

Utilities Committee Meeting Agenda May 11, 2021, 5:00 p.m.

Pursuant to the Governor's "Stay Home - Stay Safe" Order, the City is prohibited from conducting meetings unless the meeