuance. The water utility is expected to fund 20 percent of the project cost, excluding revenue generated through land sales.			\$1,173			\$1,173
TOTALS			\$6,923	\$1,780	\$4,362	\$13,065

Source: City of Poulsbo, BHC 2015

Silverdale Water District No. 16 plans 67 capital facilities projects for the 2016-2032 time period. Summary costs and revenues are shown in Exhibit 4-143 and Exhibit 4-144. Detailed projects and revenue sources are listed in Exhibit 4-145.

Exhibit 4-143. Silverdale Water District No. 16 Cost and Revenue Comparison
(All numbers are in 2015 \$1000s)

Category Summary	Cost 2016-2021	Cost 2022-2036	Total Cost
Capacity	-	-	-
Non-Capacity*	\$9,787	\$5,298	\$36,865
Sum	\$9,787	\$5,298	\$36,865

* Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency

Source: Silverdale Water District No. 16, 2015

Exhibit 4-144. Silverdale Water District No. 16 Water Systems - Project Revenues, 2016-2036
(All numbers are in 2015 \$1000s)

Revenue Source	Revenues 2016-2021	Revenue 2022-2036	Total Revenue
Utility Fees	\$9,787	\$5,298	\$36,865
Sum	\$9,787	\$5,298	\$36,865

Source: Silverdale Water District No. 16, 2015

Exhibit 4-145. Water Systems - Silverdale Water District No. 16 Capital Facilities Projects and Financing (All numbers are in 2015 \$1000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
<p>Viking Way – Viking Way Extension Install approximately 4,200 feet of 8” DI pipe along Viking Way to a proposed intertie with the PUD. This project creates a new connection with the PUD’s water system at this location</p>		Utility Fees	\$390			\$390
<p>SR 308 – Silverdale Way to Central Valley Rd Install approximately 1,400 feet of 8” DI pipe along SR 308 from Silverdale Way to Central Valley Road. This project creates a loop between two existing dead end water mains and improves fire flow and reliability.</p>		Utility Fees	\$140			\$140
<p>Mt. View Crossing Install approximately 800 linear feet of 12” DI pipe along Mountain View Road under SR 3. This project will create a new connection between Zones 4 and 5. It will provide the ability to wheel water to the PUD and to move water from the east side of the District to the west. A small booster pump station will be installed at this location and is described in the Silverdale CIP (2013-2032).</p>		Utility Fees	\$180			\$180
<p>Half Mile Road Extension Install approximately 4,200 linear feet of 12” DI pipe along Half Mile Road from Old Frontier Road to Clear Creek Road and along Clear Creek Road to Melody Lane. This project improves fire flow and reliability by creating a new connection between Zones 3.2 and 5 and by increasing looping. A pressure reducing valve (PRV) will be installed along the Half Mile Road alignment. The large pressure reducing valve should be an 8-inch valve and the small valve should be a 3-inch valve. The station should also include a pressure relief valve, sized during the design, to relieve pressures in Zone 3 (H.E. 361 feet) in the event of a failure of one of the pressure reducing valves.</p>		Utility Fees	\$390			\$390
<p>Trigger Avenue Extension Install approximately 3,700 linear feet of 8” DI pipe along Trigger Avenue from Old Frontier Road to Clear Creek Road and Clear Creek Road to Blissful Lane. This project creates a new connection between Zone 3 and Zone 5 and improves fire flow and reliability. A PRV will be installed at Old Frontier Road and Trigger Avenue as part of this project.</p>		Utility Fees	\$340			\$340
<p>Water Main Extension Projects Under \$100,000⁽¹⁾ Norbert Main Extension</p>		Utility Fees	\$80			\$80
<p>Water Main Extension Projects Between Years 2019 and 2032⁽²⁾</p>		Utility Fees				\$6,140

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
Silverdale Water District – Water Main Replacement		Utility Fees				
Silver Hills Place and Avante Drive Install approximately 3,000 feet of 12” DI pipe to replace existing 12” asbestos cement water main from Spirit Ridge Well 3 along Silver Hills Place and Avante Drive. This project increases reliability of the main pipeline from the Spirit Ridge wells 3 and 4 to the Island Lake Zone 4 Reservoir.		Utility Fees	\$390			\$390
Ridgetop Boulevard, Sid Uhnick Drive, and Chena Road Install approximately 2,900 feet of 8” DI pipe to replace existing 8”. The route will follow from Ridgetop Well Site along Ridgetop Boulevard and Sid Uhnick Drive and Chena Road to the Chena Reservoir Site. This project increases reliability of the main pipeline from Ridgetop Well and the proposed 2.0 MG Chena (Zone 1) Reservoir.		Utility Fees	\$260			\$260
Chena Road and Frederickson Road Install approximately 2,000 feet of 12” DI pipe replace existing 12” asbestos cement water main. The route will follow from Chena Reservoir Site to Bucklin Hill along Chena Road and Frederickson Road. This project increases reliability of the main pipeline from the proposed 2.0 MG Chena Reservoir to the commercial core of Silverdale.		Utility Fees	\$260			\$260
Water Main Replacement Projects Under \$100,000⁽¹⁾ Bayshore Drive, Washington Avenue, and Byron Street Willamette Meridian – Segerman to Contact Court		Utility Fees	\$84 \$84			\$168
Water Main Replacement Projects Between Years 2019 and 2032⁽²⁾		Utility Fees				\$1,610
Facilities Improvements		Utility Fees				
Chena Pump Station By adding the Chena booster station the District is building in security and redundancy to the system in case of well or power failure on the east side of the District. The District will install a standby generator making this a viable sight for meeting. The pump station capacity will be approximately 1,500 gallons per minute.		Utility Fees	\$270			\$270
Greaves Way Property Acquisition Purchase the site for the future Zone 1 reservoir and pump station.		Utility Fees	\$510			\$510
Newberry Well Co-develop a 1,000 gpm well with the PUD. The existing reservoir has an overflow elevation of 634 feet and a minimum useful storage capacity of 0.20 MG. The capacity of the reservoir is 0.75 MG.		Utility Fees	\$230			\$230
Apex Pump Station		Utility Fees	\$220			\$220

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
Facilities Improvement Projects Under \$100,000⁽¹⁾ Well Decommissioning		Utility Fees	\$50			\$50
Facilities Improvement Projects Between Years 2019 and 2032⁽²⁾		Utility Fees				\$8,020
Water System Acquisitions		Utility Fees				
Brianwood (06651Y) In discussion with the Kitsap PUD, this system can be operated by simply connecting the piping.		Utility Fees	\$290			\$290
Eldorado (22750C) In discussion with the Kitsap PUD, the system is at capacity, as new properties develop, it will make sense for the District to take over and consolidate the system into Silverdale Water District's main system. The piping in the water system also needs to be rehabilitated. Due to steep winding roads, rehabilitation will be expensive. Funding will be a major driver in this acquisition.		Utility Fees	\$3,580			\$3,580
Water System Acquisition Projects Under \$100,000⁽¹⁾ Crystal Creek (47421) Avellana (268010)		Utility Fees	\$40 \$50			\$90
Water System Acquisition Projects Between Years 2019 and 2032⁽²⁾		Utility Fees				\$730
Reclaimed Water Improvements		Utility Fees				
Convert Chena Reservoir to Reclaimed Water Storage Convert the existing Chena Reservoir for reclaimed water storage. This project will proceed after the installation of the new Chena reservoir described in project WF-3.		Utility Fees				
Main Extension to Ridgetop Jr. High Install approximately 6,400 linear feet of 18" reclaimed water main to extend an existing water main from the treatment plant to the Ridgetop Jr. High School.		Utility Fees				
Reclaimed Water Improvement Projects Between Years 2019 and 2032⁽²⁾		Utility Fees				\$5,260
Water Maintenance and Operations		Utility Fees				
Annual Water Main Replacement Program		Utility Fees	\$300		\$1,400	\$1,700
Recoating		Utility Fees	\$1,300			\$1,300
Water Right and Well Study		Utility Fees	\$90		\$980	\$1,090
Conservation Program and Leak Detection		Utility Fees	\$42		\$884	\$926
Cross-Connection Control Program		Utility Fees	\$21		\$842	\$863
Wellhead Protection Program		Utility Fees	\$36		\$872	\$908

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20	Total Cost
(All Amounts in \$1,000s)						
Comprehensive Water System Plan Update		Utility Fees	\$160		\$320	\$480
TOTALS			\$9,787		\$5,298	\$36,865

Source: Silverdale Water District No. 16, 2015

Notes:

This category condenses the projects that have a projected Capital Cost below \$100,000. See the Silverdale *Capital Improvement Program (2013-2032)* for description of these projects.

This category condenses the projects that are projected to occur after 2018. The Silverdale *Capital Improvement Program (2013-2032)* does not provide an exact year for these projects. See the Silverdale CIP for details on these projects.

The Sunnyslope Water District has identified in their *Comprehensive Water System Plan Update* (2013) 11 capital improvement projects to the water system to be done from 2016 to 2018 and beyond. Summary costs and revenues are included in Exhibit 4-146 and Exhibit 4-147. Detailed projects and estimated year of completion are listed in Exhibit 4-148.

Exhibit 4-146. Sunnyslope Water District Cost and Revenue Comparison (All numbers are in 2015 \$1000s)

Category Summary	Cost 2016-2021	Cost 2022-2036	Total Cost
Capacity	\$435	\$450	\$885
Non-Capacity*	\$115	\$0	\$115
Sum	\$550	\$450	\$1000

Source: Sunnyslope Water District, 2013; BHC 2015

* Non-Capacity: Infrastructure upgrade, water quality benefit, energy efficiency

Exhibit 4-147. Sunnyslope Water District Water Systems - Project Revenues, 2016-2036 (All numbers are in 2015 \$1000s)

Revenue Source	Revenues 2016-2021	Revenue 2022-2036	Total Revenue
Revenue Bonds	\$100	\$250	\$350
Potential State Grants & Loans	\$0	\$200	\$200
Utility Fees	\$450	\$0	\$450
Sum	\$550	\$450	\$1000

Source: Sunnyslope Water District, 2013; BHC 2015

Exhibit 4-148. Water Systems - Sunnyslope Water District Capital Facilities Projects and Financing (All numbers are in 2015 \$1000s)

Category / Project Description	Capacity Project (√)	Revenue Sources	Cost Years 1-3	Cost Years 4-6	Cost Years 7-20 ¹	Total Cost
(All Amounts in Year 2012 \$1,000s)						
Sunnyslope Water District – Water System						
Clifton Road Water Main replacements Replace 1,300 LF of 6-inch AC pipe with 8-inch PVC pipe.	√	Rates		\$130		\$130
Well No. 2 Refurbishment Refurbish Well No. 2 by removing pump, backflushing, or treating to improve performance		Rates	\$5			\$5
Reservoir Cleaning and Inspection Clean and inspect reservoir interiors.		Rates	\$10			\$10
Seismic Upgrades to Reservoirs Implement recommended changes to reservoirs per seismic study by structural engineer		Bonds		\$100		\$100
Eastview Neighborhood Water Main Replacement Replace 1,400 LF of 4-inch and 6-inch AC and steel pipe with 8-inch PVC pipe.	√	Rates		\$140		\$140
Westview Neighborhood Water Main Replacement Replace 1,200 LF of 4-inch AC and steel pipe with 8-inch PVC pipe.	√	Rates		\$120		\$120
Victory Place Water Main Replacement Replace 600 LF of 4-inch and 6-inch AC pipe with 8-inch PVC pipe.	√	Bonds			\$60	\$60
Sunnyslope Road Water Main Replacement Replace 900 LF of 6-inch AC pipe with 8-inch PVC pipe between Alameda Street and Victory Drive.	√	Bonds			\$90	\$90
Rhododendron Drive Water Main Replacement Replace 1,000 LF of 6-inch AC and steel pipe with 8-inch PVC pipe.	√	Bonds			\$100	\$100
Well No. 2 Water Main Replacement Replace 450 LF of 6-inch AC pipe with 8-inch PVC pipe.	√	Rates		\$45		\$45
Victory Drive Loop Complete 2,000 LF of 8-inch PVC pipe along Sunnyslope Road to provide better pressure service to South End.	√z	Grants/ Loan			\$200	\$200
TOTALS			\$15	\$535	\$450	\$1000

¹ Costs have not been estimated for projects in years 7-20.

Source: Sunnyslope Water District's *Comprehensive Sewer Plan Update* (2013).

5.0 BIBLIOGRAPHY

- AECOM and BERK. (2013). *Gorst Draft Planned Action EIS*. City of Bremerton.
- BERK Consulting. (2015). *Fiscal Impacts of West Bremerton UGA and Gorst UGA Annexation*. City of Bremerton: City of Bremerton.
- Brown, D. (2015). Accounting/Finance Manager.
- City of Bremerton. (2015). *2015 - 2020 Capital Improvement Plan*. City of Bremerton.
- City of Bremerton. (2015). *Fire Department*. Retrieved August 7, 2015, from City of Bremerton: <http://www.ci.bremerton.wa.us/168/Fire-Department>
- Duke, A. (2015, August 21). Chief, Bremerton Fire Department. (A. S. Satter, Interviewer)
- Fire Department*. (2015). Retrieved August 7, 2015, from City of Bremerton: <http://www.ci.bremerton.wa.us/168/Fire-Department>
- Kitsap County 2015 Budget Book. (2015). Kitsap County: Board of County Commissioners.
- Kitsap County Auditor. (2013). *Popular Annual Financial Report: Fiscal Year 2013*. Retrieved from <http://www.kitsapgov.com/aud/financial/PAFR2013.pdf>
- Kitsap County Auditor. (2014). *Popular Annual Financial Report: Fiscal Year 2014*. Retrieved from Kitsap County: http://www.kitsapgov.com/aud/financial/PAFR_2014.pdf.
- Kitsap County Public Works Department. 2015a. Roadway mileage by functional classification.
- Kitsap County Public Works Department. 2015b. 2036 countywide travel demand forecasts for Comprehensive Plan land use alternatives.
- Kitsap County Sewer Revenue Bonds Presentation. (2015). Kitsap County.
- (2015). *Kitsap County Statement of Assessments*. Kitsap County: Phil Cook, Kitsap County Assessor.
- Newlin, N. (2015, September 25). Chief, Corrections Division, Kitsap County Sheriff's Office. (T. Gunesekera, Interviewer)
- Pierce County. (June 2015). *Pierce County Comprehensive Plan*. Tacoma: Pierce County.
- Snohomish County. (2015). *Snohomish County Capital Facilities Plan*. 59.
- Steedman, G. (2015, August 25). Bremerton School District. (BERK, Interviewer)
- Washington State Office of Financial Management. (2015, 6 25). *April 1 official population estimates*. Retrieved from ofm.wa.gov: <http://ofm.wa.gov/pop/april1/default.asp>
- Whatcom County. (2015). *Capital Facilities Element*. Retrieved from Whatcom County Comprehensive Plan Update : <http://wa-whatcomcounty.civicplus.com/1170/Comprehensive-Plan-Updates>
- Zhang, T. D. (2015). *Jail Inmates at Midyear 2014*. U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.

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- Solid Waste: Pat Campbell, Keli McKay-Means, Toni Fuller
- Storm Water (Clean Water Kitsap): Chris May, Michelle Purdue, Randy Davis, Pat Kirschman
- Transportation: Greg Cioc, Jo Meints
- Washington Water Service: Kevin O'Neil (360) 438-2042)
- Wastewater (Sewer Utility): Dave Tucker, Lisa Horanyi

Capital Facilities Plan Appendix

Appendix A. Sewer System Maps 2036 – Preferred Alternative

- Kitsap County Systems: Kingston, Silverdale, Kitsap UGAs: 2016 Appendix A. Sewer System Maps 2036 –Preferred Alternative
- City of Poulsbo and Poulsbo Urban Transition Area: 2016
- City of Bremerton and Bremerton UGA: Bremerton 2014
- City of Port Orchard and Port Orchard UGA served by City: 2015
- West Sound Utility District portion of Port Orchard UGA: 2012 (see also 2015 CIP in section 4.9)



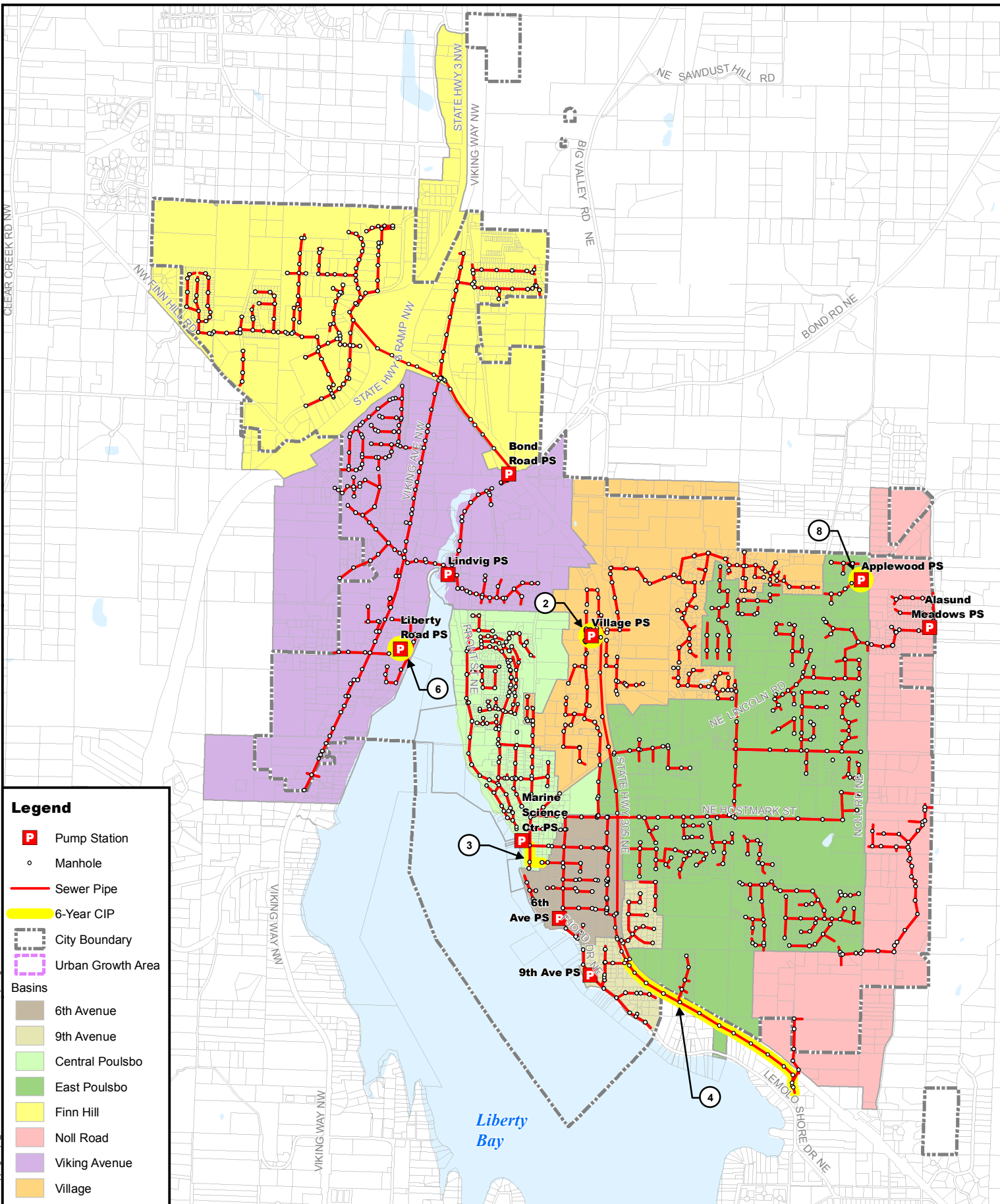
Kingston Urban Growth Area Sewer



- Legend**
- Existing Wastewater Infrastructure**
 - Treatment Plant
 - Pump Station
 - Force Main
 - Gravity Main
 - Future Wastewater Infrastructure**
 - Future Pump Station
 - Future Force Main
 - Future Gravity Collector
 - Sewer Improvements**
 - Flow Meter Installation
 - Designated Urban Growth Areas**
 - Unincorporated Urban Growth Area
 - Designated Urban Growth Areas



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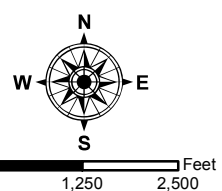
Legend

- Pump Station
- Manhole
- Sewer Pipe
- 6-Year CIP
- City Boundary
- Urban Growth Area

Basins

- 6th Avenue
- 9th Avenue
- Central Poulsbo
- East Poulsbo
- Finn Hill
- Noll Road
- Viking Avenue
- Village

This map is a geographic representation based on available information. No warranty is made concerning the accuracy, currency, or completeness of data depicted on this map. Source: Kitsap County.

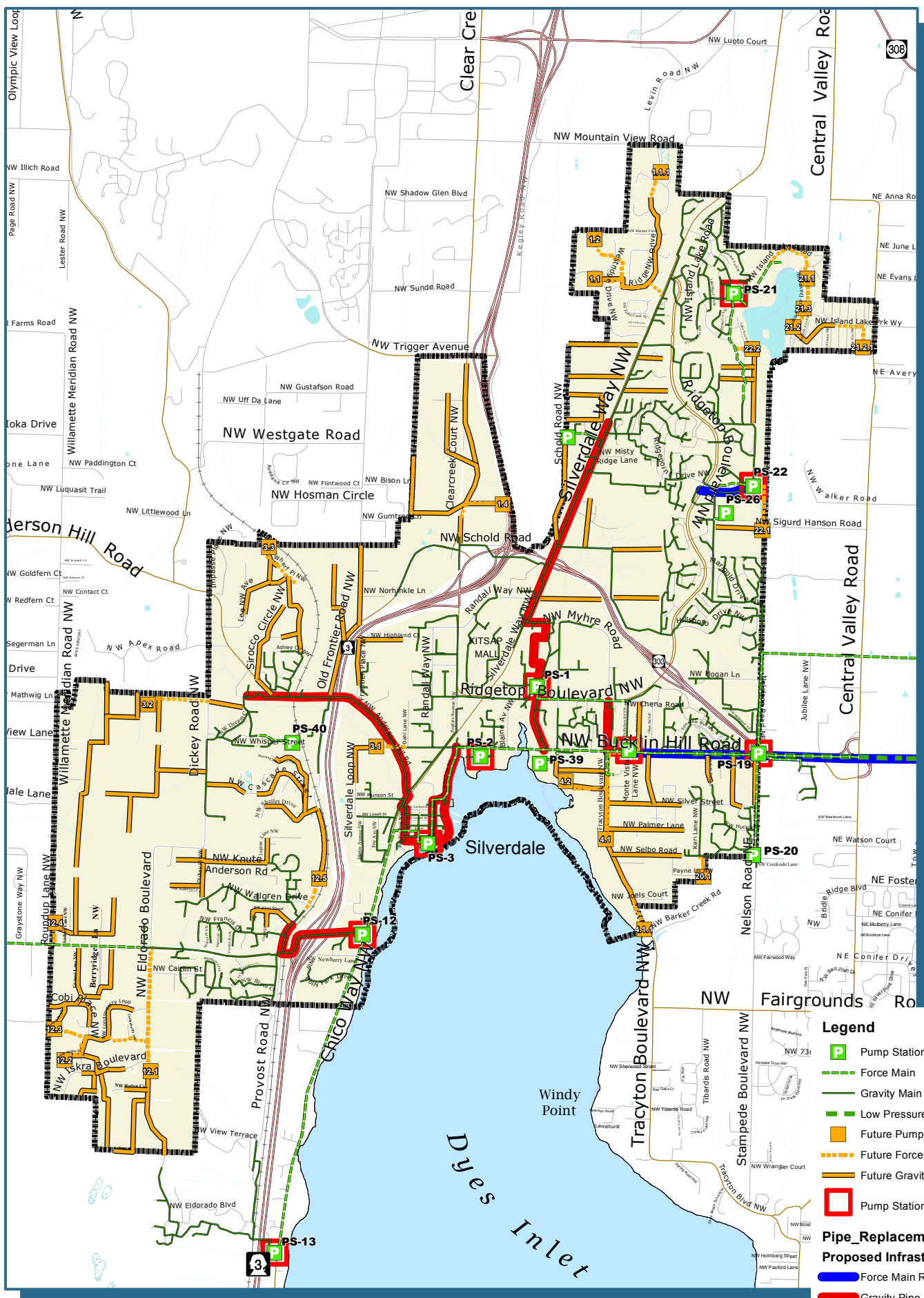


6-Year CIP
 Comprehensive Sewer Plan
 City of Poulsbo
 October 2015

Figure
7-1



Silverdale Urban Growth Area Wastewater



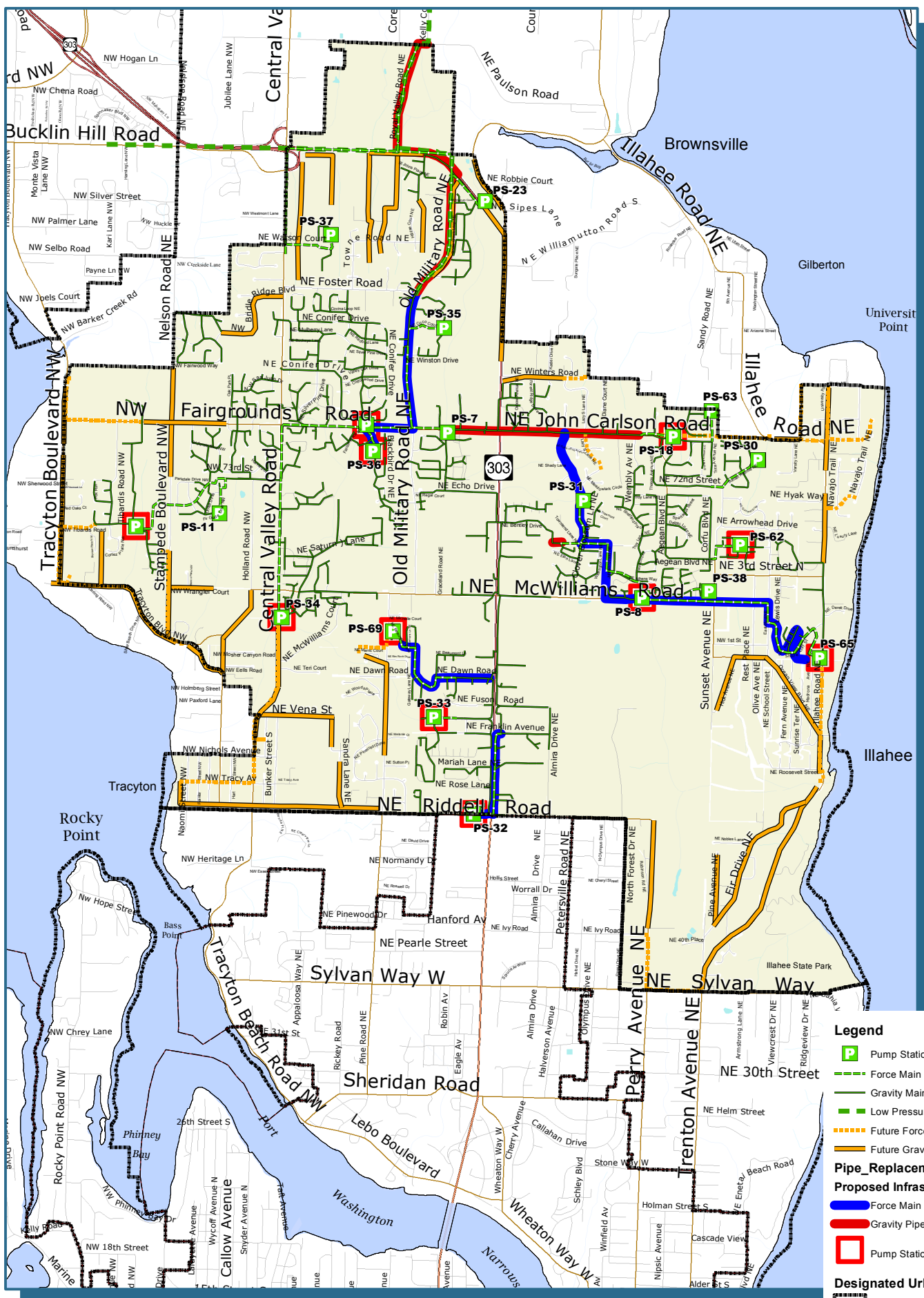
- Legend**
- Pump Station
 - Force Main
 - Gravity Main
 - Low Pressure Gravity Main
 - Future Pump Station
 - Future Force Main
 - Future Gravity Collector
 - Pump Station Upgrade
- Pipe_Replacements**
- Proposed Infrastructure Upgrades**
- Force Main Replacement
 - Gravity Pipe Replacement
 - Unincorporated Urban Growth Area
- Designated Urban Growth Areas**
- Designated Urban Growth Areas



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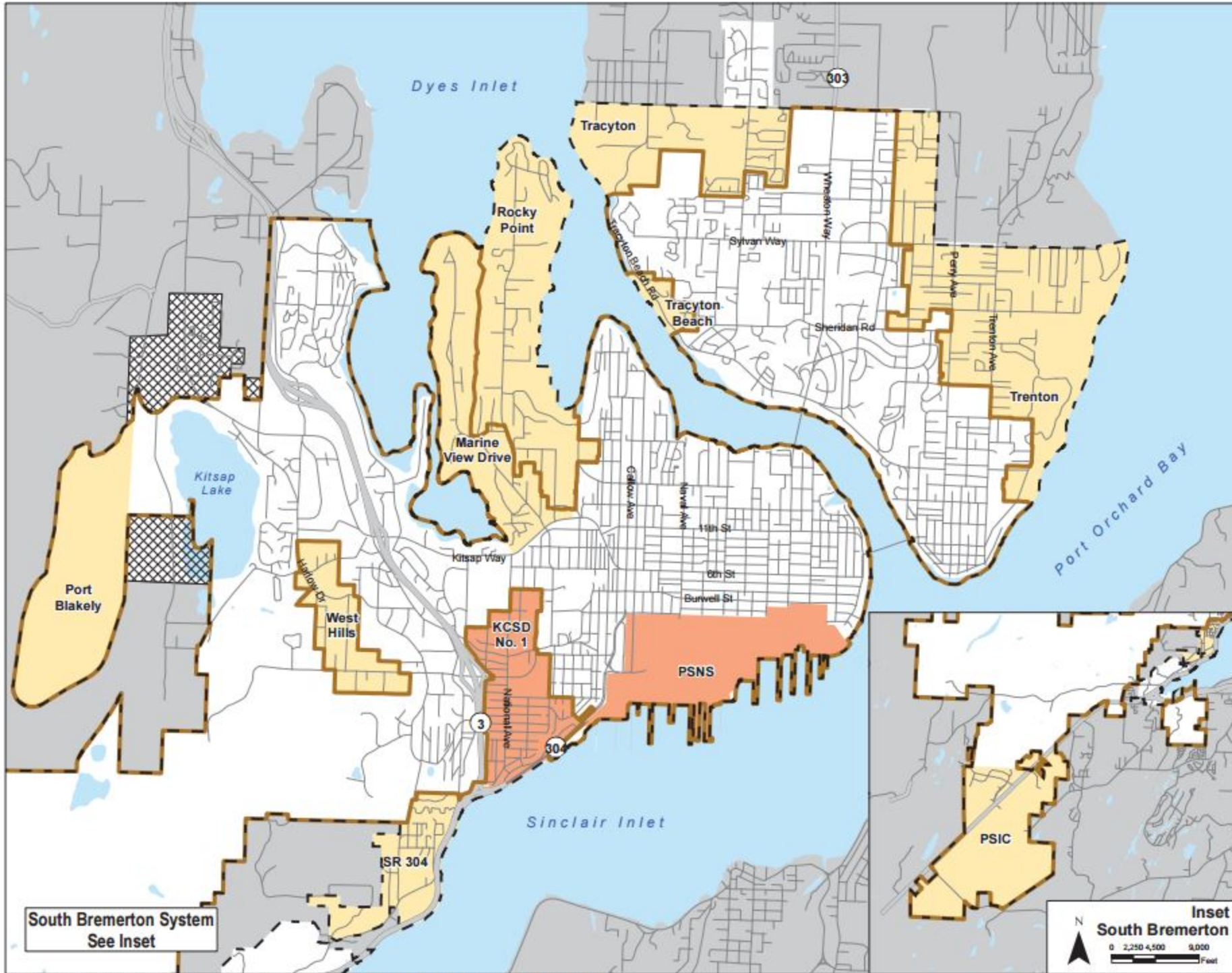
Central Kitsap Urban Growth Area Sewer



- Legend**
- P Pump Station
 - Force Main
 - Gravity Main
 - Low Pressure Gravity Main
 - Future Force Main
 - Future Gravity Collector
- Pipe Replacements**
- Force Main Replacement
 - Gravity Pipe Replacement
- Proposed Infrastructure Upgrades**
- Pump Station Upgrade
- Designated Urban Growth Areas**
- Unincorporated Urban Growth Area
 - Incorporated City
 - Designated Urban Growth Areas



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- Legend**
- UGA Review Area
 - Contract Customer
 - New Service Area
 - City of Bremerton
 - Bremerton UGA
 - Highway
 - Streets

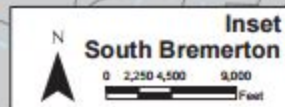
Note:
 The City's sewer service area is indicated as a white background. It includes New Service Areas and UGA Review Areas indicated on the map.

The UGA Review Areas currently receive service, but the City has suspended selling service in these areas pending modification of the UGA Boundaries which will be evaluated during Kitsap County's 2016 Comprehensive Plan Update process.

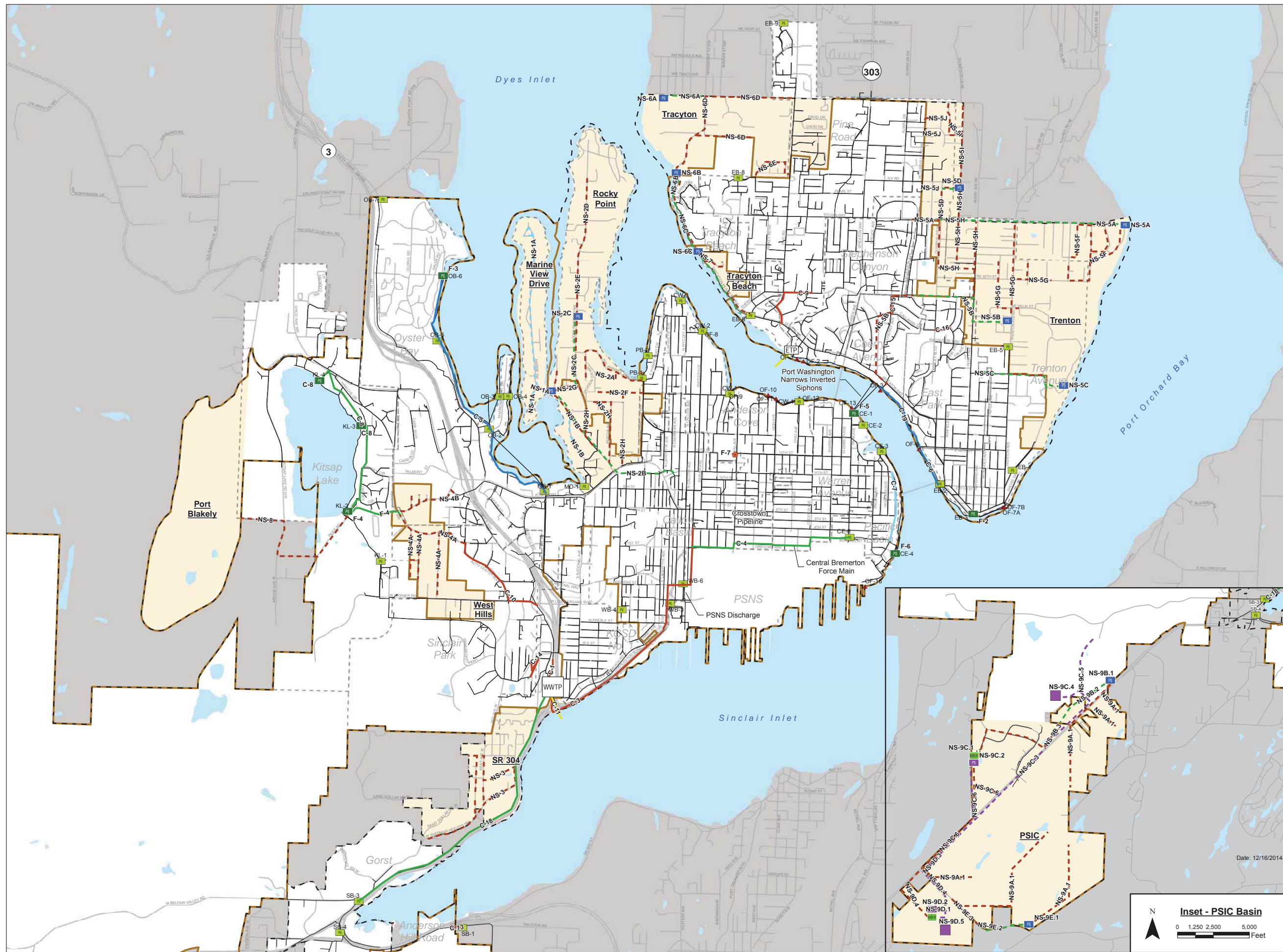
- Source of Data:
- 1) Kitsap County GIS
 - 2) City of Bremerton GIS



Figure 3-2
Sewer Service Area
 CITY OF BREMERTON
 WWCP UPDATE



South Bremerton System
 See Inset



Legend

Capital Improvements

- Beach Sewer
- Force Main
- Gravity Sewer
- Low Pressure Sewer
- Outfall

New Service Area

- Force Main
- Gravity Sewer
- Low Pressure Sewer
- Reclaimed Main

■ Proposed Pump Station
■ Proposed Reclaimed Pump Station
■ Pump Station Upgrade
■ MBR
■ Winter Sewage Disposal
■ Pump Station
● Outfall

⋯ Less Than 24" Force Main
 Sewer Mains
 Bremerton UGA
 City of Bremerton
 Highway
 Streets
 Water Body
 New Service Area

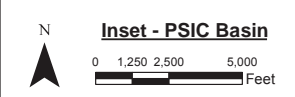
WWTP Westside Wastewater Treatment Plant
ETP Eastside Treatment Plant

Source of Data:
 1) Kitsap County GIS
 2) City of Bremerton GIS



Figure 7-1
 CIP Map
 CITY OF BREMERTON
 WWCP UPDATE

Date: 12/16/2014



Document Path: D:\GISDATA\Projects\wash\Bremerton\Map_Docs\Comprehensive Sewer Plan\Plan Figures\Figure 5-5 - Tracyton Service Area Map.mxd Print Date: 9/11/2014



Figure 5-5
Tracyton Service Area Map
CITY OF BREMERTON
WWCP UPDATE

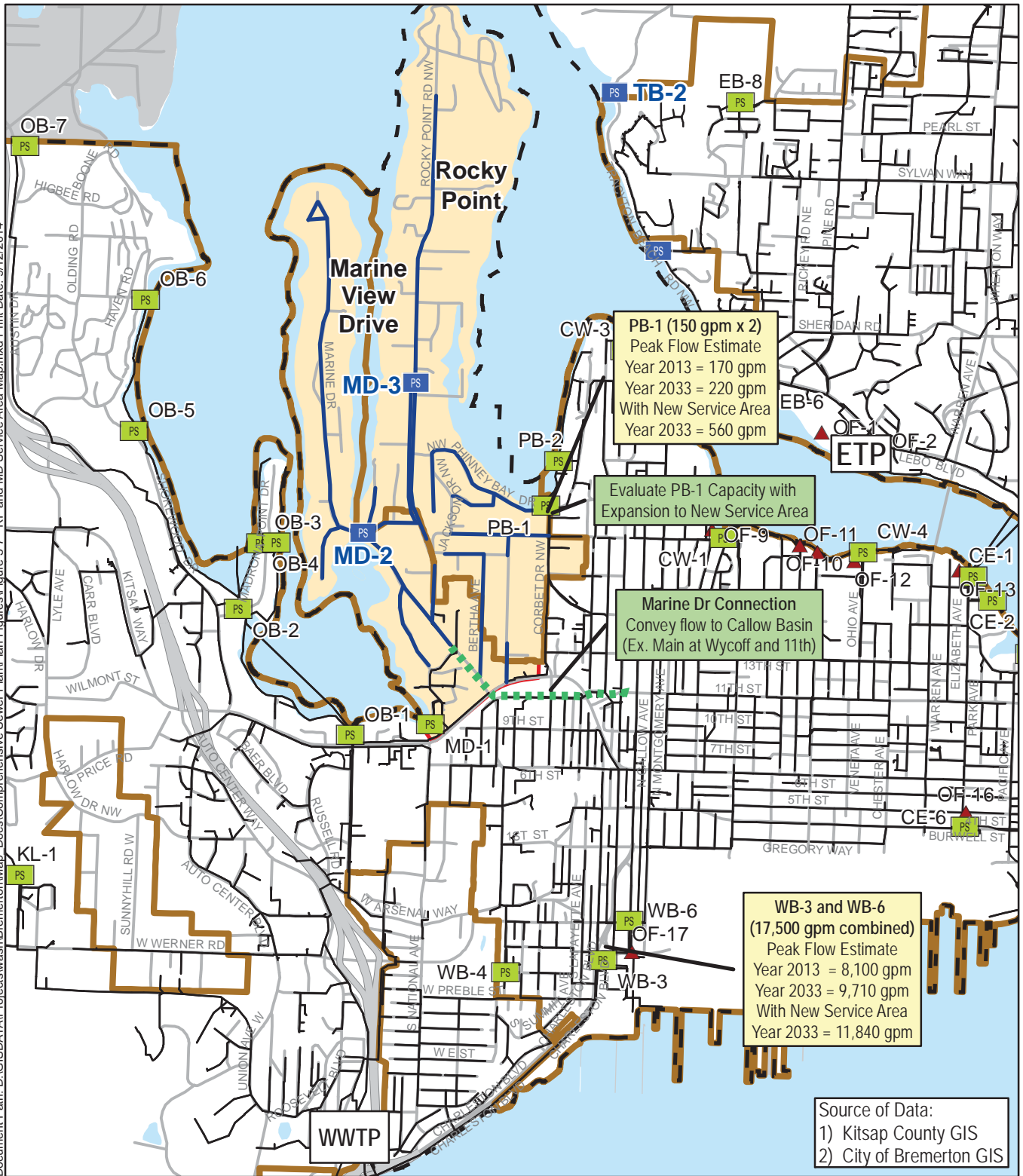
Legend

- ▬▬▬▬▬ TB-2 Improvements
- ▬▬▬▬▬ Proposed Sewer Main
- PS Proposed Pump Station
- New Service Area Basin
- ▬▬▬▬▬ Sewer Main
- PS Pump Station
- ▲ Outfall
- City of Bremerton
- Bremerton UGA
- Water Body
- Highway
- Streets

N

0 375 750 1,500
Feet

Document Path: D:\GISDATA\Projects\washBremerton\Map_Docs\Comprehensive Sewer Plan\Plan Figures\Figure 5-7 - RP and MD Service Area Map.mxd Print Date: 9/12/2014

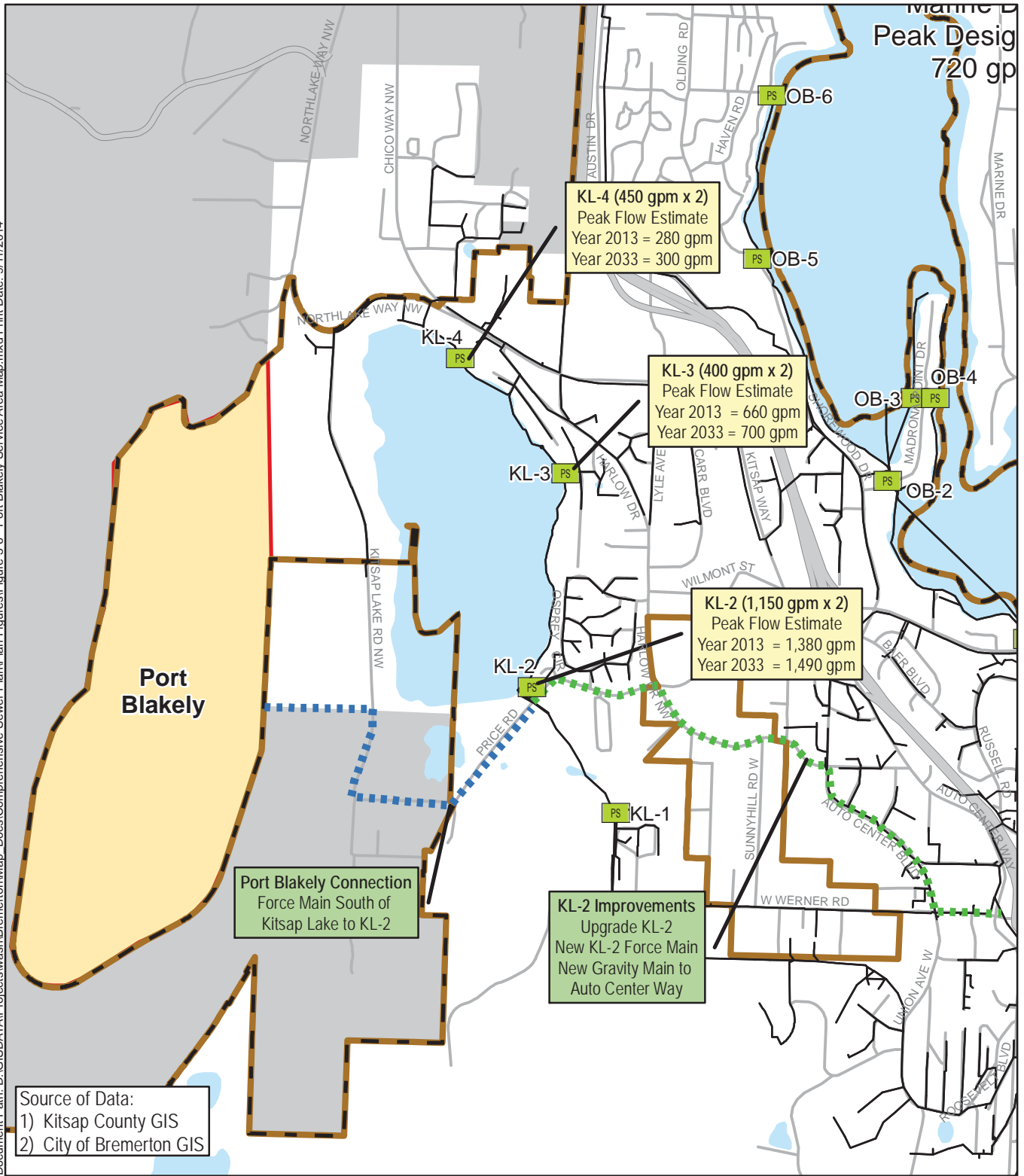


Legend

- Marine Dr Connection
- PS Proposed Pump Station
- Proposed Sewer Main
- New Service Area Basin
- Sewer Main
- PS Pump Station
- ▲ Outfall
- City of Bremerton
- Bremerton UGA
- Water Body
- Highway
- Streets

Figure 5-7
Rocky Point and Marine Drive
Service Area Map
CITY OF BREMERTON
WWCP UPDATE

Document Path: D:\GISDATA\Projects\washBremertonMap_Docs\Comprehensive Sewer Plan\Plan Figures\Figure 5-6 - Port Blakely Service Area Map.mxd Print Date: 9/11/2014



Legend

- ▬▬▬ Port Blakely Connection
- ▬▬▬ KL-2 Improvements
- PS Proposed Pump Station
- New Service Area Basin
- Sewer Main
- PS Pump Station
- ▲ Outfall
- Bremerton UGA
- City of Bremerton
- Water Body
- Highway
- Streets

Figure 5-6
Port Blakely Service Area Map

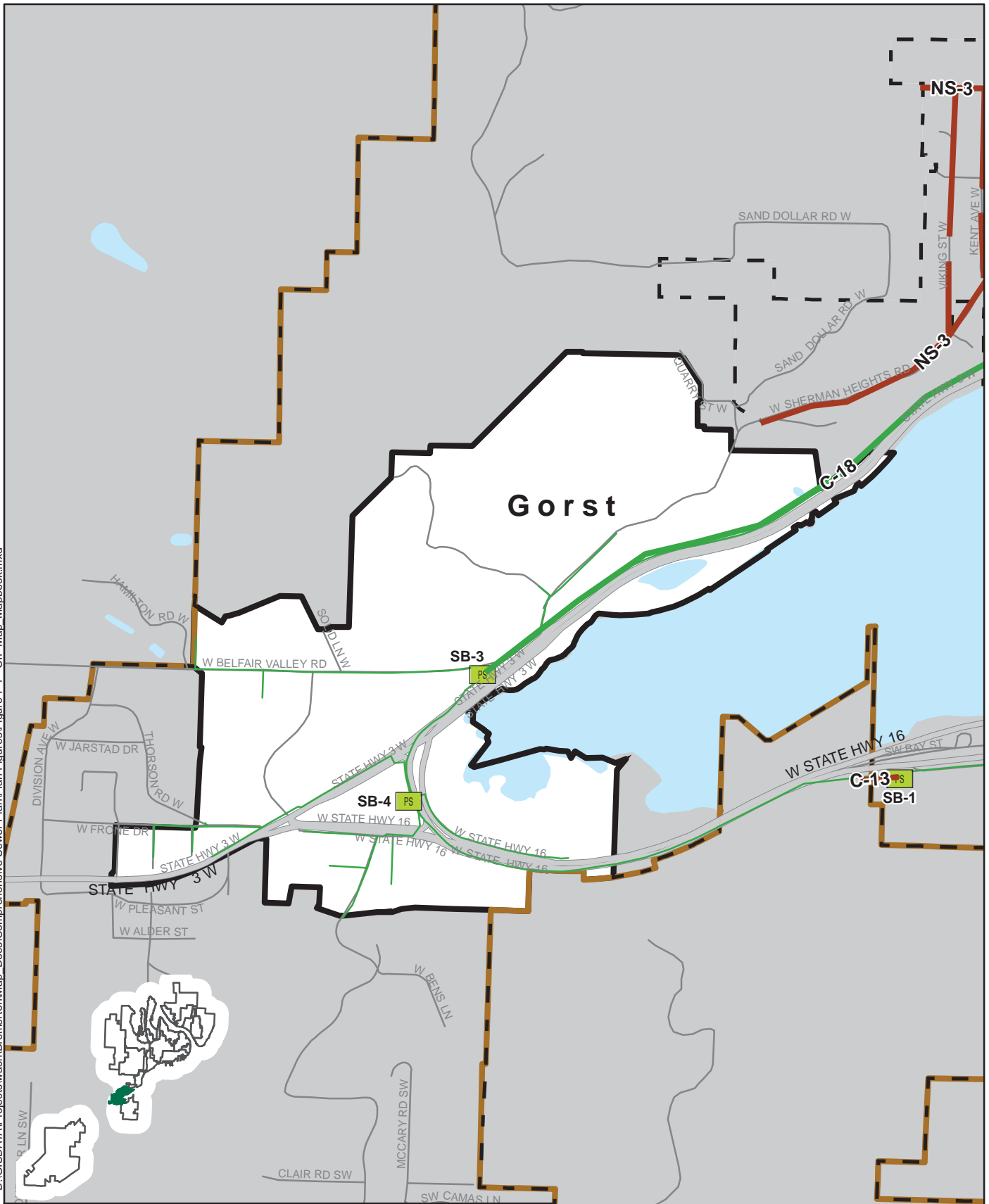
CITY OF BREMERTON
WWCP UPDATE

N

0 500 1,000 2,000

Feet

D:\GISDATA\Projects\wash\Bremerton\Map_Docs\Comprehensive Sewer Plan\Plan Figures\Figure 7-1 - CIP Map Mapbook.mxd



Legend

- | | | |
|------------------------|--------------------------|-------------------|
| Odor Control Upgrade | Beach Sewer | Lift Station |
| MBR | Force Main | Sewer Mains |
| New Pump Station | Gravity Sewer | Streets |
| Pump Station Upgrade | Low Pressure Sewer | Highway |
| Reclaimed Pump Station | Outfall | New Service Area |
| | Reclaimed Main | City of Bremerton |
| | Force Main Less Than 24" | Bremerton UGA |
| | CSO Outfall | |

Basin Gorst



1 inch = 1,170 feet



BASIN PLAN
City of Bremerton



Port Orchard Urban Growth Areas

Wastewater Infrastructure Preferred Alternative

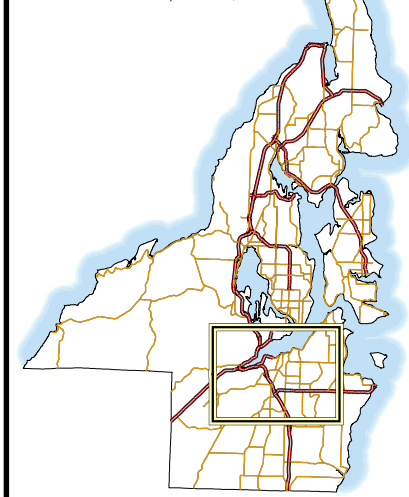
- Existing Wastewater Infrastructure**
- Existing Sewer Mains
 - Existing Pump Station
 - Existing Treatment Plant
- Proposed Wastewater Infrastructure Replacement**
- Force Main - Replacement
 - Gravity - Replacement
- Proposed Wastewater Infrastructure**
- Proposed Force Main
 - Proposed Gravity Main
 - Trunk Upgrade - Replacement/Upgrade
 - Proposed Developer Extension
 - Proposed Pump Station
 - Proposed Temporary Pump Station
 - Proposed Lift Station
- Unincorporated Urban Growth Area**
- Unincorporated Urban Growth Area
 - Incorporated City
- Easement**
- Easement
 - Plat-Line
 - Tax Parcels

- Waterbodies (defined in WAC 222-16-030)**
- WaterBody Cartographic Feature Code**
- Bay, estuary, Puget Sound
 - Lake, Pond, Reservoir, Gravel pit or quarry filled with water
 - Marsh, wetland, swamp, bog

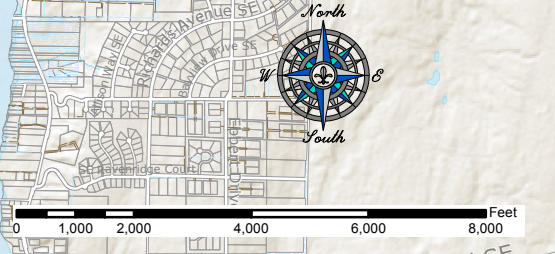
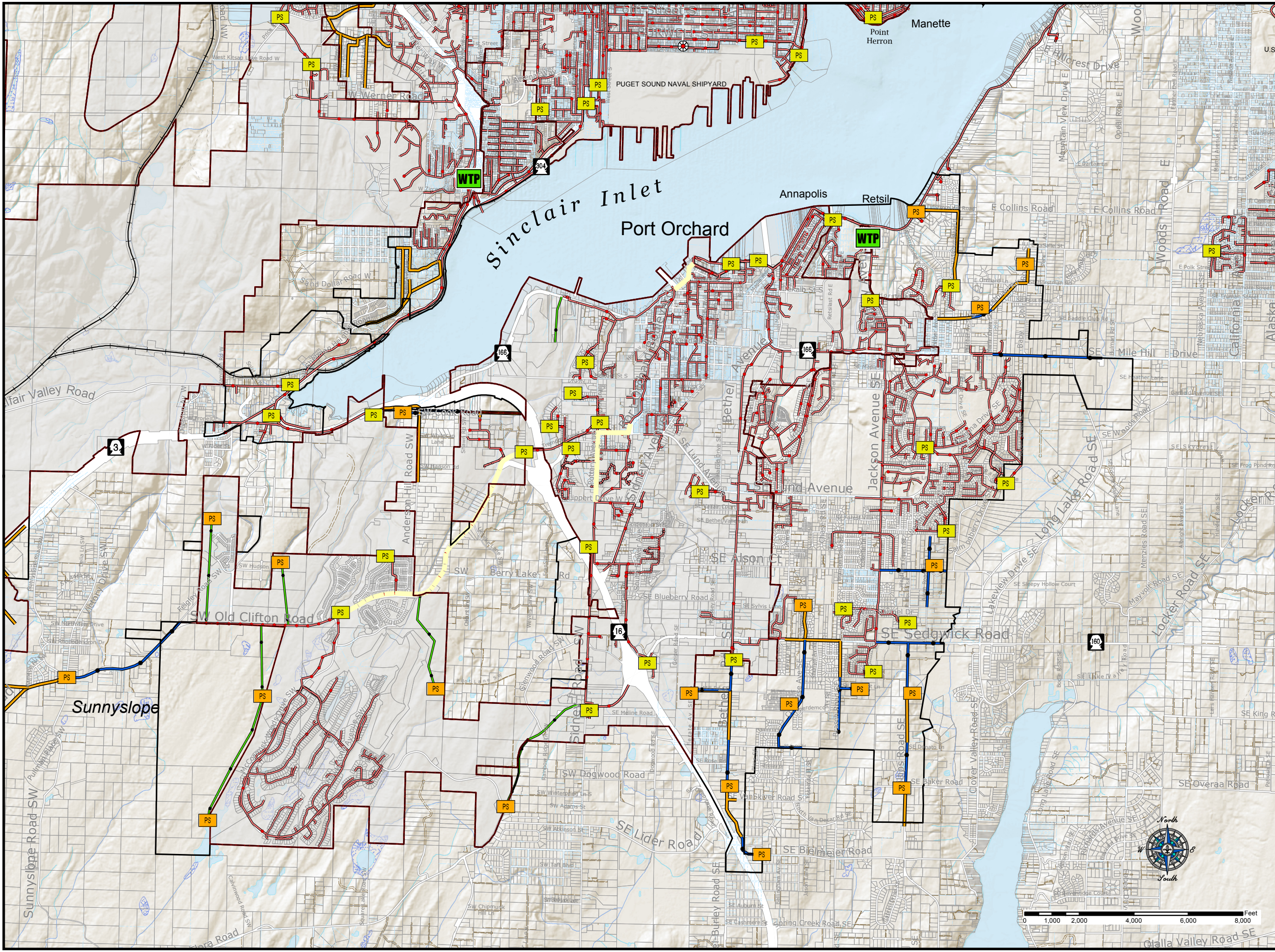
- Watercourses (defined in WAC 222-16-030)**
- Fish Habitat Water Type Code**
- (S) Designated Shoreline of the State
 - (F) Fish Habitat
 - (N) Non-fish Habitat
 - (U) Unknown, unmodeled hydrographic feature.

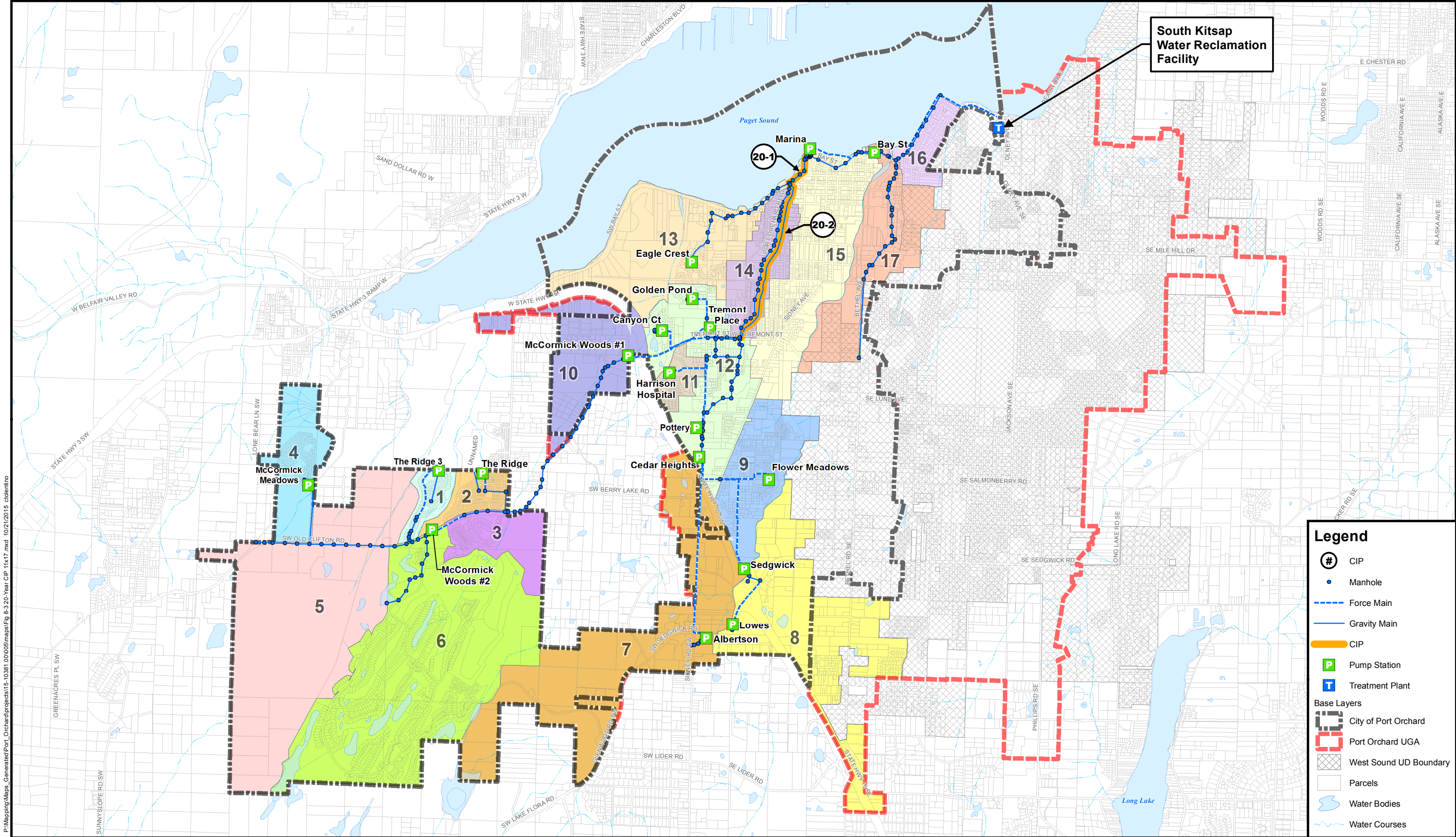
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* THIS MAP IS NOT A SUBSTITUTE FOR FIELD SURVEY *
DRAFT
Map Date: June, 2012



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P:\Mapping\Maps_Generated\Port_Orchard\projects\15-10361_00\05\maps\Fig 8-3 20-Year CIP 11x17.mxd 10/21/2015 c.coleantino

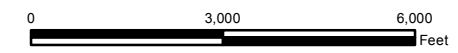
Legend

- # CIP
- Manhole
- Force Main
- Gravity Main
- CIP
- P Pump Station
- T Treatment Plant

Base Layers

- City of Port Orchard
- Port Orchard UGA
- West Sound UD Boundary
- Parcels
- Water Bodies
- Water Courses

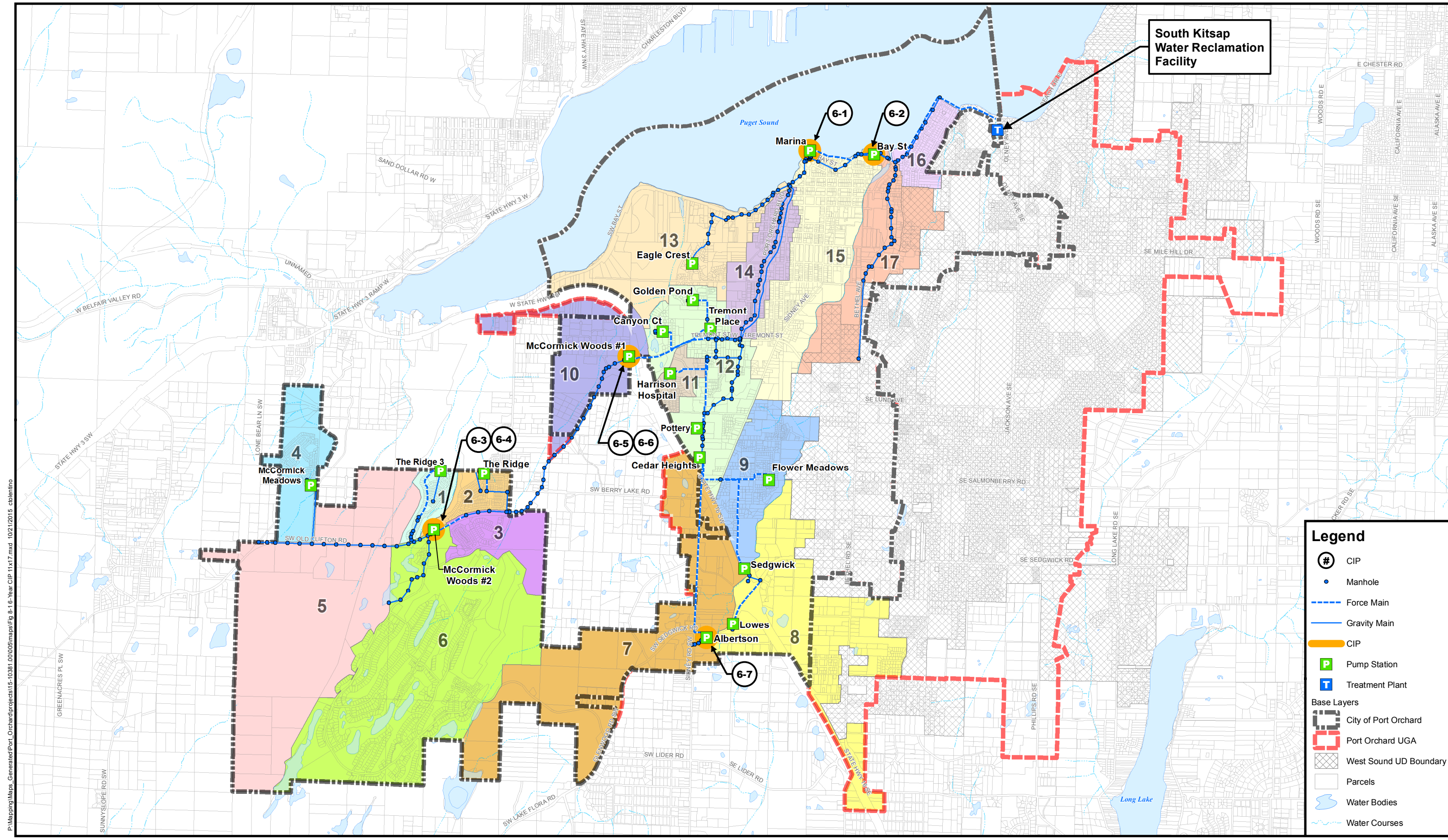
Sewer System: City of Port Orchard 2015
 Kitsap County base data 2015
 Data sources supplied may not reflect current or actual conditions. This map is a geographic representation based on information available. It does not represent survey data. No warranty is made concerning the accuracy, currency, or completeness of data depicted on this map.
 BHC Consultants LLC, assumes no responsibility for the validity of any information presented herein, nor any responsibility for the use or misuse of the data.



20-Year CIP
 General Sewer Plan Update
 City of Port Orchard, Washington
 November 2015

Figure

8-3



South Kitsap
Water Reclamation
Facility

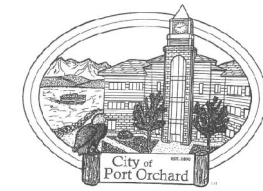
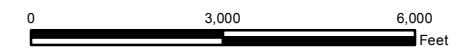
Legend

- # CIP
- Manhole
- - - Force Main
- Gravity Main
- CIP
- P Pump Station
- T Treatment Plant

Base Layers

- ▭ City of Port Orchard
- ▭ Port Orchard UGA
- ▭ West Sound UD Boundary
- ▭ Parcels
- ▭ Water Bodies
- ▭ Water Courses

Sewer System: City of Port Orchard 2015
 Kitsap County base data 2015
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6-Year CIP
 General Sewer Plan Update
 City of Port Orchard, Washington
 November 2015

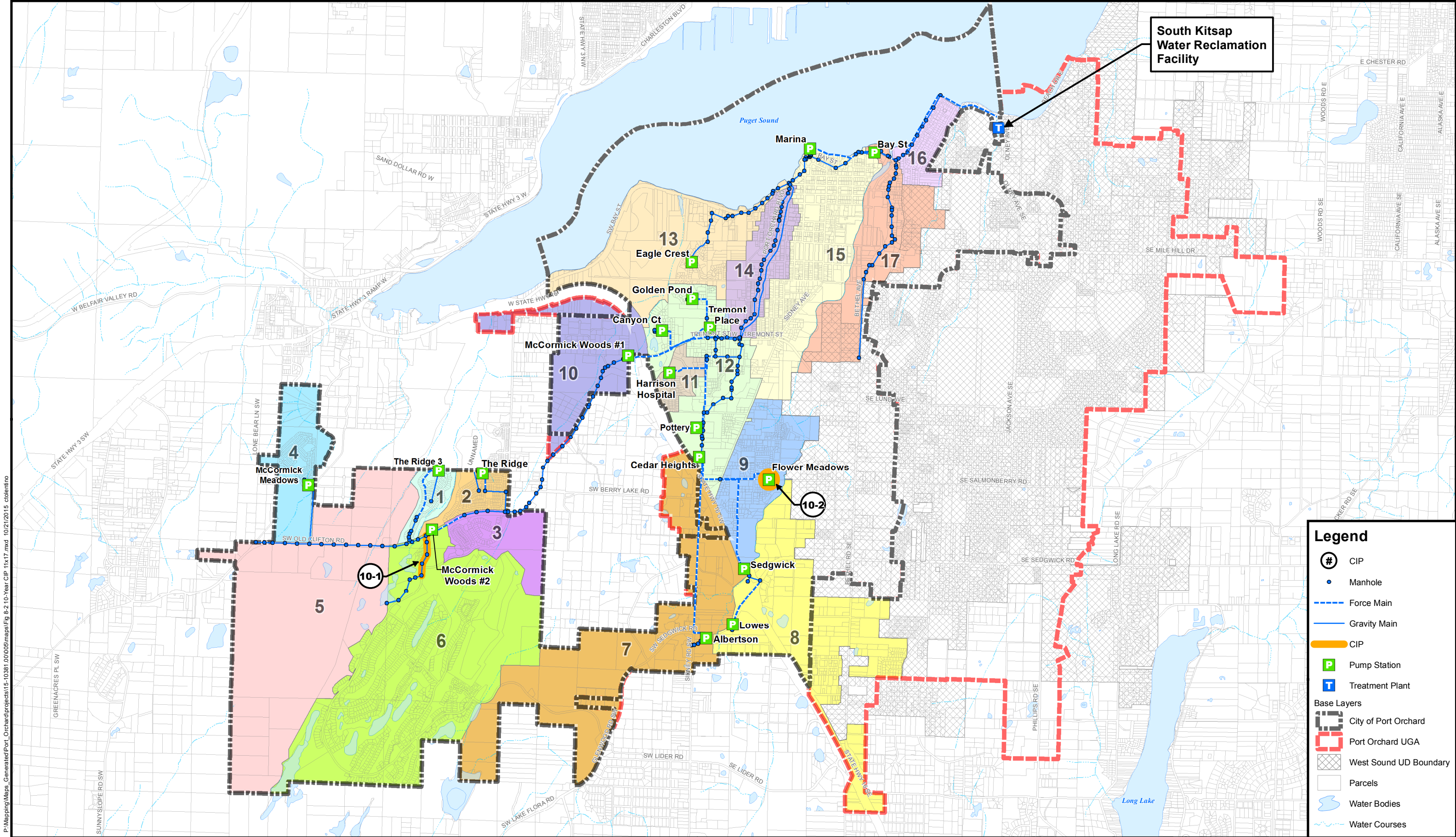
Figure

8-1

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South Kitsap
Water Reclamation
Facility

Legend

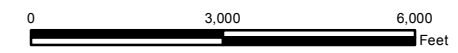
- # CIP
- Manhole
- - - Force Main
- Gravity Main
- CIP
- P Pump Station
- T Treatment Plant

Base Layers

- ▭ City of Port Orchard
- ▭ Port Orchard UGA
- ▭ West Sound UD Boundary
- ▭ Parcels
- ▭ Water Bodies
- ▭ Water Courses

P:\Mapping\Maps_Generated\Port_Orchard\projects\15-10361_00\05\maps\Fig 8-2_10-Year_CIP_11x17.mxd 10/21/2015 c.rolentino

Sewer System: City of Port Orchard 2015
 Kitsap County base data 2015
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10-Year CIP
 General Sewer Plan Update
 City of Port Orchard, Washington
 November 2015

Figure

8-2



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Appendix B. Sewer System Costs and Revenues

- Wastewater Planning and Finance Statement: 2012 CFP
- Kitsap Health: 2015 Correspondence

KITSAP COUNTY
UGA SIZING AND COMPOSITION REMAND
Wastewater Planning and Finance
Statement of Local Circumstances and Strategies

PURPOSE

The purpose of this document is to evaluate the provision of adequate and available urban-level wastewater service in UGAs in Kitsap County. This policy evaluation will include review of the Kitsap County UGAs characteristics; applicable Washington State law regarding capital facility provision; forms of appropriate wastewater methods; as well as existing and future strategies for financing needed infrastructure. As discussed below, this policy evaluation will show that Kitsap County has met the GMA requirements for adequate and available wastewater services within the UGA at the time of development.

INTRODUCTION

Recent Central Puget Sound Growth Management Hearings Board (CPSGMHB) decisions¹ have directed Kitsap County to document the provision of urban-levels of wastewater service to its entire urban growth areas (UGAs) within the 20-year planning horizon. This issue is not isolated to Kitsap County, its cities and service providers; nor does it affect only the current planning horizon (2005-2025). These Growth Hearings Board opinions suggest that jurisdictions must show full wastewater financing and construction for each UGA twenty years after initial designation. For Kitsap County, this exercise requires an assessment of the current planning horizon and proposed new UGA boundaries, and also includes the UGA boundaries established in 1998. There is no clear GMA definition as to what precisely constitutes an “adequate urban wastewater system.”² Recent Growth Hearings Board opinions on wastewater adequacy require Kitsap County to present a clear definition as to what is an acceptable urban-level wastewater treatment method; whether wastewater is subject to the concurrency requirement in state law; and the level to which jurisdictions must show public financing for these facilities. This is a definition with

¹ *Suquamish Tribe et al. v. Kitsap County*, CPSGMHB 07-3-0019c, Final Decision & Order (8/15/2007); *KCRP et al. v. Kitsap County (“KCRP IV”)*, CPSGMHB 06-3-0007, Final Decision & Order (7/26/06).

² Compare, e.g., *Harless v. Kitsap County*, CPSGMHB No. 07-3-0032, Order on Dispositive Motion (11/15/07) (“[P]rivately-owned services and facilities providing a public service fall within the rubric of governmental urban services.”; the Board implies that Large On-Site Septic Systems may be considered urban in nature depending upon the community served) with *Advocates for Responsible Development et al. v. Mason County*, WWGMHB No. 06-2-0005, Compliance Order on Plan and Development Regulations – Sewer in Belfair UGA (11/14/2007)(Holding community septic systems are a rural service, not allowed in urban areas under any circumstances.) See also, Letter from Juli Wilkerson, Director State Dept. of Community Trade and Economic Development to Cris Gears, Kitsap County Administrator (11/3/2006)(“Although the proposed [LOSS] system is not a traditional extension of wastewater service through hook-up to a central plant, if the proposed on-site system serves urban levels of development, we believe it is consequently an urban level of service.”)

statewide implications as most jurisdictions are now reaching the end of their first Comprehensive Plan’s 20-year planning horizons.

KITSAP COUNTY’S DEVELOPMENT HISTORY

Founded in 1857, Kitsap County is located on the Kitsap Peninsula in Washington State and comprises a total land mass of 393 square miles. Kitsap County ranks 36th in size among the 39 Washington Counties, and is the third most densely populated county in the state. Since the 1800s, growth has been largely attributable to the expansion of lumber mill operations and Department of Defense naval work at the Puget Sound Naval Shipyard with development primarily centered around employment centers in Bremerton, Port Orchard, and Bainbridge Island. Development in these core areas utilized public sewer systems while construction of developments located on the outer edges predominantly were served by on-site septic systems (e.g. Illahee, West Hills). While growth had continued with the expansions of the Naval Shipyard during and after World War II, it was the development of the Trident Naval Subbase in the 1970s that spurred the most recent employment boom. With this new naval facility came federal investment in infrastructure including highway improvements and the Brownsville Wastewater Treatment Plant (known today as the Central Kitsap Wastewater Treatment Plant). In close proximity to the new facility and infrastructure improvements, the areas north of East Bremerton and the emerging community of Silverdale saw a significant amount of growth pressure. These areas, and, to a lesser degree, South Kitsap, Poulsbo and Kingston, saw rapid development of new residential neighborhoods and commercial centers to serve this new facility.

These areas developed in various ways. Many large-scale developments on substantial areas of vacant land used local improvement districts (LIDs) or developer extensions to connect to the new public sewer plant (e.g. downtown Silverdale and Ridgetop), creating a more dense development pattern. Other developments developed in “suburban” subdivision design with some having larger suburban lots with on-site septic systems. These “suburban” designs commonly included a single access point onto a main roadway, a meandering street system with cul-de-sac end points, and lot sizes greater than 1/3-acre to accommodate the use of traditional on-site septic systems (Figure 1).

By the time Washington State legislature adopted the Growth Management Act (GMA) in 1990, much of Kitsap County’s developed areas had already been dotted with this “suburban” residential subdivision pattern



Figure 1.
Pre-GMA Subdivision, Southwest Silverdale UGA

served by on-site septic development. Kitsap County wrestled with the ability to provide land for new growth while accommodating existing development patterns. In 1998, Kitsap County adopted a Comprehensive Plan under the GMA and designated ten UGAs that included many of these “suburban developments”.³ While the densities of these “suburban developments” were generally lower than the core urban areas, and are neither completely urban nor rural in nature, their public service demand (transportation, law and justice, parks, fire) was and continue to be largely urban. On balance, these areas have been considered to be more urban than rural and hence were included within the UGAs as “Tier 2” lands (see below). Importantly, these lands meet the GMA definition of “urban growth”: “*growth that makes intensive use of land for the location of buildings, structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of land for the production of food, other agricultural products, or fiber, or the extraction of mineral resources, rural uses, rural development, and natural resource lands designated pursuant to RCW 36.70A.170.*”⁴ Additionally, these pre-GMA Tier 2 developments are fully developed and have little to no redevelopment potential due to their original design, plat conditions and covenants.

GROWTH MANAGEMENT ACT PROVISIONS

Goals of the Act

The GMA provides legislative policy guidance on the creation of local comprehensive and capital facility plans which guide growth and development. The GMA is based upon 14 guiding, non-prioritized goals.⁵ These goals are not mutually exclusive and must be balanced in the creation of local planning documents and facility plans. Of the fourteen goals, three goals in particular are related to ensuring wastewater service provision in UGAs, which include:

- (1) Urban growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
- (2) Reduce sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
- (12) Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the

³ Kitsap County’s established its compliant UGAs pursuant to CPSGMHB direction in *Association of Rural Residents (ARR) v. Kitsap County*, CPSGMHB 93-2-0010, FDO (6/3/1994), where the Growth Hearings Board extensively discussed the “tiering systems” to be used in establishing a UGA and phasing growth within, pursuant to RCW 36.70A.110(1) and (3). In that decision, the CPSGMHB made it clear that there shall only be “nonurban growth” outside of a UGA. Further, the establishment of a UGA shall first be limited to city limits, and if they cannot accommodate growth, then the UGAs may include areas that already have urban growth located on it. (Referred to as “Tier 2 lands” herein).

⁴ RCW 36.70A.030(19). Moreover, because of their proximity to cities and other urban areas, these types of development could not be considered as Limited Areas of More Intensive Rural Development (LAMIRDs) under RCW 36.70A.070(5)(d).

⁵ RCW 36.70A.020 ; RCW 36.70A.480(1).

development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

Goal 1 suggests that urban areas should have adequate public facilities and services, or be able to be provided with them at some point in an efficient manner. Goal 2 indicates that there should be no more post-GMA development of sprawling low-density development. Goal 12 generally deals with prospective development and concurrency, i.e., all future growth should occur with the development of concurrent facilities and services necessary to support that growth. These goals lay down the framework for the definition of urban services, such as wastewater, as “those public services and public facilities at an intensity historically and typically provided in cities, specifically including storm and sanitary sewer systems, domestic water systems, street cleaning services, fire and police protection services, public transit services, and other public utilities associated with urban areas and normally not associated with rural areas.”⁶ This is the most detail that the GMA provides in defining urban wastewater systems; although it specifically includes sewer systems as an urban service, it does not exclude other wastewater systems that may provide treatment for urban-level development. As described later in this paper, alternative wastewater technologies may better match local topographic constraints and soils, while supporting urban densities.

Applying this definition, the historical and typical provision of the wastewater facilities provided in Kitsap County cities (Bainbridge Island, Poulsbo, Bremerton and Port Orchard) includes a wide range of technologies. While each of Kitsap County’s cities include a traditional public sewer conveyance system with Bainbridge Island, Port Orchard and Bremerton maintaining their own sewer treatment facilities, each allow multiple systems including grinder pumps and properly-functioning septic systems. None of the three jurisdictions require the decommissioning of these existing septic systems and the transition to traditional sewer facilities. These systems are components of the sewer systems and generally serve existing suburban development without an expectation of future redevelopment during the 20-year planning horizon.

Designation of UGAs

In the early days of GMA, the CPSGMHB gave Kitsap County direction in establishing compliant UGAs.⁷ In that decision, the Hearings Board provided a lengthy discussion of the GMA provisions concerning UGAs, and the legislature’s priority to classify urban lands.⁸ The CPSGMHB made it clear that “only ‘nonurban’ growth can occur outside a UGA,”⁹ which means that existing urban growth should be included within a

⁶ RCW 36.70A.030 (18).

⁷ *Association of Rural Residents (ARR) v. Kitsap County*, CPSGMHB 93-3-0010, FDO (6/3/1994).

⁸ RCW 36.70A.110(1) and (3). While RCW 36.70A.110(1) deals with the initial designation, subsection .110(3) deals with phasing of growth within a UGA.

⁹ *ARR, supra* at *32.

UGA. The 1994 *Association of Rural Residents (ARR) v. Kitsap County* decision also set forth a type of “tiering system” for designating UGA boundaries as follows:¹⁰

- 1) A county must first look to established cities as the UGAs.
- 2) If the existing cities cannot accommodate all projected growth, the county may include “only if that additional territory is already ‘land having urban growth located on it.’”¹¹
- 3) If the existing cities and land with urban growth do not accommodate growth, additional territory may be added that is “land located in relationship to an area with urban growth on it as to be appropriate for urban on it as to be appropriate for urban growth.”
- 4) If there is still need for territory after the first three steps above are added, additional territory adjacent to territory already having urban growth may be allowed.
- 5) After all territory set forth above is included, additional territory may be added if it is adjacent to territory that is already located in relationship to an area with urban growth on it as to be appropriate for urban growth.¹²

After a UGA is established, *new growth* should be directed into the UGA utilizing a three tier priority system in the following order.

- 1) Areas already characterized by urban growth that have adequate existing public facility and service capacities to serve such development. (These areas include existing development at urban densities connected to a public sewer plant.)
- 2) Areas already characterized by urban growth that will be served adequately by a combination of both existing public facilities and services and any additional needed public facilities and services that are provided by either public or private sources. (These are areas of urban or suburban development in proximity to urban services but may be using other means of wastewater treatment, such as on-site septic systems.)
- 3) The remaining portions of the UGAs. (All other areas with no urban character or urban services.)

¹³

¹⁰ This paper does not address the other “exceptions” discussed by the Board for locating urban growth outside of established cities, i.e., fully contained communities or master planned resorts.

¹¹ Quoting RCW 36.70A.110(1). Note, in 1995 the legislature amended this provision adding language that clarifies “whether or not the urban growth area includes a city.” These lands are referred to as “Tier 2 lands” in this paper.

¹² *ARR, supra*, at *38.

¹³ However, the Board noted that there is no “temporal phasing” requirement of this requirement: “The Board holds that the Act neither mandates nor prohibits temporal phasing of development within a UGA[.] Subsection (3) [RCW 36.70A.110(3)] also does not prohibit development within UGAs of the limited areas that have no existing public facilities and service capacities. Instead, if a private developer is willing and able to provide adequate facilities and services in lieu of the government doing so, nothing in the Act prevents this from happening, subject to the local government’s exercise of discretion.”

Pursuant to ARR, Kitsap County employed the Hearings Board’s priority system in designating its UGAs. Following this system, Kitsap County chose to include many existing “Tier 2 ‘suburban’ developments” before expanding UGAs to large vacant tracts of land. It is worth noting that these lands were not included to accommodate projected growth, but rather, because they meet the GMA definition of “urban growth.” Such lands should not be considered “rural” and should be considered urban, and included in the UGA. From a planning perspective, to exclude these lands from the UGA would result in extremely irregular boundaries and would create islands of “suburban” development scattered throughout the UGAs. From both a planning and a service perspective, excluding such lands from the UGA would not have made common planning principles. Also, as stated earlier, these Tier 2 lands demand other urban services such as public utilities, public safety, and others.

Kitsap County has also developed its capital facilities plan to show the availability of public services, such as public sewer, through the 2005-2025 planning horizon. These lands will be able to connect to a public sewer system if the need exists, but that need may not occur within the 20-year planning horizon. These Tier 2 lands meet the GMA requirement and are lands having urban growth located on them; are currently adequately served with services; and that they “will be served” when needed by either public or private sources. Thus, utilizing this system, GMA indicates that on-site septic systems have a place in the designation of existing UGAs. In other words, the mere fact that these lands are served by on-site septic systems does not make them ineligible as urban designations; nor does GMA require such lands to convert to public sewer within the 20-year planning horizon.

Capital Facilities Planning

The GMA also includes provisions for jurisdictions to show how public facility needs are to be met over the twenty year-planning period. The requirements for this planning are outlined in RCW 36.70A.070(3), which requires Kitsap County to develop a capital facilities plan element consisting of:

- An inventory of existing capital facilities owned by public entities, showing the locations and capacities of the capital facilities;
- A forecast of the future needs for such capital facilities;
- The proposed locations and capacities of expanded or new capital facilities;
- At least a six-year plan that will finance such capital facilities within projected funding capacities and clearly identifies sources of *public money* for such purposes; and
- A requirement to reassess the land use element if probable funding falls short of meeting existing needs and to ensure that the land use element, capital facilities plan element, and financing plan within the capital facilities plan element are coordinated and consistent. Park and recreation facilities shall be included in the capital facilities plan element.

GMA states that the CFP 6-year finance plan requires jurisdictions to show only public funding, not private funding for development. One of the founding principles of the GMA is to have growth pay for growth. In new development of vacant or infill/redevelopment lands, the developer, private property owner or local improvement district are the sources of funding for most wastewater conveyance infrastructure. For Tier 2 lands, GMA clearly describes the provision of their future urban services as “provided by either public or

private sources.” While projected to be available within the six-year horizon, these private sources cannot be clearly predicted to the detail required for public funds in a six-year finance strategy. Nevertheless, through conditions on development, impact fees, and other sources, Goal 12 can be met to require the provision of adequate public facilities and services at the time the development is available for occupancy and use.

WAC 365-196-840 defines the term concurrency as an assurance that public facilities and services necessary to support development are adequate to serve that development at the time it is available for occupancy and use, without decreasing service levels below locally established minimum standards. Concurrency describes the situation in which adequate facilities are available when the impacts of development occur, or within a specified time thereafter. Concurrency ensures consistency in land use approval and the development of adequate public facilities as plans are implemented. Concurrency is required for locally owned transportation facilities and for transportation facilities of statewide significance. Counties and cities may adopt a concurrency mechanism for other facilities that are deemed necessary for development. In Kitsap County, the concurrency mechanism adopted is only for transportation. Concurrency means that necessary improvements or strategies are in place at the time of development, or that financial commitments are in place to complete the improvements or strategies within six years.

GMA and the Hearings Boards use a similar concept of “adequacy” when applied to urban wastewater infrastructure. Jurisdictions must provide adequate and available urban services as growth requires. This leads to the expectation that local planning and strategies for provision of sanitary sewer provision are in place to ensure that this concept is addressed during the planning horizon.

With the adoption of the 1998 Comprehensive plan, recent sewer plans and development regulations (based upon RCW 36.70A.020(12) and .110), new urban development in Kitsap County UGAs has typically connected urban sanitary sewer services.

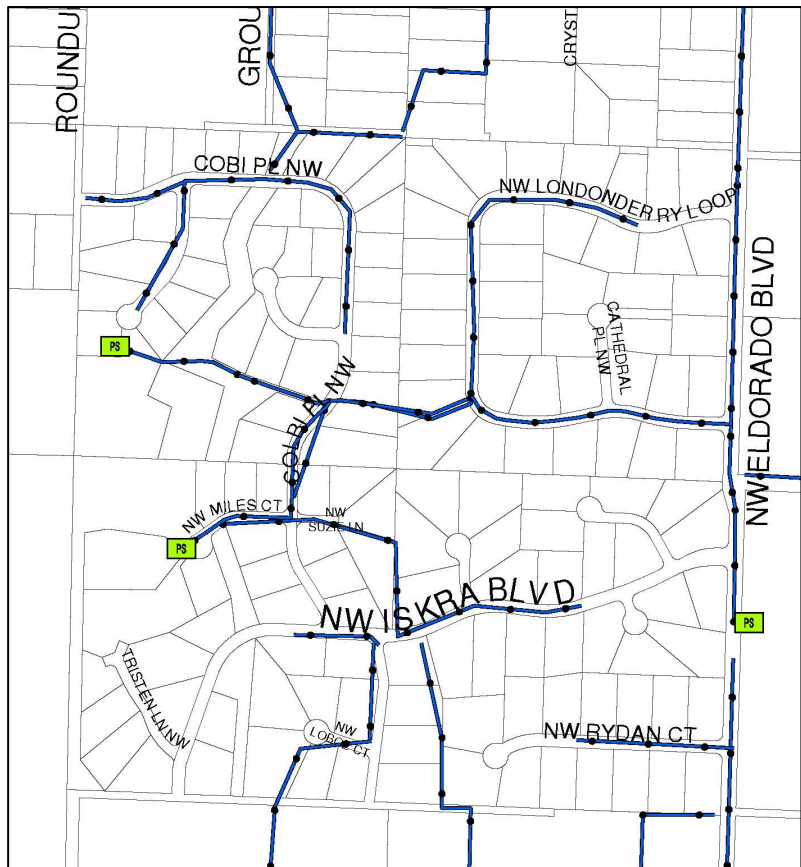


Figure 2.
Wastewater Planning in Pre-GMA Subdivision, Southwest Silverdale UGA

Through its planning process, Kitsap County has demonstrated planning to provide traditional sewer infrastructure to the entire UGA if projected new and existing growth requires it (illustrated in Figure 2). While the County has demonstrated how traditional sewer conveyance systems could be extended, it is important to note that the ability to achieve urban densities and intensities does not exclude the use of alternative wastewater technologies, such as functioning existing on-site septic systems, community drainfields and other wastewater systems (discussed below). Although alternative wastewater techniques can support urban densities, there are some instances where traditional public sewer is necessary to address public health and environmental concerns. Accordingly, Kitsap County has worked closely with the Kitsap Public Health District (KPHD) to identify urban areas served by septic systems that may be areas of concern, and to prioritize the provision of public sewer to those areas. However, as discussed below, there is currently no health hazard areas within Kitsap's UGA and minimal expectation from KPHD that any transition of sewer service will be necessary for these on-site systems in 2025 planning horizon.

Essentially, GMA indicates is that the use of sanitary sewer systems in urban areas will be dependent on the environmental characteristics of the site and ability to achieve the urban densities and intensities. Having "traditional" wastewater service in place at the time of development is not a strict requirement, rather, the need to achieve urban densities, lot requirements and other environmental restrictions will be the determining factor. While Kitsap County has completed the requisite twenty-year and six-year planning for its sewer service in the UGAs, it does not mean that each and every existing development shall connect to traditional public sewer service within that 20-year horizon. Rather, when such connections become necessary to support the pre-GMA development, there will need to be site-specific determinations and considerations at that time. The use of alternative forms of sewer service is based on site-specific land and development proposal characteristics such as topography, soil types and proposed densities. Such site-specific considerations are not practically or economically feasible to evaluate a comprehensive planning level.

WASTEWATER TREATMENT TECHNOLOGIES - EXISTING AND FUTURE

As is documented in the Capital Facilities Plan for wastewater infrastructure and illustrated in Figure 2, Kitsap County has shown planning for traditional sewer facilities including mains and pump stations to the entirety of its UGAs and documented the costs. In summary, this form of service has an estimated cost of over \$400M for traditional sewer infrastructure. However, these costs are substantially affected by the issues of topography, critical areas and the true need for service within the 20-year horizon as well as the use of other existing and emerging wastewater technologies. Many of these technologies do not require the substantial conveyance infrastructure and can treat the effluent in a facility closer to the proposed development and at a drastically reduced cost. These systems are site-specific and, unlike traditional sewer facilities, cannot be engineered everywhere. Nevertheless, they may have substantial utility to new development and existing developments in the future.

Geography, Topography and Environmental Constraints

Kitsap County is very different from the other three urban counties in the Central Puget Sound region: King, Snohomish and Pierce. Kitsap is second only to King in density, but its existing land use pattern and

ability to serve that pattern with urban services has been uniquely shaped by the constraints of its unique geography. Unlike the landscape in the three urban counties east of Puget Sound, Kitsap's landscape has a minimal resource land component¹⁴. Kitsap is not graced by mountain ranges flanked by extensive designated forest resource lands, nor does it have river valleys with the rich bottom lands that would support an agricultural resource industry. The network of agricultural river valleys and forested mountain ranges in the three eastern Central Puget Sound counties create natural separators between urban and urban, between urban and rural, and between rural and rural. There are no designated Resource Lands in Kitsap to perform this region-forming function and is one factor that contributes to the historical lack of differentiation between urban and rural in Kitsap.

Overall, Kitsap County includes challenging topography and critical areas throughout the county, whether urban and rural. While Kitsap County has taken efforts to exclude these lands in the UGAs for intense development, it is nearly impossible to designate a UGA without including significant critical area systems and hilly topography. (Illustrated in Figure 3).

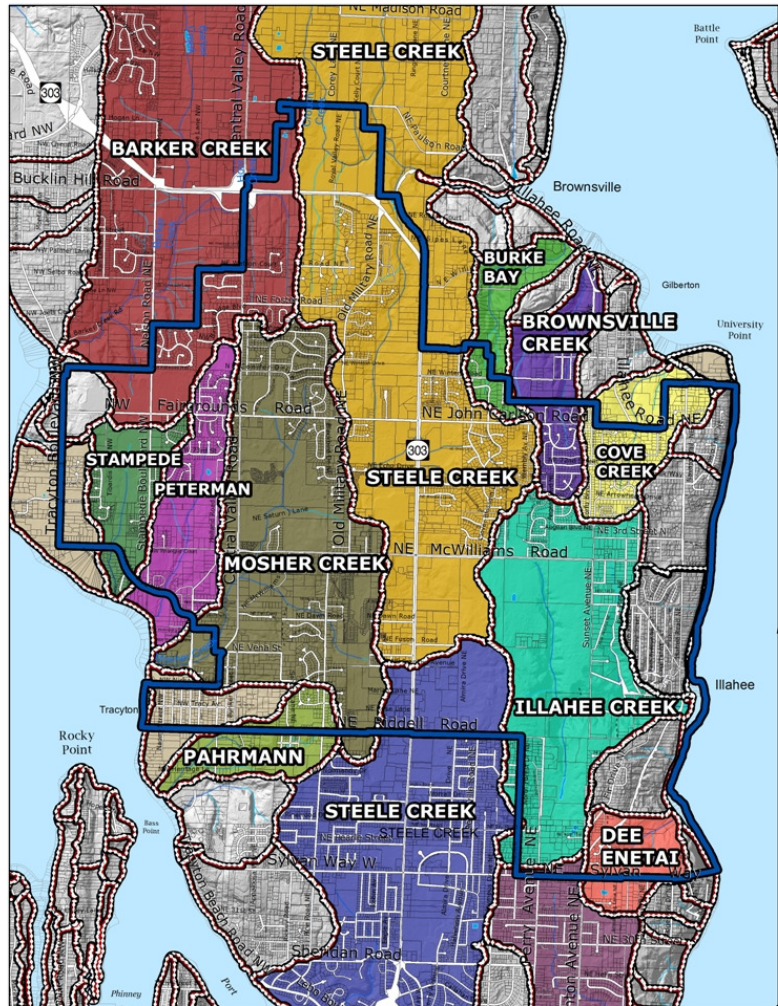


Figure 3.
Watersheds Basins, Central Kitsap UGA

The efficiency and cost of traditional sanitary sewer systems are influenced by economies of scale and the engineering necessary to overcome and/or work with gravity. Kitsap's rolling topography has created a relatively large number of relatively small catchment areas, making the collection and transmission of wastewater a bigger engineering and budgeting task than in counties with

¹⁴ Kitsap County has only limited commercial forest (1.6% of Kitsap), mineral resource lands (1.4% of Kitsap) and no agricultural resource lands. While an active gravel pit, for example, is a tangible physical reality quite different from rural or urban uses, the geographic extent of such lands are far less extensive than either rural or urban lands and scattered throughout the County. Accordingly, mineral resource lands do not play the same landscape-shaping role that agricultural or forestry resource lands do.

more pronounced topographies and larger catchment areas.¹⁵ Particularly, east-west, Kitsap’s terrain requires multiple pump stations to move effluent from development to plant. Some areas require multiple pump stations (an average estimated cost between \$600K and \$1M each). This is a local circumstance that is somewhat unique to Kitsap County, in sharp contrast to the three east Central Puget Sound counties.

These local circumstances will require sewer provision techniques beyond traditional public sewer. Table 2 outlines the variety of wastewater methods and their ability to serve urban developments. All systems have the ability to service some form of urban development. The appropriate use of any specific technology would be determined at the time of project submittal because the use of such systems is very context-sensitive and site-specific. The use of various technologies may be based upon soil types, lot sizes and other factors. In any event, Kitsap County has planned where the necessary location of traditional public sewer systems should be located in the event other wastewater methods are not achievable.

Table 2. Available Wastewater Technologies

System	Definition	General Description	Typical Use	Constraints	Urban Suitability
Community Drainfields	A system of piping, treatment devices and/or other facilities which provide subsurface treatment and disposal on-site or on nearby property and serve more than one single family dwelling or multifamily dwellings.	Generally similar to an on-site septic, but larger with more components to serve multiple residences.	In Kitsap County, such systems have been used as an interim system until connected to public sewer system (McCormick Woods)	Various components may have mandatory set back requirements similar to on-site systems, need larger drainfield area to serve multiple residences. Generally will require higher standard of operation and maintenance than individual systems.	May allow for smaller individual lot sizes and higher urban densities than individual systems. Can be designed to facilitate future connection to other forms of public sewer. Should be limited to areas where aquifer recharge and stream flows are of issue or as interim measures that promote the future extension of advanced forms of wastewater service (see below). Kitsap County code restricts the use of these systems in rural areas.

¹⁵ One measure of the number of distinct gravity catchment areas in Kitsap is the sheer number of distinct watersheds. Figure 3.1-2 in the DSEIS shows over seventy such areas. The watercourses in Kitsap are much smaller in scope, length and volume than those in the eastern Central Puget Sound counties. Kitsap has no large rivers and thus no agricultural floodplains comparable to the Stillaguamish, Snohomish, Snoqualmie, Sammamish, Cedar, or Green

Table 2. Available Wastewater Technologies

System	Definition	General Description	Typical Use	Constraints	Urban Suitability
Large On-Site Sewer (LOSS)	An integrated system of components, located on or nearby the property it serves, that conveys, stores, treats, and provides subsurface soil treatment and disposal of domestic sewage, with peak design flows of between 3,500 (gpd) and 100,000 gpd.	A LOSS consists of a collection system, a treatment component such as a septic tank, or treatment sequence, and a drainfield. It may include a mechanical treatment system depending on size and site constraints. LOSS are permitted and regulated by the State Department of Health.	LOSS systems convey, store, treat, and provide subsurface soil treatment and disposal of domestic sewage from 10 to 370 homes, or the equivalent mix that includes commercial development with residential strength sewage.	Requires a drainfield with the appropriate soil and groundwater characteristics. Other treatment methods may be required in combination with the drainfield. Industrial wastewater and stormwater are not allowed to be treated with a LOSS.	LOSS systems can support urban densities may be suitable in urban settings if sufficient land is available to meet design and regulatory criteria, and site constraints. State regulations require some form of public operation and maintenance unless that the system serves development under single ownership. Municipal codes may also dictate if a LOSS is allowable. Kitsap County code currently restricts the use of such systems in rural areas.
Conventional Wastewater Treatment Plants	Treatment typically consists of primary processes (pumping, screening, and grit removal), to remove heavy solids and floatable materials; and secondary treatment such as biological aeration to metabolize and flocculate colloidal and dissolved organics. Waste sludge drawn from these unit operations is thickened and processed for ultimate disposal. These facilities treat wastewater flows greater than 100,000 gpd are regulated by the Department of Ecology.		Treatment plants urban areas, or rural areas designated Limited Areas of More Intensive Rural Development (LAMIRD).	High cost of plant development and requirements for lengthy conveyance infrastructure to bring effluent from development to plant (often exacerbated by rolling topography).	Suitable for municipalities, other urban areas, larger rural communities, and industrial facilities. At a cost, can be provided everywhere with the UGAs with proper design (shown for County UGAs in Section 5.5 of the CFP). Kitsap County prohibits the extension of such systems outside of UGAs.

Table 2. Available Wastewater Technologies

System	Definition	General Description	Typical Use	Constraints	Urban Suitability
Advanced Wastewater Treatment Plants	These facilities are similar to conventional treatment plants, but are designed to provide a higher level of treatment to remove specific wastewater components prior to discharge. Advanced treatment facilities are also used in situations where high quality effluent is required, such as water reclamation projects. Such plants include membrane bio-filtration reactors.		Used in urban areas or to address documented environmental hazards. Can provide service to high densities and commercial and industrial land use intensities.	Plants are expensive and treated water must be discharged either to surface waters or direct injection to aquifers.	Suitable for municipalities, other urban growth areas, large decentralized communities, and industrial facilities.
Existing On-Site Septic	Individual or clustered systems that discharge effluent below the surface of the ground for final treatment and dispersal, with peak design flows of less than 3,500 gallons/day (gpd).		Wastewater flows into a buried septic tank; sludge settles in the tank, and the wastewater effluent is discharged into the ground via a gravity or pressurized distribution system. These facilities are typically regulated by the local health jurisdiction.	Septic systems are typically used in all types of areas (urban, suburban and rural) where lot conditions meet applicable regulations, and the distance to a municipal system made it cost prohibitive to connect to a centralized collection/treatment facility.	Lot size and site conditions dictate use. Slopes, soil types and depth, minimum depth-to-groundwater, and mandatory setback distance from property lines, wells, structures, and water bodies must be maintained. Properly functioning systems may be suitable for existing development and areas zoned Urban Restricted in close proximity to critical areas.

Source: Parametrix 2012; Kitsap County 2012

While conceptual planning can be conducted about the merits of these various technologies, the determination of what is an appropriate system to achieve the urban densities is a site-specific determination that requires expense in engineering and scientific analysis at a micro-level. In contrast, comprehensive planning, by nature, is a macro-level planning document that guides development regulations, capital facility plans and other governmental policies.

Over the course of 2008-2009, Kitsap County, along with service providers, developers, environmental groups and other interested parties participated in the Wastewater Infrastructure Taskforce. This Taskforce was charged with developing recommendations on how to resolve these issues. A final report was issued and made recommendations on digital inventory of wastewater systems, finance opportunities, location of potential septic failure areas and public funding sequencing and prioritization. It classified many issues into suites including environmental, market-based and infill focused. With the issues of topography, engineering, competing priorities for investment and public versus private sources

funding various improvements, this taskforce was unable to come to one conclusion regarding wastewater provision. It was concluded that at a macro, comprehensive plan level a host of wastewater service systems and funding sources is necessary.

ENVIRONMENTAL PROTECTION AND PUBLIC SAFETY IN URBAN AREAS

Environmental Sensitivity

As discussed above, Kitsap County’s UGAs have rolling topography and critical areas, resulting in environmental constraints. Bordering these areas, these same UGAs have land appropriate for urban development. To reduce illogical boundaries and yet protect the environmentally-constrained areas, Kitsap County has employed environmentally-sensitive residential zones, such as Urban Restricted (1-5 DU/acre) and Illahee Greenbelt Overlay (1-4 DU/acre). These zones, in combination with the Critical Areas Ordinance (CAO), help protect endangered salmon streams and associated wetlands from impacts of urban development. These areas are not necessarily required to connect to public sewer but may connect as development dictates. As these lands cannot be logically removed from the UGAs and the areas meet the requirements of the Litowitz test¹⁶ the designations are compliant with GMA. The Central Kitsap UGA provides an example of this issue (Figure 4), showing steep slopes in pink and wetlands in green.

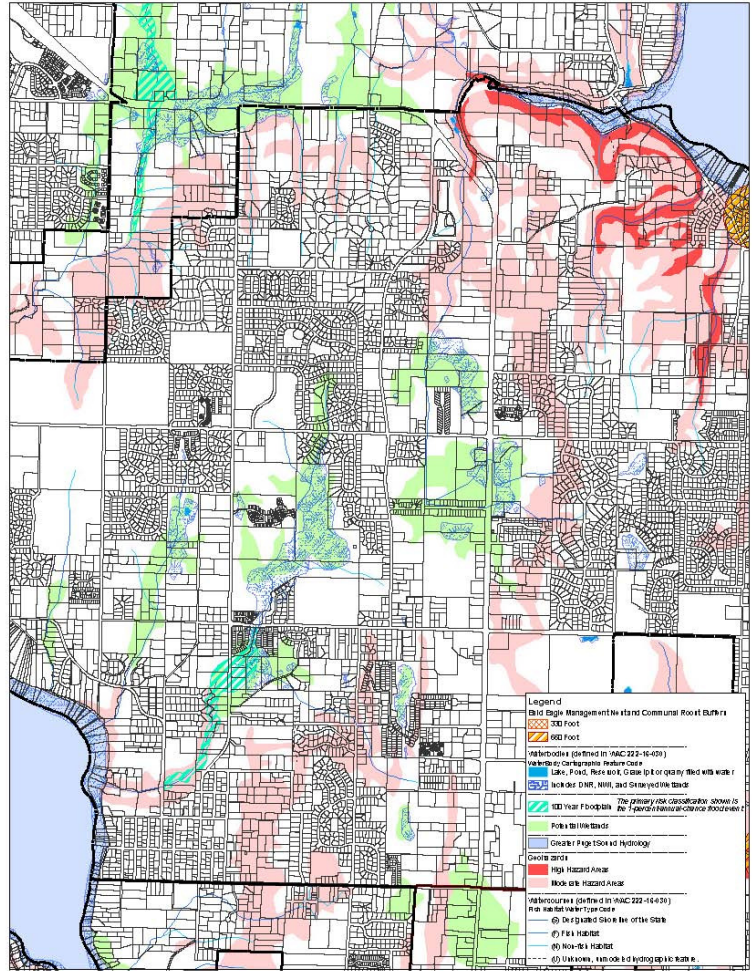


Figure 4.
Critical Areas, Central Kitsap UGA

Additionally, these areas are closely associated with Kitsap’s surface and ground water sources. Virtually all of Kitsap County, other than Bremerton, relies on groundwater as a drinking source. The County regulates, through the CAO,

¹⁶ The Growth Hearings Board has allowed lower density development in certain urban areas under *Litowitz v. City of Federal Way*, CPSGMHB 96-3-0005, FDO (7/22/ 1996). Such lower densities are allowed if they are is used to protect critical area functions when the critical area in question is: 1) Large in scope; 2) structure & functions are complex, and 3) the rank order value is high.

categories of aquifers and whether they pose a potential risk of groundwater contamination with development. As shown in Attachment A, Aquifer Recharge Areas are located throughout the County's urban and rural areas where development has occurred since the 1800s. Many of these existing, pre-GMA developments use on-site septic systems as their primary wastewater service. The Kitsap County Groundwater Management Plan (May 20, 1997) noted the importance of septic systems for aquifer recharge and recommended that the comprehensive plan should encourage the use of septic systems over the development of sewer systems whenever possible. Thus, the use of on-site septic systems, community drainfields and alternative wastewater methods requires a site-specific analysis, and should not be summarily excluded from use in a UGA without measuring the potential benefits of such use.¹⁷

Public Health and Safety

One of the risks of on-site septic systems is the potential for failure and environmental contamination. The Kitsap Public Health District has provided a letter regarding their efforts in UGAs and their evaluations of existing or future health hazards (Attachment B), summarized below.

Over the past 23 years, the Kitsap Public Health District has conducted many countywide investigations regarding both point and non-point source pollution issues. Through this work, the Health District has identified and enforced the correction of thousands of septic system failures and other forms of surface water contamination. Through the Health District's Pollution Identification and Control (PIC) Program, the Health District has studied and addressed numerous non-point source fecal coliform issues stemming from stormwater drainage, wildlife, waterfowl, domestic animals, agriculture and various septic system and sewer failures. Because PIC uses a science-based approach to identify and correct pollution sources, the Health District's work focused on both rural areas (Burley Creek and Gamble Bay) and urban areas (Dyes Inlet, Sinclair Inlet, Liberty Bay) with a particular emphasis along Kitsap County's marine shoreline areas. Additionally, the Health District has taken an active role in addressing a historic environmental hazard within the Gorst UGA. Caused by failing septic systems, Gorst Creek and portions of Sinclair Inlet were significantly impacted by fecal coliform contamination. Through the assistance of the City of Bremerton and state and federal agencies, this contamination was rectified in 2011 with the installation of a sewer main to connect this area to Bremerton's Wastewater Treatment Plant. The sewerage of this area is expected to end the contamination problems from failing septic systems and aid the creek and shoreline to return to its properly functioning levels.

With the Gorst contamination addressed, the Health District is aware of only one remaining area where failing septic systems could potentially create source surface water contamination within an urban growth area. This area is commonly referred to the Broad and Ida Street/Sunnyhill Road area to the west of Bremerton. This area was investigated in 2009, has been prioritized for further investigation beginning in

¹⁷ In the *Suquamish II FDO, supra*, the CPSGMHB noted (at p. 26): "This is not to say that the Board is requiring each existing residence to be connected, but that the service provider should have the capacity (i.e., treatment facilities, trunk lines) to make adequate service available to the area." In its subsequent Order finding Compliance, the CPSGMHB stated (at pp. 8-9) that it "recognizes that, in some instances, properly functioning septic systems may be continued so as to allow limited groundwater supplies to be recharged."

late 2012. The Health District will keep the County informed of its findings during this upcoming investigation.

In 2009, the Health District also participated with the County on the Wastewater Infrastructure Taskforce. Through this effort, the Health District identified “areas of concern” with respect to long-term (>20 years) reliance on septic systems as the primary means for wastewater treatment. Many of these areas of concern are within or nearby to UGA. While the Health District has long-term concerns about some areas served by septic systems where conditions are not necessarily ideal for such systems (e.g., such as small lot sizes and/or poor soils), an “area of concern” is not the same as a documented health hazard. The Health District must thoroughly investigate the conditions of the area prior to designating it as a health hazard. Currently there is no evidence of UGA-wide septic failures, and the Health District has no existing documentation to predict that widespread failures will occur in any of these areas through the 2025 time horizon.

The Health District will continue to assess areas of concern throughout Kitsap County, including portions of the UGAs, through the PIC program in the near future. In addition to the Broad and Ida Streets/Sunnyhill Road area, other areas within or near UGA that will be investigated include Ridgetop Creek, Enetai Creek and South Dye’s Inlet. Through these assessments, the Health District expects that further information will be gathered about potential contamination sources and their impact. However, the Health District has stated it currently has no information that such an assessment will result in documented health hazards caused by failing septic systems or other sewer issues through the 2025 time period.

WASTEWATER PROVISION STRATEGIES

Public and Private Funding

Some Hearings Board decisions raise questions as to a jurisdiction’s role in the funding of wastewater facilities for all conveyance infrastructure including “last-mile” pump stations and main lines to both new and existing development.¹⁸ Historically, public sources of funds have focused on capacity improvements to sewer plants and regional pump stations that serve the system as a whole. This focus has been directed largely by the source of funds used to pay for them, including sewer rates, connection fees and state and federal funding. Kitsap County has expended \$63.6M of these funds towards wastewater improvements since 1998 in its urban service areas. Extensions of minor “last mile” sewer lines and pump stations have historically been the responsibility of development (growth paying for growth) or private property owners converting their existing on-septic systems to sewers. As described above, the need or timing of such extensions is site- and market-specific, which make secured financial predictions difficult. Kitsap County will continue to require developer-funded financing for new development and property owner funding for

¹⁸ See *KCRP IV, supra*, FDO at p. 26 (“The County is required to demonstrate that public services, including sewer, will be available for the allocated population within the twenty-year planning period.”); *Irondale Community Action Neighbors v. Jefferson Cy*, WWGMHB No. 03-2-0010, FDO (5/31/05) (“A defined funding mechanism needs to be included in the capital facilities plan before urban development is allowed.”).

conversions (e.g., private payment, grant funding for connections, or utility local improvement districts). These improvements will be based upon the cost-effective sizing of UGAs with the ability to serve with urban-level sanitary sewer service as high priority.

Strategies – Cost Reductions or Funding Sources

Kitsap has completed a comprehensive analysis of existing and future funding sources and other strategies to fund planning, engineering and construction of urban sewer infrastructure. These strategies are shown in Attachment C and include public and private funding, public/private partnerships, regulatory measures and other mechanisms. These methods may be used to fund a range of wastewater methods beyond just traditional public sewer facilities. Kitsap County and its service providers has and/or currently employs many of the Washington State authorized mechanisms as sources of funds. Additionally, in 2009, both the Washington State Office of Financial Management and the Puget Sound Regional Council completed two separate studies on financing public infrastructure (*Restructuring State Public Infrastructure Programs* and *Funding for Local Government Infrastructure*), which evaluated existing revenue sources for a variety of public services. Of particular note, the studies concluded that state and federal governments’ historical role in funding infrastructure is on a decrease, and those remaining funding programs are too complex and costly for local governments to participate in. In short, the burden of providing infrastructure in UGAs has and will continue to be shouldered by local governments, developers and private property owners. This provides a significant challenge for local governments, including Kitsap County, where an exploration of many of these strategies may be necessary to address our wastewater infrastructure needs into the future.

Kitsap has paired these various funding strategies with specific areas of its unincorporated UGAs (Attachment D and E). Kitsap has analyzed the characteristics of each development sector including its topography, critical areas, zoning and existing development patterns. This analysis also included an assessment of all existing sewer facilities and future needs based upon traditional sewer service. It also addressed soil types as they apply to the potential for alternative systems.

THE END OF THE 20-YEAR PLANNING HORIZON

“Adequate and Available”

As Kitsap County approaches the 20-year “anniversary” of its 1998 Comprehensive Plan and its UGAs, issues have been raised concerning the ability to fully-serve the UGAs with adequate and available urban wastewater service. As documented above, such an assessment must consider multiple factors beyond just whether public sewer infrastructure is available to the entire geography of the UGAs.

First, of course, is the proximity to existing public sewer lines. Since the adoption of Kitsap’s first Comprehensive Plan in 1998, development has brought sewer infrastructure to substantial portions of the UGAs to a level where much of the existing UGA is within close proximity to existing lines. This has been due to extensive public and private investment in the sewer systems as well as regulatory requirements for connection. The requirements have included the condition for all new subdivision and other development increasing density within unincorporated UGAs to connect to urban levels of public sewer.

Additionally, Kitsap County Code requires all new development, substantial remodels and properties with failing septic systems within 200 feet of a sewer main to connect to public sewer. The expansion of the system has provided additional connection capability and sewer capacity within a vast majority of the UGA boundaries (Attachment D).

Second, all development types included within the UGAs as prescribed by the GMA priority system must be considered. The Tier 2 developments on existing, functioning on-site septic systems were included in UGAs as their development pattern would dictate. However, they have had no need for expensive public sewer infrastructure and there is no documentation that they will need to connect during the 2005-2025 horizon. Tier 2 lands with properly maintained septic systems have life-spans that extend beyond the life of the Comprehensive Plan which designated them urban. Additionally, Kitsap has no documentation of health hazards nor an expectation that the transition of existing on-site septic systems will be necessary in the near or long-term. Nevertheless, Kitsap has provided full planning for public sewer and strategies for construction if such a service is required in the future.

Third, the critical area constraints of the unserved lands must be considered. Many of the unsewered areas are unavailable for future development due to the sensitivity of wetlands, streams and steep slopes (or a combination of all) located in and around them. These include endangered salmon streams and headwaters to high category wetlands with substantial wildlife habitat. These areas have not been previously developed and are unlikely to develop in the future. Additionally, Kitsap has designated many of these areas Urban Restricted to reflect these characteristics; allowing lower density development to reduce stormwater runoff and tree canopy disturbance.

Finally, strategies must be in place to ensure adequacy of urban wastewater service during the planning period. These strategies may include the furthering of multiple sewer techniques and funding mechanisms. Kitsap has analyzed the sewer needs of its UGAs and has assessed the characteristics, topographic challenges, and future sewer facility opportunities for various sectors of the UGA boundaries (Attachments D and E). These sectors have been paired with potential funding mechanisms when, and if, they require construction of urban levels of sewer service during the 2025 planning horizon. Further discussion of these strategies can be found below.

Based upon these factors, Kitsap has planned, developed strategies and/or provided its UGAs with adequate and available wastewater service as required by GMA.

CONCLUSIONS

GMA requires the provision of adequate and available urban services, such as wastewater, to urban growth areas (UGAs), but the Act does not define what precisely might constitute an urban wastewater service. It is not clear that all development within a UGA is expected to connect to traditional public sewer within the 20-year horizon, or whether it is the government's responsibility to provide public funding to install such infrastructure within this time frame. Thus, these issues should be addressed through local discretion and local circumstances.

As outlined in the GMA, UGAs must be sized for future urban growth but should also include areas of historic pre-GMA development that were developed at less than full urban standards (i.e., Tier 2 lands). This historic development pattern usually has no redevelopment potential, nor does it need immediate connection to public sewer systems if served by properly functioning on-site septic systems. These developments likely will not need to connect to public sewer within the 20-year planning horizon, yet they often require other urban services and meet the GMA definition of “urban growth.”

While jurisdictions must plan for connection to public sewer service as a contingency and provide clear strategies to that end, the expectation that public entities will solely fund such improvements to either fuel future growth or pay for unnecessary conversions of historic development with property functioning septic systems does not comport with the GMA principle to require “growth pay for growth.” Such a requirement would force jurisdictions to install unnecessary infrastructure using capital funds that have been extremely limited in the past years. Alternatively, it would force jurisdictions to reconfigure UGAs into illogical boundaries leaving islands of existing denser development outside the UGAs simply because they are served by on-site septic systems, but meet all other definition of “urban growth.”

Additionally, the concept that an expensive public sewer system is the only method of urban wastewater provision is contradicted by recent technology and limits the use of additional technological advancements. Multiple options to public sewer systems exist that are available for construction throughout Kitsap’s UGAs that would maintain urban densities and intensities. While these systems are site-specific in their application, they can be more cost-effective to new development and retrofit of existing neighborhoods.

Finally, the concept that a Comprehensive Plan must guarantee funding for conveyance infrastructure that has historically been funded by private development, local improvement districts or private property owners is a drastic shift that has significant fiscal implications statewide. These costs historically have not been the responsibility of local jurisdictions and GMA does not direct such a responsibility shift. Kitsap County should be able to continue to rely on such private funding to ensure that growth pays for growth.

In sum, Kitsap County has adequately planned for providing wastewater throughout its UGAs per the GMA requirements. Kitsap County will continue to explore the use of on-site and that of site-specific alternative wastewater technologies, in addition to traditional methods of providing sewer service, with consideration of the development continuum and required GMA assessments of county comprehensive plans.

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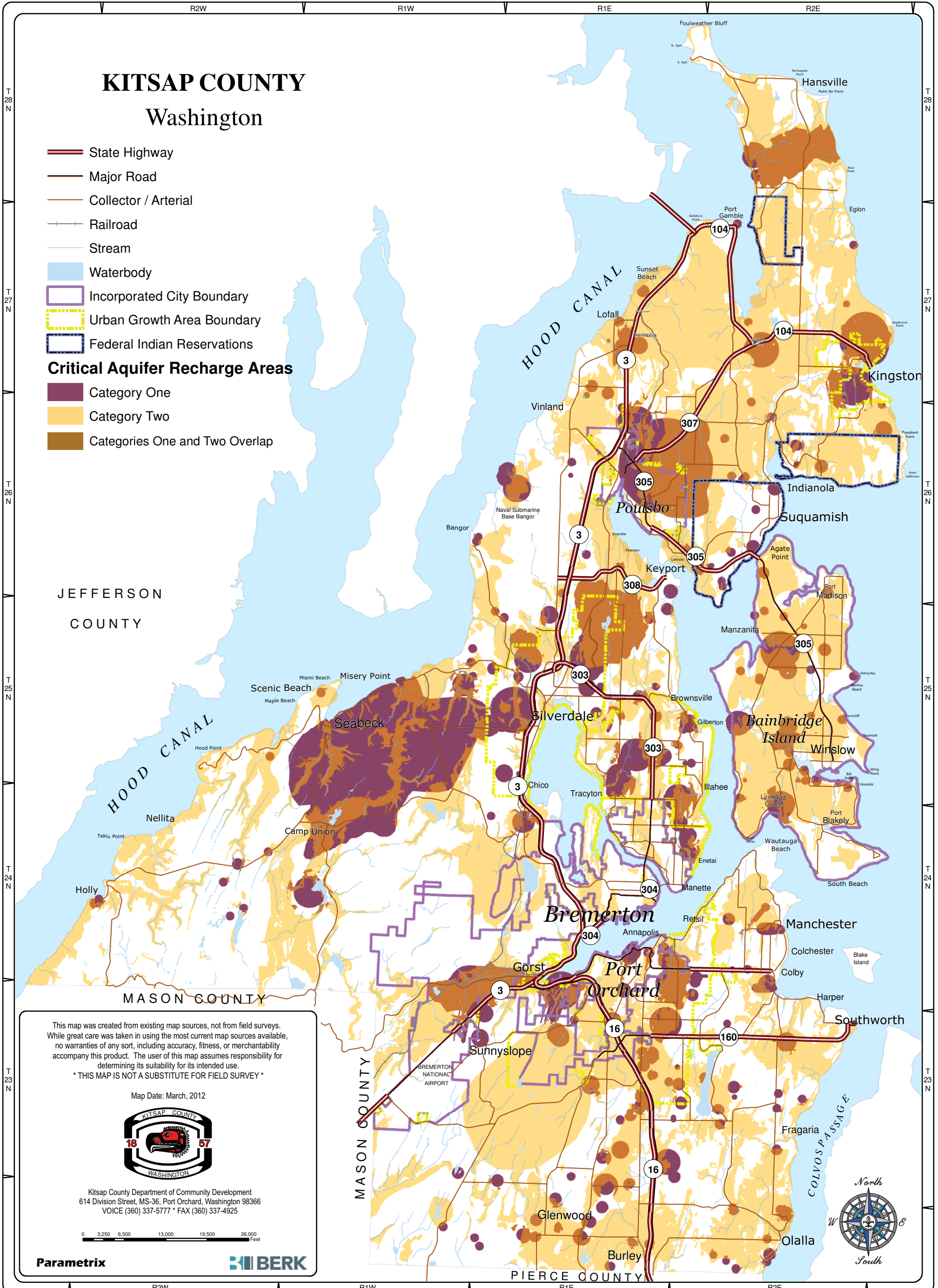


Figure 3.1-4. Critical Acquirer Recharge Areas



April 18, 2012

Kitsap County Board of County Commissioners
614 Division Street, MS-4
Port Orchard, WA 98366

RE: Kitsap Urban Growth Areas and Wastewater Infrastructure

Dear Board of Commissioners:

Thank you for your coordination with the Kitsap Public Health District in the 2012 update of the Kitsap County Comprehensive Plan. For over six decades the Health District has been involved with the protection of public health in Kitsap's urban and rural areas, and welcomes the opportunity to participate in discussions of issues that include existing and future wastewater service / wastewater infrastructure.

Over the last 23 years, the Health District has conducted many investigations of both point and non-point source pollution issues countywide. Through this work, the Health District has identified and enforced the correction of thousands of septic system failures and other sources of surface water contamination. Through the Health District's Pollution Identification and Control (PIC) Program, we have studied and addressed numerous non-point source fecal coliform issues stemming from storm water drainage, wildlife, waterfowl, domestic animals, agriculture and various septic system and public sewer failures. Because PIC uses a science-based approach to identify and correct pollution sources, our work has focused on both rural watershed areas (e.g., Burley Creek and Gamble Bay) and urban watershed areas (e.g., Dyes Inlet, Sinclair Inlet, Liberty Bay) with a particular emphasis along our marine shoreline areas.

Additionally, as you are aware the Health District took an active role in addressing a historic public health and environmental hazard within the Gorst urban growth area. Caused primarily by failing septic systems, Gorst Creek and portions of Sinclair Inlet were significantly impacted by fecal coliform bacteria contamination, and had been for over 40 years. Through the assistance of the City of Bremerton and other state and federal agencies, this contamination was rectified in 2011 with the installation of a sewer main to connect this area to Bremerton's Wastewater Treatment Plant. The sewerage of this area is expected to end the contamination problems from failing septic systems and aid the creek and shoreline to return to its properly functioning levels. Recent water quality data indicates that improving trends are already evident in Gorst Creek, and both Gorst Creek and Sinclair Inlet current meet state water quality standards.

Attachment B

Board of Kitsap County Commissioners

April 18, 2012

Page 2

With the Gorst contamination addressed, the Health District is aware of only one other potentially significant problem area --- in an urban growth area --- where failing septic systems are the primary source surface water contamination and where the repair of these failing septic systems are problematic due to poor site conditions (i.e., poor soils, small lots). This area is commonly referred to as the Broad and Ida Street / Sunnyhill Road area to the west of Bremerton. This area was recently investigated in 2009, and has been prioritized for further investigation beginning in late 2012. The Health District is very concerned about this area and will keep the County informed of our findings during this upcoming investigation.

In 2009, the Health District also participated with your staff on the Wastewater Infrastructure Taskforce. Through this effort, the Health District identified "areas of concern" with respect to long-term (>20 years) reliance on septic systems as the primary means for wastewater treatment. Many of these areas of concern are within or nearby to UGA. While the Health District has long-term concerns with these areas served by septic systems, where conditions are not necessarily ideal for such systems (e.g., age of development, small lot sizes, and/or poor soils), an "area of concern" is not the same as a documented health hazard. An area of concern means that the Health District will keep these areas prioritized for future work efforts. The Health District must thoroughly investigate the conditions of these areas prior to designating it as a health hazard. Currently there is no evidence of widespread septic failures UGA-wide, and the Health District has no existing documentation to predict that widespread failures will occur in any of these areas through the 2025 time horizon.

The Health District will continue to assess areas of concern throughout Kitsap County, including portions of the urban growth areas, through the PIC program in the near future. In addition to the Broad and Ida Streets/Sunnyhill Road area, other areas within or near UGA that will be investigated include Ridgetop Creek, Enetai Creek and South Dyes Inlet. Through these assessments, we expect that further information will be gathered about potential contamination sources and their impact. Again, however the Health District currently has no information that such an assessment will result in the declaration of a health hazard caused by failing septic systems or other sewer issues through the 2025 time period.

Thank you for the opportunity to participate in the Comprehensive Plan update. If you need additional information, please don't hesitate to engage us.

Sincerely,



Keith Grellner

Director of Environmental Health
Kitsap Public Health District

ATTACHMENT C

WASTEWATER PROVISION STRATEGIES

FUNDING AND REGULATORY

Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
PUBLIC SOURCES (FUNDING OR REGULATION)					
General Fund	Move funding from other Kitsap County departments to fund wastewater projects.	No	Yes	<p>Provides funding mechanism to dedicate to infrastructure development.</p> <p>Currently, supports other regional services in the County which have no other sources of revenue.</p> <p>Generation of revenues are dependent on the health of the economy (sales tax, property tax, etc).</p>	All UGAs within Kitsap County's Sewer Service Area (Kingston, Silverdale, Central Kitsap, Poulsbo)

Wastewater Improvement Fund	Move funding within the Wastewater CIP to fund specific projects.	No	Yes	Provides funding mechanism to maintain and construct infrastructure. Limited funding, roughly, \$5M annually is dedicated to maintaining the existing system and improvements to the treatment plants.	Areas of the UGA in close proximity to existing sewer mains or capacity improvements in existing pump stations and mains.
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
Wastewater Construction Fund	Move funding within the Wastewater CIP to fund specific projects.	No	Yes	Provides funding mechanism to maintain and construct infrastructure. Limited funding, roughly, \$15M annually and is dedicated to maintaining the existing system and improvements to the treatment plants.	Areas of the UGA in close proximity to existing sewer mains or capacity improvements in existing pump stations and mains.

Real Estate Excise Tax (REET)	Dedicate some portion of future funding from this revenue stream to wastewater projects.	No	Yes	Provides funding mechanism to maintain and construct infrastructure. Limited funding, currently supports many other capital programs (parks, public buildings, etc). Revenue generation is dependent on economic conditions (currently drastically reduced).	Infill Development Areas of the UGA in close proximity to existing sewer mains or capacity improvements in existing pump stations and mains.
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
Sewer Rate/Connection Fee Adjustments	Adjust sewer rates to accommodate up front expenses of installing wastewater infrastructure. Payback through late-comers agreements and additional connection fees.	No	Yes	Rate increases are already needed for sewer plan improvements. Economy in flux making the investments questionable. Must show a clear nexus between the rates and the needed improvements.	Existing development without infrastructure Infill/Redevelopment Environmental hazard areas

Federal Grants	Grant funding from the federal government. Programs include, but not limited to: USDA Water & Waste Disposal Grant HUD Brownfields Economic Development Initiative (BEDI) Centennial Clean Water Fund	No	Yes	Provides funding mechanism to maintain and construct infrastructure. Highly competitive, costly reporting requirements. Projects awarded typically have to be an environmental hazard. Historical funding amounts have been reduced	Existing development without infrastructure Infill/Redevelopment Vacant lands Environmental hazard areas
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
State Grants and Loans	Grant funding from Washington State. Programs include: Public Works Trust Fund Clean Water Revolving Fund Community Development Block Grant Community Economic Revitalization Board Salmon Recovery Funding Board	No	Yes	Provides funding mechanism to maintain and construct infrastructure. Highly competitive, costly reporting requirements. Projects awarded typically involve a severe public or environmental hazard. Historical funding amounts have been reduced.	Existing development without infrastructure Infill/Redevelopment Vacant lands Environmental hazard areas

Explore Specific Use of Alternative Septic Systems	Begin analyzing specific geographical areas for the potential of more cost-effective sewer technologies throughout the UGA boundaries.	No	Yes	May provide additional wastewater planning options beyond costly public sewer. Costly analysis includes soil surveys and property owner participation (unlikely as failures are not imminent).	Existing development without infrastructure Environmental hazard areas
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
Allow Use of Grinder Pumps	Allow the use of grinder pumps in areas where pump stations are cost prohibitive for new or existing development.	No	Yes	Removes need for multiple pump/lift stations in portions of the UGA boundaries. Their removal reduces the related costs of sewerage an area (\$500K - \$1M each). Complicated ownership/operation structure can lead to higher maintenance costs and other issues.	Existing development without infrastructure Infill/Redevelopment Vacant lands Environmental hazard areas
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Land Use Measures – Reduce UGA Size	UGAs could be contracted to reduced to remove the need for capacity and conveyance improvements.	No	Yes	Eliminates need for sewer infrastructure to certain areas over the 20-year planning horizon. Does not address funding issues to expand treatment capacity nor service provision to existing development on septic systems. Re –designation of existing suburban development as rural areas could negatively affect the County’s rural character.	Areas on the fringe of the UGAs with existing suburban development with high infrastructure costs or vacant/underutilized lands with no existing urban infrastructure.
Code Requirements – Sewer Connection	Require all subdivision or projects increasing density to connect to urban levels of sewer. Require new development within 200 feet of sewer mains to connect to public sewer. Require failing septic systems within 200 feet of an existing sewer main to connect to public sewer	No	Yes	Included in the 2006 and 2012 Comprehensive Plan update as requirements for development. Must be clearly defined for the public in regards to distance calculations and construction standards.	All unincorporated UGAs
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Transfer of Development Rights	Allow property owners to sell development rights from their properties with the proceeds intended to fund infrastructure within an Urban Growth Areas. In Kitsap County, the TDR program is a market-based land use incentive program for higher densities or intensity of uses. Currently, Kitsap County's program allows the sale of county property for TDR credits, but does not direct the use of this revenue.	No	Yes RCW 36.70A.	Provides funding from public lands to dedicate to infrastructure development. Transfer of development rights programs have a varying success rate due to market conditions and cost of operation. Limited existing market for TDRs in Kitsap County.	Infill/Redevelopment Areas of Environmental Concern
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Revolving Loan Fund	<p>A non-profit organization could provide low interest loans to development proposed within UGAs. As the loans are repaid additional loans can be issued.</p> <p>Project feasibility is based upon acquiring stake or seed money to begin program (grants or other funding).</p>	No	Yes	<p>Low interest loans.</p> <p>Provides financial bridge for projects that are close to being viable.</p> <p>Difficulty finding sources for initial start-up.</p> <p>Risk associated with loans for projects in a depressed housing market.</p>	<p>Infill Redevelopment</p> <p>Expanded UGAs</p>
City Annexations/ Incorporation	<p>Much of the areas within UGA boundaries are expected to be annexed or incorporated during the 20-year planning period. The responsibility for their funding moves to the respective city and their enhanced funding mechanisms (B&O tax, utility tax, etc.)</p>	<p>Yes</p> <p>However, most annexation mechanisms require property owner approval</p>	Yes	<p>Shifts local service provision to cities, as encouraged by GMA.</p> <p>Allows additional revenues to be generated to address service provision.</p>	<p>All associated UGAs (East Bremerton, West Bremerton, Gorst, SKIA, McCormick/ULID #^ and Port Orchard/South Kitsap</p>
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Utility Tax	Similar to municipal utility taxes, the proposal would also authorize counties to impose a tax for many urban services (sewer, etc.) onto taxable properties in unincorporated UGAs. The revenue from this tax would be used to fund wastewater infrastructure.	No	No. Limited to cities only	<p>Large source of revenue.</p> <p>Adjustable.</p> <p>Highly reliable, broad based, new revenue.</p> <p>Can be imposed through councilmatic action.</p> <p>Requires legislative change.</p> <p>County does not currently have authority.</p>	<p>Infill/Redevelopment</p> <p>Capacity improvement to existing infrastructure.</p> <p>Areas of Environmental Concern</p>
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Planned Action Environmental Impact Statement (EIS)	<p>A planned action EIS includes detailed environmental analysis and reflects a decision that adequate environmental review has been completed. To that end, further review under SEPA, for each specific development proposal or phase, would not be required if the proposal meets certain development thresholds specified in the EIS. Although future proposals that qualify as planned actions would not be subject to additional SEPA review, they would be subject to application notification and permit process requirements.</p>	<p>No</p>	<p>Yes. WAC 197-11</p>	<p>Removes some questions about cost of development and provides incentive for urban development.</p> <p>Facilitates timeline for infrastructure addition.</p> <p>Not directly revenue generating.</p> <p>Politically intensive.</p> <p>Costly for up-front planning.</p> <p>Jurisdictions have different determination thresholds.</p>	<p>Infill /Redevelopment</p> <p>Typically used for small areas with minimal environmental constraints, similar zoning and large redevelopment potential.</p>
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Multi-Family Housing Tax Exemptions	These exemptions are used by cities planning under GMA that have designated urban centers to encourage multi-family construction with a portion dedicated specifically to low-income housing. Designation of urban centers is up to the local jurisdiction, but they must contain 1) several existing office and commercial uses, 2) adequate public facilities, and 3) mixture of housing, recreation and cultural activities.	No	Yes. RCW 84.14 but only applies to cities and certain counties.	Cost-offset of multi-family development. Higher density incentive. Not directly revenue generating.	Infill/Redevelopment Expanded UGAs
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

<p>Sewer Capacity Charge</p>	<p>A charge in addition to sewer service billed to those customers who connected to the sanitary sewage system on or after a certain date established by the local legislative authority. For example, King County Metro has established this rate program in which the funding goes directly to expanding treatment facilities or expanding existing facilities.</p>	<p>No</p>	<p>Yes. RCW 35.58, but must include two cities. one which is 10,000 or more in population.</p>	<p>Addresses increasing cost of new capacity (through connection fee) with different connection charges for properties connecting after a particular date. Addresses “growth pays for growth.” Complex administration Politically-charged Limited utility for Kitsap A clear nexus for increased rates must be determined.</p>	<p>Areas served by Central Kitsap or Kingston Wastewater Facilities Areas served by the Port Orchard/West Sound Utility District sewer plant</p>
<p>Revenue Sharing</p>	<p>Revenue sharing is the gradual shift of revenue from one jurisdiction to another (i.e. sales or property tax) based upon annexation or other factor. The Cities of Bremerton and Port Orchard and recently withdrawn from the current revenue sharing agreement between the County and its cities, which provided such a transfer.</p>	<p>No</p>	<p>Yes</p>	<p>Maximizes existing revenue sources by sharing costs. Incentivize county to continue infrastructure improvement in likely annexation areas. Not directly revenue generating. Politically-charged.</p>	<p>Any UGA associated with an existing city. Infill/Redevelopment</p>

PRIVATE STRATEGIES

Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
Developer Extensions	Extension and improvements to the wastewater conveyance system would be borne by developments.	No	Yes	Historically, the funding mechanism for conveyance infrastructure (growth pays for growth). Requires high-density projects and large tracts of land, limited critical areas to balance out costs. Costly and pump stations may not be located in the most logical and regional location.	Vacant lands Infill/Redevelopment
Utility Local Improvement District (ULID)	Property owners assess themselves a fee to pay for sewer improvements. The maximum amount of an ULID is unlimited with funding coming from voter-approved assessments on properties within specified district.	Yes	Yes	Provides funding mechanism to maintain and construct infrastructure. Requires 51% approval of properties located within the district.	Existing development without adequate sewer infrastructure Infill/Redevelopment Vacant lands
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Latecomers Agreements	Allowing latecomers agreements (the requirement for future development to pay back infrastructure costs) to accrue interest and lengthening the period of time in which these payments may be received.	No	Yes	<p>Delayed benefits with money coming in after development is constructed.</p> <p>20 years too little time to recoup costs.</p> <p>Interest percentage is not worth risk.</p> <p>Only benefits city or county, not the developer.</p>	<p>Infill/Redevelopment</p> <p>Expanded UGAs</p> <p>Areas of Environmental Concern</p> <p>Vacant lands</p>
PUBLIC/PRIVATE STRATEGIES					
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

Community Development Districts (CDDs)	<p>CDD's are quasi-government agencies focusing on a specified district boundary. A CDD infrastructure implementation by providing maintenance/operation and construction of capital improvements for a number of public services (i.e. sewer, water, utilities, transportation and/or parks). The district would also have taxing authority to pay for proposed capital improvements, which may or may not require a public vote. CDDs are similar in function to that of Transportation Benefit Districts (TBD). TBDs are currently authorized in Washington state, but limited only to transportation improvements.</p>	<p>Yes</p>	<p>No</p>	<p>Focuses on revenue and costs for a specific area</p> <p>Binding on future incorporations</p> <p>More flexible taxing authority</p> <p>Large area needed</p> <p>Complicated to administer</p> <p>Politically-charged</p>	<p>Silverdale UGA</p> <p>Kingston UGA</p>
Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability

<p>Tax Increment Financing</p>	<p>Tax Increment Financing is a tool to use future gains in taxes (i.e. real estate excise tax, sales tax, property tax, etc.) to finance capital improvements. Tax Increment Financing dedicates that increased revenue to finance debt issued to pay for the project. For example, when a public project such as a road, sewer or water is constructed, there is an increase in the value of surrounding area and often new private investment. This increased value and investment creates more taxable property, which increases tax revenues. Currently, Washington state only allows Tax Increment Financing through the use of CERB, LIFT or a state identified increment area (only one currently designated in the entire state). The Washington state legislature approved the LIFT program in 2006 as a form of tax-increment financing. This mechanism allows jurisdictions to receive a rebate up to \$1M of their sales tax revenue previously obligated to the state for future infrastructure projects.</p>	<p>No</p>	<p>Depends, Limited to CERB LIFT and Hospital Benefit Programs.</p>	<p>Focuses on revenue and costs for a specific area</p> <p>Large area needed</p> <p>Not binding on future incorporations or annexations</p> <p>Complicated to administer</p> <p>Highly competitive</p> <p>Revenue generation is dependent on economy</p>	<p>Infill/Redevelopment Areas</p> <p>Capacity improvement to existing infrastructure.</p> <p>Vacant Lands</p>
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Option	Description	Require Public Vote?	Authorized in WA State	Limitations and Opportunities	Areas of Applicability
Tax Municipal-Lease Financing	<p>This infrastructure funding opportunity allows a jurisdiction to rent, with the option of purchase on a specific capital project. Under a lease-purchase arrangement, the government agency leases the asset (and reserves the right to walk away from the transaction without penalty if it does not have sufficient funds to appropriate for the lease in subsequent years). The agency receives a credit for each lease payment so that, at the end of the lease term, the municipality acquires full ownership of the asset. If the municipality terminates the lease prior to the end of the term, the municipality does not get any credit for those lease payments.</p>	No	No	<p>Removes costs of administration and overhead.</p> <p>Liability issues</p> <p>Higher costs borne by newcomers and rate payers.</p> <p>Not currently been done for wastewater facilities.</p> <p>Does not address infrastructure needs in existing pre-GMA developments (Tier 2 lands).</p>	All UGAs

ACRONYM LIST:

B&O = Business and Occupation tax

CDD = Community Development District

CIP = Capital Improvement Plan

CK = Central Kitsap

GMA = Growth Management Act

HBD = Hospital Benefit District

HUD = United State Department of Housing and Urban Development

LIFT = Local Infrastructure Financing Tool

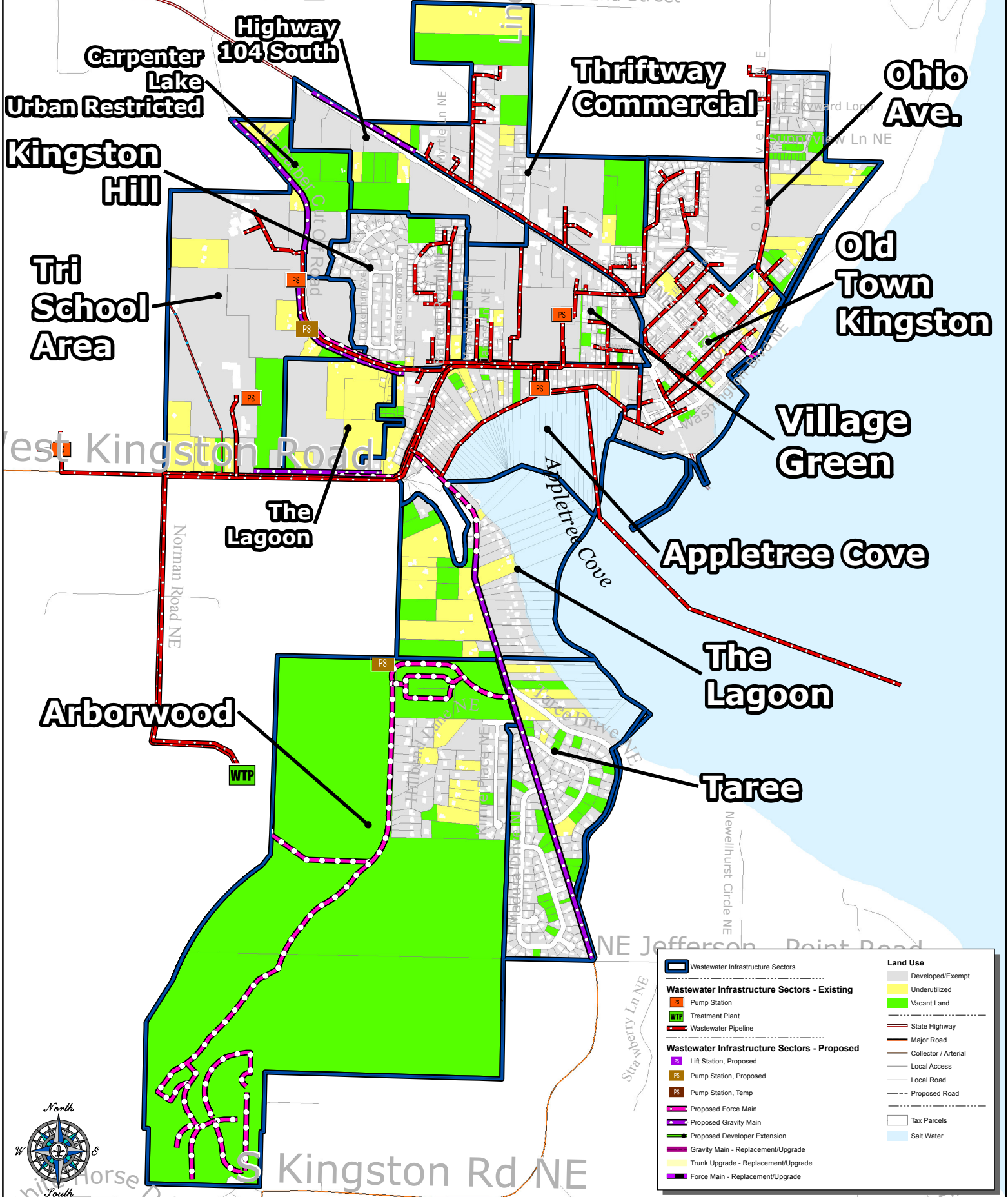
SK = South Kitsap

UGA = Urban Growth Area

ULID = Local Improvement District

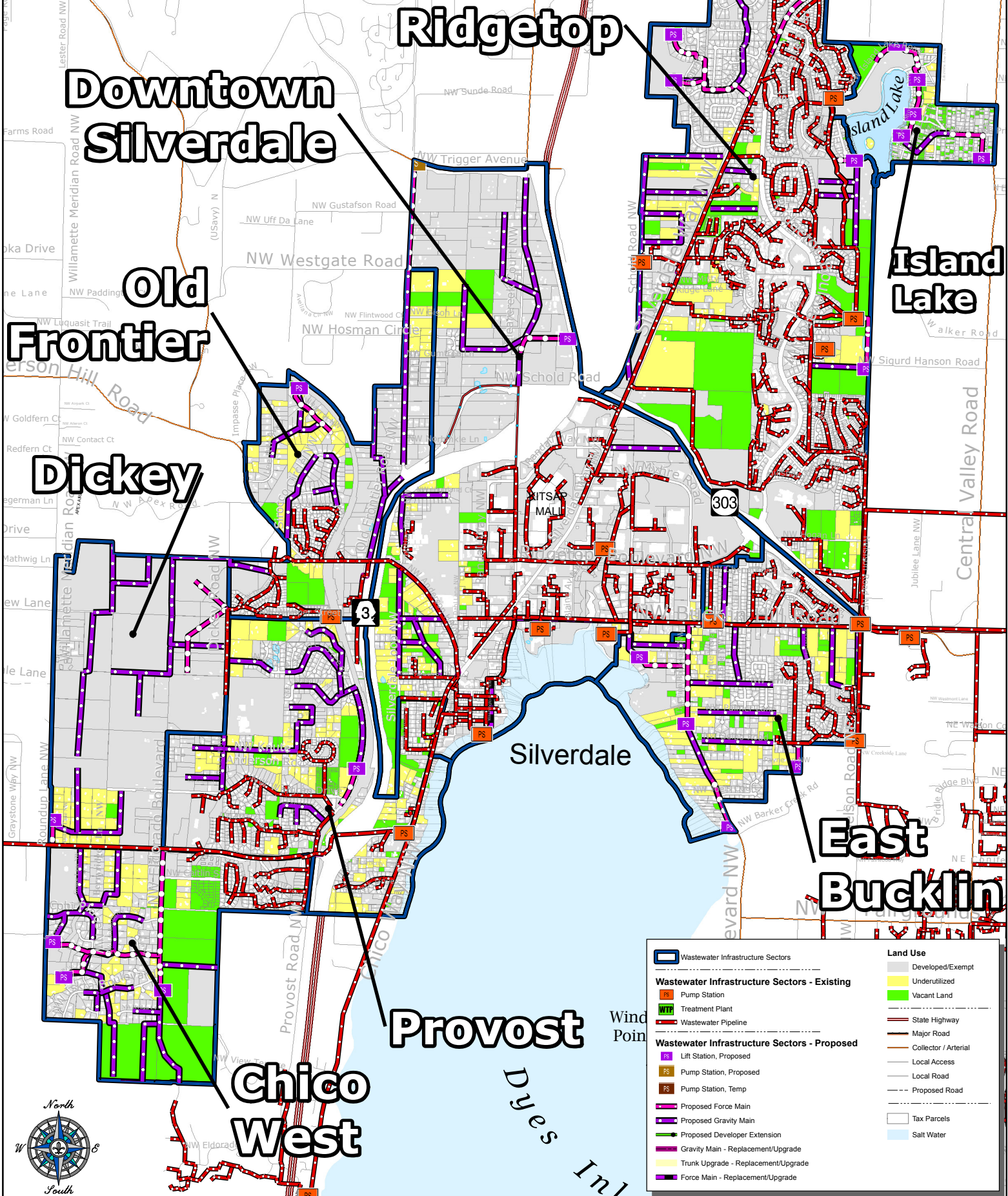
USDA = United States Department of Agriculture

Kingston Urban Growth Area Wastewater Infrastructure Sector Areas



Wastewater Infrastructure Sectors		Land Use	
	Wastewater Infrastructure Sectors		Developed/Exempt
Wastewater Infrastructure Sectors - Existing			Underutilized
	Pump Station		Vacant Land
	Treatment Plant		State Highway
	Wastewater Pipeline		Collector / Arterial
Wastewater Infrastructure Sectors - Proposed			Local Access
	Lift Station, Proposed		Local Road
	Pump Station, Proposed		Proposed Road
	Pump Station, Temp		Tax Parcels
	Proposed Force Main		Salt Water
	Proposed Gravity Main		
	Proposed Developer Extension		
	Gravity Main - Replacement/Upgrade		
	Trunk Upgrade - Replacement/Upgrade		
	Force Main - Replacement/Upgrade		

Silverdale Urban Growth Area Wastewater Infrastructure Sector Areas



Downtown Silverdale

Ridgetop

Island Lake

Old Frontier

Dickey

Silverdale

East Bucklin

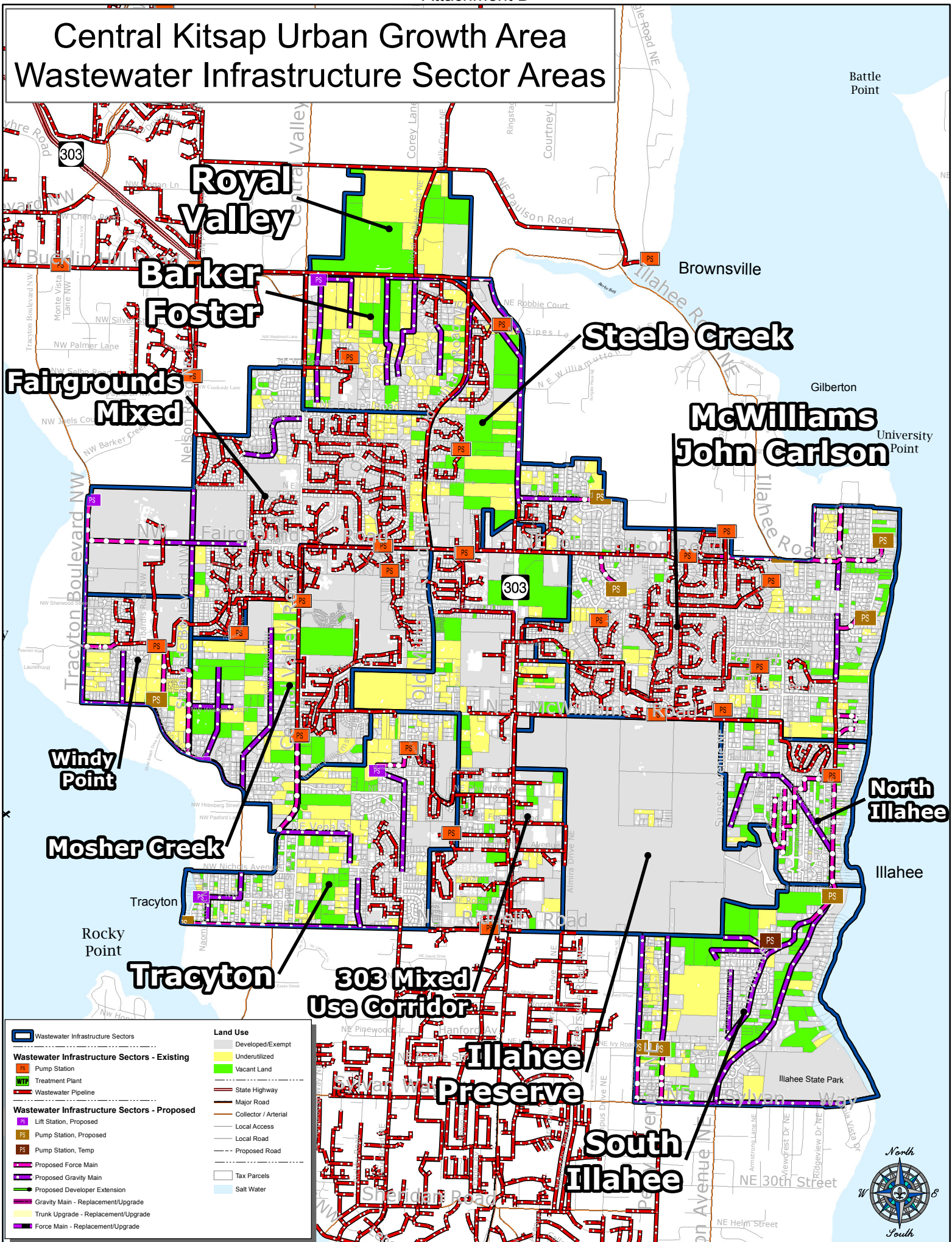
Chico West

Provost

Wastewater Infrastructure Sectors		Land Use	
	Wastewater Infrastructure Sectors		Developed/Exempt
Wastewater Infrastructure Sectors - Existing			
	Pump Station		Underutilized
	Treatment Plant		Vacant Land
	Wastewater Pipeline		State Highway
Wastewater Infrastructure Sectors - Proposed			
	Lift Station, Proposed		Major Road
	Pump Station, Proposed		Collector / Arterial
	Pump Station, Temp		Local Access
	Proposed Force Main		Local Road
	Proposed Gravity Main		Proposed Road
	Proposed Developer Extension		Tax Parcels
	Gravity Main - Replacement/Upgrade		Salt Water
	Trunk Upgrade - Replacement/Upgrade		
	Force Main - Replacement/Upgrade		



Central Kitsap Urban Growth Area Wastewater Infrastructure Sector Areas

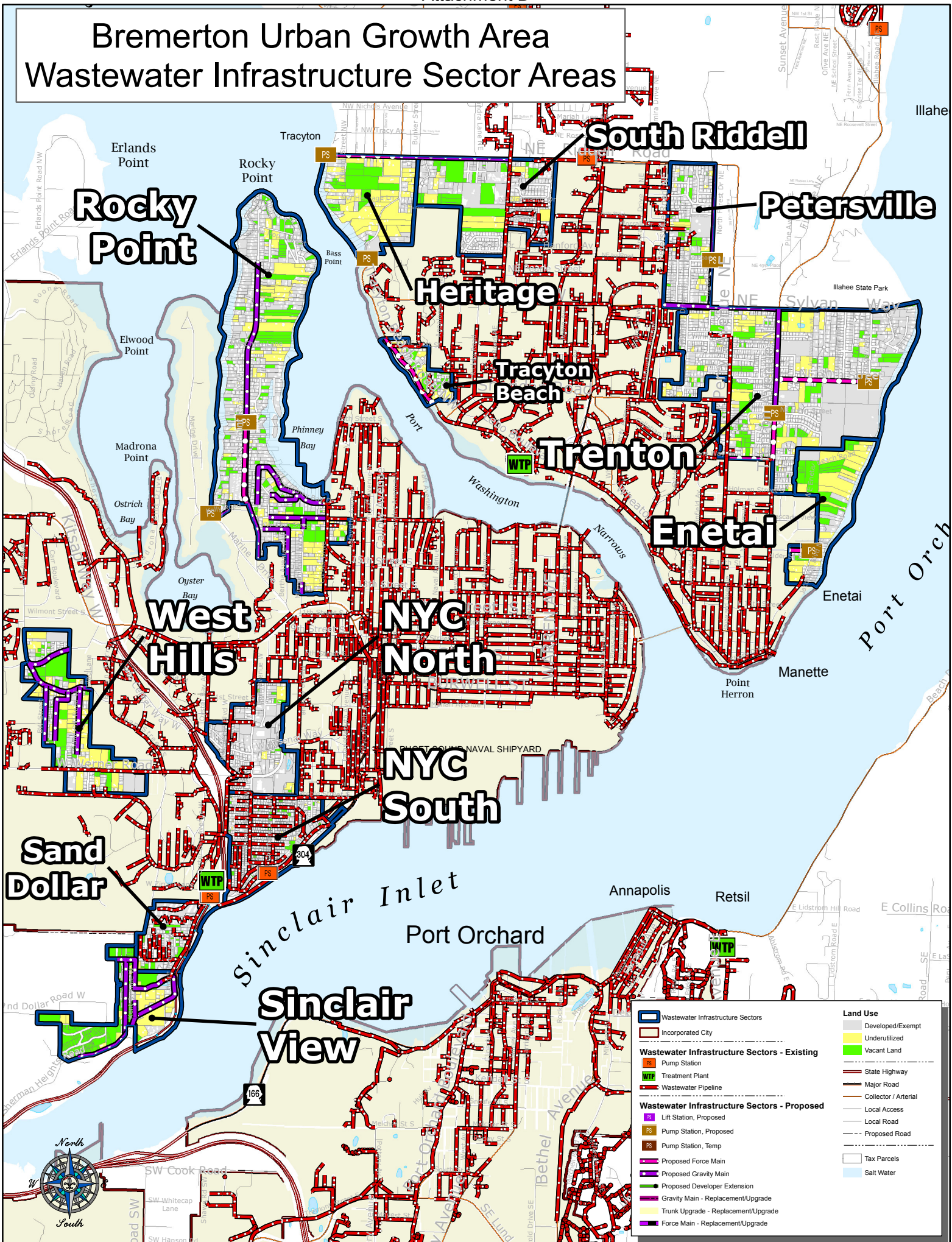


- Wastewater Infrastructure Sectors - Existing**
- Pump Station
 - Treatment Plant
 - Wastewater Pipeline
- Wastewater Infrastructure Sectors - Proposed**
- Lift Station, Proposed
 - Pump Station, Proposed
 - Pump Station, Temp
 - Proposed Force Main
 - Proposed Gravity Main
 - Proposed Developer Extension
 - Gravity Main - Replacement/Upgrade
 - Trunk Upgrade - Replacement/Upgrade
 - Force Main - Replacement/Upgrade

- Land Use**
- Developed/Exempt
 - Underutilized
 - Vacant Land
 - State Highway
 - Major Road
 - Collector / Arterial
 - Local Access
 - Local Road
 - Proposed Road
 - Tax Parcels
 - Salt Water



Bremerton Urban Growth Area Wastewater Infrastructure Sector Areas



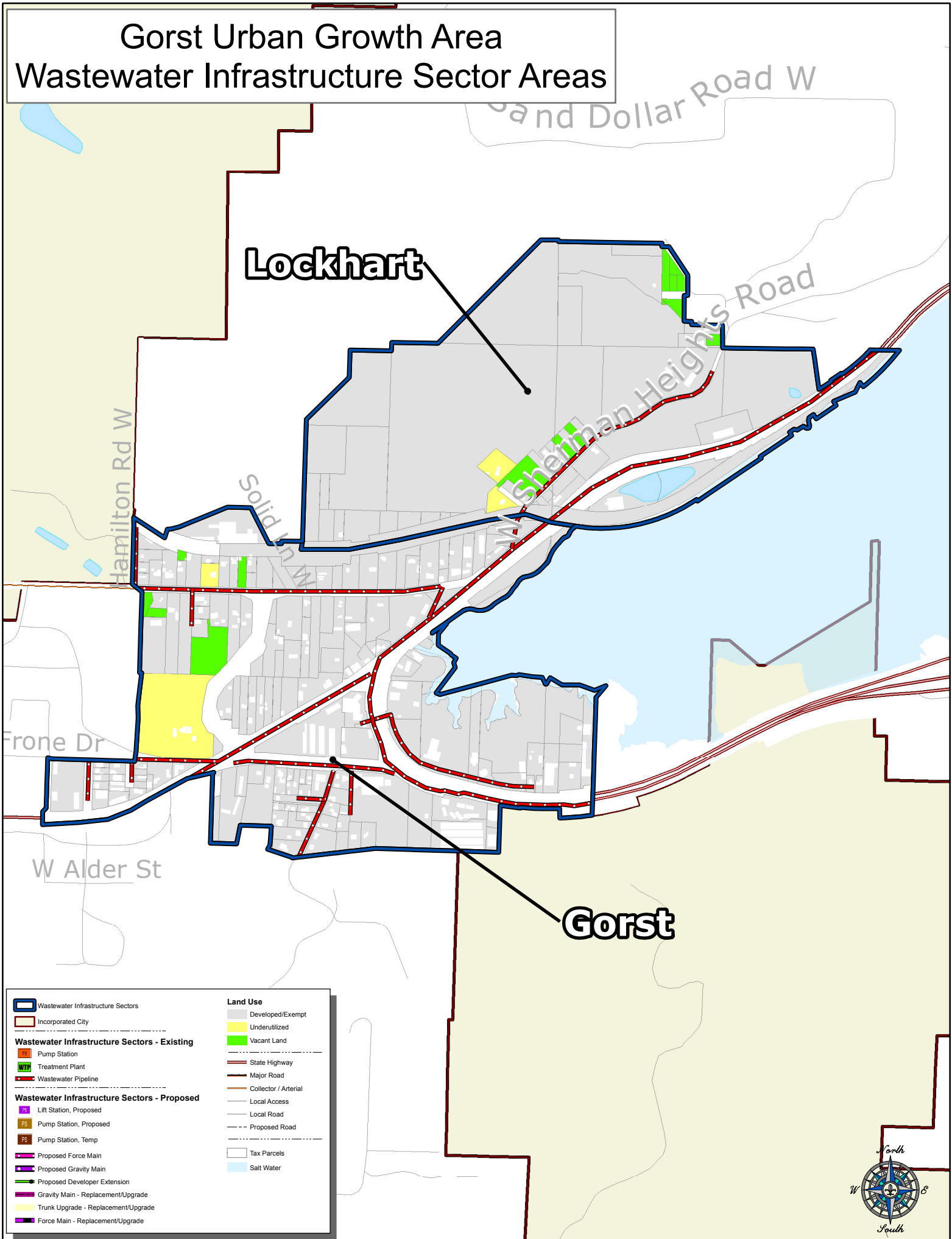
	Wastewater Infrastructure Sectors		Developed/Exempt
	Incorporated City		Underutilized
	Pump Station		Vacant Land
	Treatment Plant		State Highway
	Wastewater Pipeline		Major Road
	Lift Station, Proposed		Collector / Arterial
	Pump Station, Proposed		Local Access
	Pump Station, Temp		Proposed Road
	Proposed Force Main		Tax Parcels
	Proposed Gravity Main		Salt Water
	Proposed Developer Extension		
	Gravity Main - Replacement/Upgrade		
	Trunk Upgrade - Replacement/Upgrade		
	Force Main - Replacement/Upgrade		



Gorst Urban Growth Area Wastewater Infrastructure Sector Areas

Lockhart

Gorst



South Kitsap Industrial Area Wastewater Infrastructure Sector Areas

Olympic View Industrial Park

Northeast SKIA

Olympic View
Industrial Park

Northeast SKIA

Northeast SKIA

BREMERTON
NATIONAL
AIRPORT

Lake Flora

Southeast SKIA

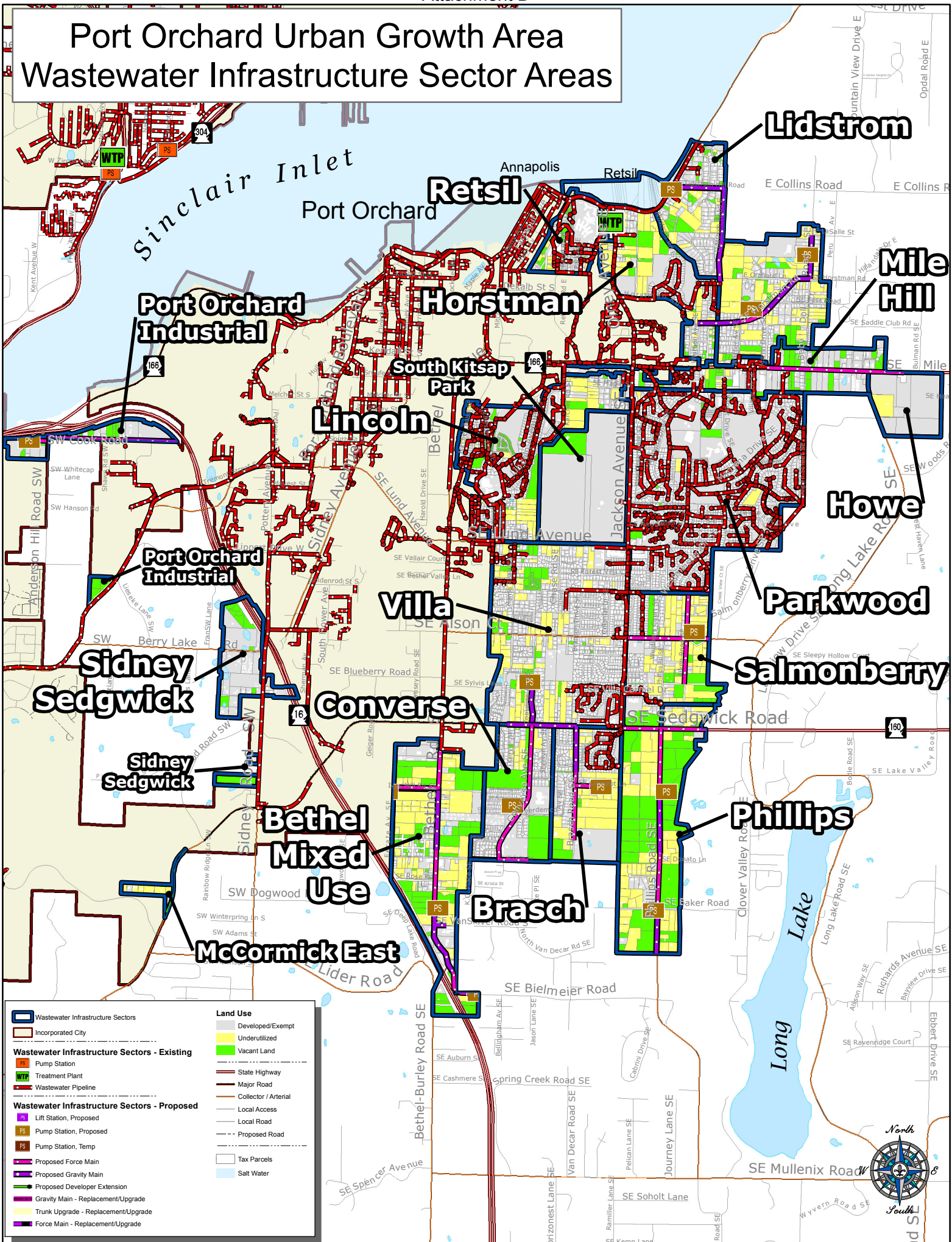
Lake Flora

Lake Flora



Wastewater Infrastructure Sectors		Land Use	
	Wastewater Infrastructure Sectors		Developed/Exempt
	Pump Station		Underutilized
	Treatment Plant		Vacant Land
	Wastewater Pipeline		State Highway
	Lift Station, Proposed		Major Road
	Pump Station, Proposed		Collector / Arterial
	Pump Station, Temp		Local Access
	Proposed Force Main		Local Road
	Proposed Gravity Main		Proposed Road
	Proposed Developer Extension		Tax Parcels
	Gravity Main - Replacement/Upgrade		Salt Water
	Trunk Upgrade - Replacement/Upgrade		
	Force Main - Replacement/Upgrade		

Port Orchard Urban Growth Area Wastewater Infrastructure Sector Areas



Wastewater Infrastructure Sectors	Land Use
Wastewater Infrastructure Sectors	Developed/Exempt
Incorporated City	Underutilized
Wastewater Infrastructure Sectors - Existing	Vacant Land
Pump Station	State Highway
Treatment Plant	Major Road
Wastewater Pipeline	Collector / Arterial
Wastewater Infrastructure Sectors - Proposed	Local Access
Lift Station, Proposed	Local Road
Pump Station, Proposed	Proposed Road
Pump Station, Temp	Tax Parcels
Proposed Force Main	Salt Water
Proposed Gravity Main	
Proposed Developer Extension	
Gravity Main - Replacement/Upgrade	
Trunk Upgrade - Replacement/Upgrade	
Force Main - Replacement/Upgrade	



ATTACHMENT E

WASTEWATER PROVISION STRATEGIES SECTOR ANALYSIS AND SEQUENCING MATRIX

The matrix below provides an analysis regarding various areas of the unincorporated Kitsap urban growth areas. This information is organized into sectors and includes an assessment of the characteristics of the specific area and provides strategies for future sewer provision. The matrix includes descriptions of the areas topography and zoning, existing facilities and based upon these characteristics, applies potential funding sources and wastewater service methods to each.

After the analysis was completed, each sector was assessed based upon the following criteria for potential sequencing of future sewer infrastructure. Kitsap has planned for urban levels of sanitary sewer service within the entirety of its urban boundaries within the 2025 planning horizon. The sequencing range is from 1 to 3 as described below:

Sequence 1: Properties that will develop in the near-term due to their close proximity to existing sewer infrastructure and/or substantial development potential. These areas often have limited critical areas or other constraints on development. These areas will likely develop on traditional public sewer technologies through the existing code requirements for sewer connection. Alternative systems may be options but are unlikely.

Sequence 2: Properties further away from existing sewer infrastructure where substantial development opportunities exist for infill or other construction. These areas may be moderately constrained by critical areas and topographical challenges. These areas may use traditional public sewer if economically-viable but may also explore alternative systems to reduce the costs of conveyance infrastructure.

Sequence 3: Properties furthest away from existing infrastructure, predominantly developed at pre-GMA densities on existing functioning septic systems or properties substantially-constrained by critical areas or other features. Most of these properties have no expected future development potential and likely (based upon current Health District documentation) no need to transition to traditional public sewer infrastructure within the 2025 planning horizon. However, alternative systems or traditional sewer will be extended based upon a documented need within this time period.

For maximum utility, the matrix should be used in concert with associated maps of each Urban Growth Area (UGA). Acronym List follows.

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Kingston UGA				
Arborwood	<ul style="list-style-type: none"> • Sector bound by South Kingston Road to the east, and includes the neighborhoods of Arborwood, Hillabend and Kimbre Place. • Large single-developer ownership in west half which includes vested plat and developers agreement with specific sewer infrastructure design. • Low density residential (Urban Cluster and Urban Low) • Areas of existing development on functioning septic systems in eastern portion. • Moderate slopes and wetlands. • Minor infill development potential in Urban Low area. 	<ul style="list-style-type: none"> • Close proximity to the Kingston Wastewater Treatment Facility. • No existing conveyance systems. 	<ul style="list-style-type: none"> • Developer Extensions • Developer Agreement with vested Arborwood project • Utility Local Improvement District (ULID) 	1
Taree	<ul style="list-style-type: none"> • Sector includes areas east and west of South Kingston Road. • Zoned Urban Low (5-9 DU an acre) • Predominantly areas of existing development on functioning septic systems. • Moderate slopes • Limited redevelopment potential. 	<ul style="list-style-type: none"> • No existing conveyance systems 	<ul style="list-style-type: none"> • Developer extensions • ULID • Alternative wastewater technologies 	3
The Lagoon	<ul style="list-style-type: none"> • Sector includes lands adjacent near to Appletree Cove. • Low density residential (Urban Low and Urban Restricted). • Wetlands and bald eagle habitat. • Very little infill development potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • ULID • Environmental loans/grants • Alternative wastewater technologies 	3

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Kingston Hill	<ul style="list-style-type: none"> • Sector bound by Barber Cut-Off to the south and industrial and multi-family zoning to the north. • Significant areas of existing development on functioning septic systems. • Limited infill/redevelopment potential. 	<ul style="list-style-type: none"> • Moderate sewer facility system to east 	<ul style="list-style-type: none"> • Facility Upgrades (rate payers, developer) • ULID 	3
Carpenter Lake Urban Restricted	<ul style="list-style-type: none"> • Sector bound along the northern area of Barber Cut-Off Road and bounded by the UGA boundary to the north and west. • Low density residential Urban Restricted zoning. • Some wetland constraints • Close proximity to sewer infrastructure • Low development potential. 	None	<ul style="list-style-type: none"> • Develop extensions • ULID • Alternative Sewer Technologies 	2
Tri-School Area	<ul style="list-style-type: none"> • Sector is characterized as lands located north of West Kingston Road. • Three schools comprise a majority of the developable area. • Few wetlands. • Limited development potential. 	<ul style="list-style-type: none"> • Sewer facilities to serve public schools 	<ul style="list-style-type: none"> • Facility Upgrades (rate payers, developer) 	1
Highway 104 South	<ul style="list-style-type: none"> • Sector is located south of Hwy. 104. • Industrial and multi-family zoning • Stream and moderate slopes. • Significant development potential. 	<ul style="list-style-type: none"> • Limited sewer facilities along State Hwy. 104 at the southeast corner 	<ul style="list-style-type: none"> • Developer Extension 	1
Thriftway Commercial	<ul style="list-style-type: none"> • Sector is located north of Hwy. 104. • Existing commercial (Thriftway, etc.) and some multi-family development. • Moderate slopes in the north. • Redevelopment potential. 	<ul style="list-style-type: none"> • Expansive sewer facility system. • Some upgrades may be necessary based upon the proposed uses. 	<ul style="list-style-type: none"> • Facility improvements (rate payers, developer) • Possible new funding sources (CDDs, LIFT, etc.) 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Village Green	<ul style="list-style-type: none"> • Sector is located west of Old Town and north of West Kingston Road • Existing and planned parks facilities in the area. • Primarily Commercial and Urban Village Center zoning. • Commercial development potential. • Few critical areas. 	<ul style="list-style-type: none"> • Expansive sewer facilities • Some upgrades may be necessary based upon the proposed uses 	<ul style="list-style-type: none"> • Developer extensions • Parks and other grants 	1
Ohio Avenue	<ul style="list-style-type: none"> • Sector is east of Washington Ave and north of Old Town. • Some suburban sized residential development. • Existing public facility in the north portion of the area. • Moderate slopes. • Urban Low and Urban Medium zoning. 	<ul style="list-style-type: none"> • Moderate sewer facilities 	<ul style="list-style-type: none"> • Developer extensions • ULID 	1
Old Town Kingston	<ul style="list-style-type: none"> • Sector described as predominately Puget sound to the east, portion of Ohio Avenue to the northeast, Pennsylvania Avenue to the northwest and Appletree Cove to the southwest. • Ferry terminal and accessory uses. • Mixed-use and medium density residential lands. • Infill and significant redevelopment potential. 	<ul style="list-style-type: none"> • Expansive sewer facility system. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Possible new funding sources (CDDs, LIFT, etc.) 	1
Appletree Cove	<ul style="list-style-type: none"> • Sector represents urban low and waterfront lands northwest of Appletree Cove. • Largely shoreline properties. • Low density suburban residential. • Some redevelopment potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. • Pump stations on shoreline properties likely 	<ul style="list-style-type: none"> • ULID • Individual hook-ups • Developer extensions • Facility Upgrades (rate payers, developer) 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Silverdale UGA				
Chico West	<ul style="list-style-type: none"> • Sector bounded by Newberry Hill Road to the north, Willamette-Meridian Road to the west, and generally the top of slope to the east. • Low density residential and a small area of industrial activity to the north. • Low to moderate slopes. • Few wetlands. • Several large vacant lands in single ownerships with substantial development potential. 	<ul style="list-style-type: none"> • No existing facilities • Alternative technologies possible • Possible Silverdale Water District Reclamation / Aquifer Recharge 	<ul style="list-style-type: none"> • Developer Extension • Alternative Sewer Technologies 	2
Provost	<ul style="list-style-type: none"> • Sector is located south of Whisper St. with Old Frontier Road to the east, Newberry Hill Road to the south and Dickey Road to the west. • Low density Urban Low residential • Mixture of pre-GMA development patterns on septic systems and urban lots on sewer. • Moderate slopes. • Minimal infill potential. 	<ul style="list-style-type: none"> • Some existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rate payers, developer) 	1
Old Frontier	<ul style="list-style-type: none"> • Sector contains Urban Low and some Industrial and Commercial zoning along Old Frontier Road. • Low density development pattern. • Significant development potential for residential and industrial lands and moderate for commercial. • Significant areas of existing development on functioning septic systems. 	<ul style="list-style-type: none"> • Limited existing sewer facilities 	<ul style="list-style-type: none"> • Developer Extensions • ULID • Alternative Sewer Technologies 	2

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Dickey	<ul style="list-style-type: none"> • Sector bound by Westgate Road to the north, Old Frontier Road to the east, Newberry Hill Road to the south and Dickey Road to the west. • Industrially-zoned with minimal low density residential uses. • Large parcels owned by few property owners • Existing mineral resource activities within the area. Future reclamation possible. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • Alternative Sewer Technologies • Facility Upgrades (rate payers, developer) 	2
Downtown Silverdale	<ul style="list-style-type: none"> • Sector bound by Hwy 3/303 to the north and Dyes Inlet to the south • Predominantly Regional Commercial with some mixed-use and high-density residential uses. • Number of stream corridors and associated wetlands (Clear Creek). • Largely developed. • Redevelopment potential, particularly south of Bucklin Hill Road and in the Silverdale Loop area. 	<ul style="list-style-type: none"> • Expansive sewer facility system. • Future upgrades may be necessary as infill occurs. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rate payers, developer) • Possible new funding sources (CDDs, LIFT, HBD, etc.) 	1
East Bucklin	<ul style="list-style-type: none"> • Sector bound by Dyes Inlet and Barker Creek urban separator to the south-east, Hwy 303 and Ridgetop Blvd to the northeast and Mickleberry Road to the west. • Existing low density residential with some potential for high density redevelopment. • Moderate infill potential. • Wetland systems along shoreline. 	<ul style="list-style-type: none"> • Moderate existing sewer facilities. 	<ul style="list-style-type: none"> • Individual hook-ups • ULID • Facility Upgrades (rate payers, developer) • Alternative Sewer Technologies 	2

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Ridgetop	<ul style="list-style-type: none"> • Sector bound by Hwy 303 to the south east, UGA boundary to the east and commonly referred to as the llama neck of the UGA (excludes Island Lake). • Master planned development approved in the 1980's. • Largely built-out. • Low and high density residential. • Infill development potential. • Large single-ownership properties (DNR, etc.) in the southwest portion. • Moderate slopes. 	<ul style="list-style-type: none"> • Expansive sewer facility system. 	<ul style="list-style-type: none"> • Individual hook-ups • Developer Extensions • Facility Upgrades (rate payers, developer) 	1
Island Lake	<ul style="list-style-type: none"> • Sector includes lots within the immediate vicinity east of the Island Lake County Park and Island Lake Road to the north. • Historic lots subdivided in the early 1900's • Low density residential development pattern. • Some infill/redevelopment opportunity. • Some wetlands and moderate slopes. 	<ul style="list-style-type: none"> • No existing sewer facilities. 	<ul style="list-style-type: none"> • ULID • Alternative Sewer Technologies • Environmental grants/loans 	2
Central Kitsap UGA				
Windy Point	<ul style="list-style-type: none"> • Sector bound by Tracyton Blvd. to the west, Stampede Blvd to the east and Fairgrounds complex to the north. • Low-density Urban Low residential zoning. • Some areas of existing development on functioning septic systems. • Moderate infill/redevelopment potential. 	<ul style="list-style-type: none"> • Some exiting infrastructure 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rate payers, developer) • ULID 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Tracyton	<ul style="list-style-type: none"> • Sector bound by Dyes Inlet to the west, Riddell Road to the south and McWilliams and Central Valley Roads to the north and northwest. • Low density Urban Low zoning • Mix of early-1900's platting and more recent areas of existing development on functioning septic systems. • Moderate infill/redevelopment potential. 	<ul style="list-style-type: none"> • Existing sewer facilities in the eastern half. • Minimal facilities in the historic town of Tracyton. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rate payers, developer) • ULID • Environmental grants/loans 	2
Mosher Creek	<ul style="list-style-type: none"> • This sector is located east of Hwy 303 and follows generally the Mosher Creek basin. • Primarily low density Urban Restricted zoning with minor medium density residential in the northern portion. • Significant areas of existing development on functioning septic systems. • Significant creek and associated wetland features. • Some infill/redevelopment potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • ULID Environmental grants/loans • Alternative wastewater technologies 	3
303 Mixed Use Corridor	<ul style="list-style-type: none"> • This sector is predominately commercial, mixed-use and high density residential zoning within the CK UGA along Hwy 303 corridor. • High-intensity commercial and high-density residential zoning. • Largely developed. • Some redevelopment potential. 	<ul style="list-style-type: none"> • Expansive sewer facility system. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) • Possible new funding sources (CDDs, LIFT, etc) 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
McWilliams/John Carlson	<ul style="list-style-type: none"> • Sector represents majority of Urban Low zoning the east side of Hwy 303 and north of McWilliams Road. • Low density Urban Low residential, with minor medium to high density developments to the south and Urban restricted along the shoreline. • Largely developed. • Significant areas of existing development on functioning septic systems in the eastern portion. • Minor infill potential. 	<ul style="list-style-type: none"> • Substantial existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rates payers, developer) • Environmental grants/loans 	1
Steele Creek	<ul style="list-style-type: none"> • Sector bound by Old Military Road to the west, Hwy 303 to the east and Fairgrounds Road to the south. • Low density Urban Restricted residential. • Moderate slopes • Significant creek and associated wetland systems. • Limited infill or redevelopment potential. 	<ul style="list-style-type: none"> • Moderate existing sewer facilities 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rates payers, developer) 	2
Barker-Foster	<ul style="list-style-type: none"> • Sector bound by Foster Road to the south, Barker Creek to the northwest and Waaga Way to the north and Old Military Road to the east. • Predominantly Urban Low zoning with areas of existing development on functioning septic systems. • Moderate critical area constraints along Waaga Way • Moderate infill potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rates payers, developer) 	2

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Royal Valley	<ul style="list-style-type: none"> • Sector bound by Waaga Way to the south, Paulson Road to the north and private properties to the east and west. • Zoned Senior Living Homestead (5-9 DU per acre). • Existing infrastructure including water and highway access. • Some critical areas • Low to moderate slopes 	<ul style="list-style-type: none"> • Existing sewer infrastructure (newly upgraded transmission line) 	<ul style="list-style-type: none"> • Developer Extensions 	1
Fairgrounds-Mixed	<ul style="list-style-type: none"> • Sector described as the Kitsap County Fairgrounds and surrounding residential uses that includes majority of lands located within the northwestern portion of the UGA. • Low density Urban Low residential and public facilities. • Largely developed. • Few areas of existing development on functioning septic systems. • Little to no infill/redevelopment potential. 	<ul style="list-style-type: none"> • Substantial existing sewer facilities 	<ul style="list-style-type: none"> • Facility Upgrades (rates payers, developer) • ULID 	1
Illahee Preserve	<ul style="list-style-type: none"> • Sector described as the Rolling Hills Golf course, Illahee Preserve and open space lands between McWilliams Road to the north, Riddell Road to the South and generally Sunset Avenue to the east. • Primarily zoned Parks with a small island on Urban Low. • Little to no infill or redevelopment potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • ULID • Environmental grants/loans 	3

Sector	Characteristics	Existing Facilities	Strategies	Sequence
North Illahee	<ul style="list-style-type: none"> • Sector includes lands north of Illahee Creek, slightly south of McWilliams Road, and east of the Illahee Preserve. • Low density Urban Low, Urban Restricted and Illahee Greenbelt residential. • Many existing lots based upon early-1900's platting. • Substantial areas of existing development on functioning septic systems. • Moderate to steep slopes. • Low redevelopment or infill potential. • May be community opposition to sewer, its associated density and its watershed effects. 	<ul style="list-style-type: none"> • Few existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rates payers, developer) • Alternative Sewer Technologies • Environmental grants/loans 	3
South Illahee	<ul style="list-style-type: none"> • Sector generally described as low density residential lands to the south of Illahee Creek and north of Sylvan Way and west of Forest Drive. • Primarily Illahee Greenbelt zoning. • Wetlands, moderate to steep slopes and bald eagle habitat. • Moderate infill or redevelopment potential. • May be community opposition to sewer, its associated density and its watershed effects. • Some redevelopment opportunities. 	<ul style="list-style-type: none"> • Few existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rates payers, developer) • Alternative Sewer Technologies • Environmental grants/loans 	2

Sector	Characteristics	Existing Facilities	Strategies	Sequence
East Bremerton UGA				
Tracyton Beach	<ul style="list-style-type: none"> • Sector is bounded by the Port of Washington Narrows to the southeast and surrounded by the City of Bremerton on all other sides. • Zoned Urban Low. • Some redevelopment potential with gravity opportunities to existing sewer lines • Few environmental limitations. 	<ul style="list-style-type: none"> • Substantial sewer facilities 	<ul style="list-style-type: none"> • Developer Extensions • ULID 	1
Heritage	<ul style="list-style-type: none"> • Sector is bounded by Riddell Road to the north, The Port of Washington Narrows to the west, the City of Bremerton to the south and private property to the east. • Zoned Urban Low with a pocket of Urban Restricted. • Some critical area constraints. • Some redevelopment potential. • Close proximity to the City of Bremerton. 	<ul style="list-style-type: none"> • No existing sewer facilities 	<ul style="list-style-type: none"> • Developer Extensions • ULID 	2
South Riddell	<ul style="list-style-type: none"> • Sector is bounded by Riddell Road to the North, the City of Bremerton to the east and south and private properties to the west. • Zoned Urban Low. • Some areas of existing development on functioning septic systems. • Substantial redevelopment potential. • Few critical area constraints. • Few slopes. • Close proximity to the City of Bremerton. 	<ul style="list-style-type: none"> • Some existing sewer facilities 	<ul style="list-style-type: none"> • Developer Extensions 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Petersville	<ul style="list-style-type: none"> • Sector is bounded by Riddell Road to the north, the City of Bremerton to the west and south and Forest Drive and Perry Avenue to the east. • Zoned Urban Low. • Substantial areas of existing development on functioning septic systems. • Few critical area constraints. • Few slopes. • Close proximity to the City of Bremerton. • Little redevelopment potential. 	<ul style="list-style-type: none"> • Some existing sewer facilities 	<ul style="list-style-type: none"> • ULID 	2
Trenton	<ul style="list-style-type: none"> • Sector is bounded by Sylvan Way to the north, Port Orchard Bay to the east, private property to the south and Perry Avenue to the west. • Zoned Urban Low, Urban Restricted and Illahee Greenbelt. • Substantial areas of existing development on functioning septic systems. • Moderate slopes. • Some critical area constraints. • Some redevelopment potential. 	<ul style="list-style-type: none"> • Some existing sewer facilities in the eastern portion. 	<ul style="list-style-type: none"> • Developer extensions • ULID 	2
Enetai	<ul style="list-style-type: none"> • Sector is bounded by Port Orchard Bay to the east, the city of Bremerton to the south and west and private properties to the north. • Zoned Urban Low • Substantial areas of existing development on functioning septic systems. • Moderate to severe slopes. • Substantial critical areas. • Little redevelopment potential. • Close proximity to the City of Bremerton. 	<ul style="list-style-type: none"> • Few existing sewer facilities 	<ul style="list-style-type: none"> • Developer extensions • ULID • Environmental grants/loans 	3

Sector	Characteristics	Existing Facilities	Strategies	Sequence
West Bremerton UGA				
Rocky Point	<ul style="list-style-type: none"> • Sector comprises of the Rocky Point and bounded by Phinney Bay and Port Washington Narrows. • Moderate infill potential. • Primarily Urban Low residential with Urban Medium density uses. • Substantial areas of existing development on functioning septic systems. • Moderate slopes and bald eagle habitat. 	<ul style="list-style-type: none"> • Few existing sewer facilities beyond southern portion • Pump/lift stations necessary on most shoreline lots 	<ul style="list-style-type: none"> • Developer Extension • ULID • Environmental grants/loans 	2
West Hills	<ul style="list-style-type: none"> • Sector is bound by the City of Bremerton on all sides with Werner Road to the south and Harlow drive to the north. • Zoned Urban Low and Urban Medium residential with Industrial along Werner Road. • Some critical area constraints. • Moderate slopes. • Moderate infill/redevelopment potential. 	<ul style="list-style-type: none"> • Few existing sewer facilities in southern portion. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Environmental grants/loans 	1
NYC North	<ul style="list-style-type: none"> • Sector described as lands located within Navy Yard City, north of Preble Street. • Largely developed with some redevelopment potential. • Primarily zoned Highway-Tourist Commercial and Industrial with existing low density residential uses. • Some low and medium density residential zoning. • Moderate slopes. • No other critical areas limitations. • Close proximity to the City of Bremerton. 	<ul style="list-style-type: none"> • Substantial existing sewer facilities 	<ul style="list-style-type: none"> • Facility Upgrades (rates payers, developer) • Developer Extension 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
NYC South	<ul style="list-style-type: none"> • Sector describes as lands located within Navy Yard City, south of Preble Street. • Generally zoned Urban Low with mixed-use, commercial and industrial zoned properties located in nodes or along State Hwy. 304. • Predominantly developed. • Moderate slopes. • Minimal redevelopment or infill opportunity. • Primarily low-density Urban Low zoned land. • Close proximity to the City of Bremerton. 	<ul style="list-style-type: none"> • Expansive existing sewer facilities. 	<ul style="list-style-type: none"> • Facility Upgrades (rates payers, developer) 	1
Sinclair View	<ul style="list-style-type: none"> • Sector generally along Sherman Heights Road in on the hillside above State Hwy. 3. • Zoned Urban Low and Urban Medium. • Largely developed. • Multiple property owners. • Moderate to steep slopes. • Limited redevelopment potential. • Close proximity to the City of Bremerton. 	<ul style="list-style-type: none"> • Substantial existing sewer facilities. 	<ul style="list-style-type: none"> • Facility Upgrades (rates payers, developer) • Developer Extension 	1
Sand Dollar	<ul style="list-style-type: none"> • Sector generally follows portion of Hwy 304 and remainder of UGA boundary to the southwest. • Several historic plats that are largely vacant. • Zoned Urban Low residential. • Moderate slopes. • Significant development potential. 	<ul style="list-style-type: none"> • Some existing sewer facilities along Sherman Heights Road. 	<ul style="list-style-type: none"> • Facility Upgrades (rates payers, developer) • Developer Extension 	1
Gorst UGA				

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Lockhart	<ul style="list-style-type: none"> • Sector includes large portion of Mineral Resource and Industrial lands and located on the northeast portion of the UGA. • One property owner. • Nearing end of mining operation. Reclamation likely. • Moderate slopes. 	<ul style="list-style-type: none"> • Some sewer facilities along Sherman Heights Road. • Gravity feed opportunities to these existing mains. 	<ul style="list-style-type: none"> • Developer Extension • 	1
Gorst	<ul style="list-style-type: none"> • Sector contains remaining lands of UGA situated along Sinclair Inlet. • Zoned Highway-Tourist Commercial and Urban Low residential zoning. • Modest commercial uses currently in the area • New sewer system creates substantial redevelopment and infill potential. 	<ul style="list-style-type: none"> • Expansive sewer facilities throughout. 	<ul style="list-style-type: none"> • Developer Extension • 	1
SKIA UGA				
Northeast SKIA	<ul style="list-style-type: none"> • Sector described as northeast portion of UGA boundary. Largely annexed by the City of Bremerton in 2009-2010. • Zoned Industrial and Business Center • Moderate slopes and minimal wetlands. • Existing low-intensity industrial uses. • Infill/redevelopment potential. 	<ul style="list-style-type: none"> • Sewer facilities available within the city limits through Port of Bremerton's community system. 	<ul style="list-style-type: none"> • Developer Extension • Possible multi-jurisdictional or public/private partnering. 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Lake Flora	<ul style="list-style-type: none"> • Sector represents southwest portion of UGA boundary. Largely annexed by the City of Bremerton in 2009-2010. • Zoned Business Center. • Area owned by a few large property owners. • Moderate slopes and several wetland complexes. • With infrastructure, significant development potential. 	No sewer facilities.	<ul style="list-style-type: none"> • Developer Extension • Alternative Sewer Technologies • Possible multi-jurisdictional or public/private partnering. 	2
Southeast SKIA	<ul style="list-style-type: none"> • Sector represents southeast portion of UGA boundary. Largely annexed by the City of Bremerton in 2009-2010. • Zoned Industrial and Business Center. • Moderate slopes and wetlands. • Area owned by a few large property owners. • With infrastructure, significant development potential. 	<ul style="list-style-type: none"> • No existing sewer facilities. • Substantial alternative sewer technology opportunities 	<ul style="list-style-type: none"> • Developer Extension • Alternative Sewer Technologies • Possible multi-jurisdictional or public/private partnering. 	2
Port Orchard/South Kitsap UGA				
Port Orchard Industrial Park	<ul style="list-style-type: none"> • Sector is situated northwest portion of the City of Port Orchard with Cook and Old Clifton Roads providing access. • Zoned Industrial • Industrial park largely developed and within the City of Port Orchard. • Moderate slopes • Moderate development potential. 	<ul style="list-style-type: none"> • Expansive existing sewer facilities in southern portion. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Sidney Sedgwick	<ul style="list-style-type: none"> • Sector follows the Hwy 16 corridor to the west. • Zoned Highway-Tourist Commercial. • Largely vacant land in multiple ownerships. • Some existing residential uses in the southern portion. • Moderate slopes and creeks and wetland complexes. • Moderate development potential. 	<ul style="list-style-type: none"> • Few existing sewer facilities located to the south within the Port Orchard city limits. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) 	1
McCormick East	<ul style="list-style-type: none"> • Sector is located on the southwest portion of the UGA, west of Hwy 16. Predominantly annexed by the City of Port Orchard in 2011. • Zoned Urban Low residential. • Developed on existing functional septic systems. • Multiple ownerships. • Surrounded by the City of Port Orchard and a single large landowner. • Few wetlands. 	<ul style="list-style-type: none"> • No existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) • Developer's Agreement with the adjacent land owner. 	2
Bethel Mixed-Use	<ul style="list-style-type: none"> • Sector is located south of Sedgwick Road, east of Ferate Avenue and west of Converse Avenue. • Mixed-use zoning allowing for a variety of commercial and high density residential uses. • Primarily pre-GMA suburban residential development with pockets of commercial. • Numerous underutilized and vacant lands. • Substantial development potential. • Some wetlands. 	<ul style="list-style-type: none"> • No sewer facilities within the sector. • Facilities located immediately to the north within the city limits of Port Orchard 	<ul style="list-style-type: none"> • Developer Extension • ULID • Possible new funding sources (CDDs, LIFT, etc) 	2

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Lincoln	<ul style="list-style-type: none"> • Sector is bound by Lund Avenue to the south, City of Port Orchard to the west and north and SK Park to the east. • Zoned Urban Low residential. • Several school and church sites in the area. • Limited redevelopment or infill potential. • Moderate slopes with minimal wetlands. 	<ul style="list-style-type: none"> • Expansive existing sewer facilities. 	<ul style="list-style-type: none"> • Individual hook-ups • Facility Upgrades (rate payers, developer) 	1
South Kitsap Park	<ul style="list-style-type: none"> • Sector contains South Kitsap Park located west of Jackson Avenue, Lund Avenue to the south, Mile Hill Drive to the north and Lincoln Urban Low sector to the west. • Park zoning. • County-owned. • Moderate and steep slopes. • No residential development potential. 	<ul style="list-style-type: none"> • Sewer facilities adjacent to park property. 	<ul style="list-style-type: none"> • Parks funding • State and federal grants. 	1
Parkwood	<ul style="list-style-type: none"> • Sector is located just south of Mile Hill Drive, Jackson Avenue to the west, UGA boundary to the east and Westminster Drive to the south. • Public facilities, Urban Low and Urban Medium residential zoning. • Primarily built-out. • Wetlands and moderate slopes. • Little to no redevelopment or infill potential. 	<ul style="list-style-type: none"> • Expansive existing sewer facilities. 	<ul style="list-style-type: none"> • Facility Upgrades (rate payers, developer) 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Villa	<ul style="list-style-type: none"> • Sector is bounded by Lund Avenue on the north, Jackson Avenue to the east, Sedgwick Road to the South and the City of Port Orchard to the west. • Zoned Urban Low • Predominantly developed on existing functional septic systems. • Moderate critical area constraints in the southern portion. • Some redevelopment potential. 	<ul style="list-style-type: none"> • Substantial sewer infrastructure along Jackson Avenue and Bethel Road to the east and west of the sector. 	<ul style="list-style-type: none"> • Developer extensions • Alternative Sewer Technologies • ULID 	2
Salmonberry	<ul style="list-style-type: none"> • Sector is described as Sedgwick Road to the south, Lund Avenue to the north, UGA boundary to the east and Bethel Road to the west. • Zoned Urban Low residential. • Pre-GMA development patterns on existing septic systems. • Pockets of vacant and underutilized lands. • Some redevelopment potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • Alternative Sewer Technologies • ULID 	2
Phillips Road	<ul style="list-style-type: none"> • Sector is situated south of Sedgwick Road, west of Long Lake and east of Brash and Van Skiver Roads. • Zoned Urban Low residential with pockets of Urban Restricted. • Largely semi-rural development pattern. • Multiple approved plats and vested projects. • Significant development potential. 	<ul style="list-style-type: none"> • No existing sewer facilities. • Several vested projects with sewer contracts in place. 	<ul style="list-style-type: none"> • Developer Extension • ULID 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Converse	<ul style="list-style-type: none"> • Sector is located south of Sedgwick Road, north Cedar Avenue, west of Brasch Road and east of private property. • Low density Urban Low residential. • Predominantly developed on existing functional septic systems. • School and Kitsap road shed located in the area. • Limited redevelopment and infill potential. • Some critical areas. 	<ul style="list-style-type: none"> • No existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • Alternative Sewer Technologies • ULID 	3
Brasch	<ul style="list-style-type: none"> • Sector is located south of Sedgwick Road, north Cedar Avenue, west of Phillips Road and east of Converse Road. • Zoned Urban Low residential. • Mix of suburban and semi-rural development patterns. • Moderate slopes and wetlands. • Moderate redevelopment and infill potential. 	<ul style="list-style-type: none"> • Full sewer facilities in the northeastern portion of the sector. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Sedgwick main – latecomer funded (money will be advanced, but recovered) • Alternative Sewer Technologies 	2
Mile Hill Drive Commercial	<ul style="list-style-type: none"> • Sector is located off of Mile Hill Drive. • High intensity commercial zoning. • Mix of commercial and suburban/semi-rural residential development • A number of underutilized and vacant lands. • Significant redevelopment potential. 	<ul style="list-style-type: none"> • Minimal existing sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) 	1
Howe Farm	<ul style="list-style-type: none"> • Sector is located south of Mile Hill Drive. • Zoned Parks • Owned by Kitsap County • No residential development potential • Currently no facilities on site and no need for sewer 	<ul style="list-style-type: none"> • No existing sewer facilities 	<ul style="list-style-type: none"> • Parks funding • Alternative Sewer Technologies • State and federal grants 	3

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Baby Doll	<ul style="list-style-type: none"> • Sector is located north of Mile Hill Drive and south of LaSalle Street along Horstman Road. • Low density Urban Low and Urban Restricted residential zoning. • Substantial areas of development on existing functioning septic systems. • Significant development potential. • Some critical areas in northern portion. 	<ul style="list-style-type: none"> • No existing sewer facilities 	<ul style="list-style-type: none"> • Developer Extension • ULID • Alternative Sewer Technologies 	2
Beach Drive	<ul style="list-style-type: none"> • Sector is situated south of the Beach Drive Residential sector, with Ahlstrom Road to the southwest. • Low density Urban Low and Urban Restricted residential zoning. • Substantial development on existing functioning septic systems. • Moderate to severe slopes. • Limited infill potential. 	<ul style="list-style-type: none"> • Sewer main with limited capacity along Beach Drive. 	<ul style="list-style-type: none"> • Developer Extension • ULID • Facility Upgrades (rates payers, developer) 	2
Horstman	<ul style="list-style-type: none"> • Sector is situated south of the Ahlstrom Road and north and east of the City of Port Orchard. • Low density Urban Low residential. • Pre-GMA suburban/semi-rural development pattern. • Moderate redevelopment and infill potential. • Moderate to severe slopes. 	<ul style="list-style-type: none"> • Sewer main with limited capacity along Beach Drive. • Moderate sewer facilities in the southern portion. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) 	1

Sector	Characteristics	Existing Facilities	Strategies	Sequence
Retsil	<ul style="list-style-type: none"> • Sector is adjacent to City of Port Orchard to the west and south, with Port Orchard Bay to the north. • Zoned Urban Low • Area includes the joint West Sound/Port Orchard sewer treatment facility. • Mix of early 1900's and pre-GMA subdivision. • Moderate infill and redevelopment potential. • Moderate slopes and streams. 	<ul style="list-style-type: none"> • Substantial sewer facilities. 	<ul style="list-style-type: none"> • Developer Extension • Facility Upgrades (rates payers, developer) 	1

ACRONYM LIST

- CDD = Community Development District
- CK = Central Kitsap
- GMA = Growth Management Act
- HBD = Hospital Benefit District
- LIFT = Local Infrastructure Financing Tool
- SK = South Kitsap
- UGA = Urban Growth Area
- ULID = Local Improvement District

From: John Kiess [mailto:john.kiess@kitsappublichealth.org]
Sent: Tuesday, October 27, 2015 11:39 AM
To: Keith Grellner; Katrina Knutson
Subject: RE: Kitsap County UGAs and Sewer

Hello Katrina – After reviewing the current UGAs and current data, the Health District has concerns about the following areas due to small lot size, dense development, old septic infrastructure, a higher incident of septic repairs, and proximity to shorelines / stream corridors.

1. The Rocky Point and Marine Drive area.
2. Tracyton
3. The area between Auto Center Way and Kitsap Lake.

Please let me know if you have additional questions, thanks.

John Kiess, RS | Assistant Environmental Health Director
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From: Katrina Knutson [mailto:KKnutson@co.kitsap.wa.us]
Sent: Monday, October 26, 2015 1:04 PM
To: Keith Grellner <keith.grellner@kitsappublichealth.org>
Subject: Kitsap County UGAs and Sewer

Hi Keith,

I hope you are doing well. Could you please tell me if there have been any NEW wastewater public health issues identified by the Health District inside the Kitsap County UGAs since the end of 2012?

Thank you!

Katrina N. Knutson, AICP
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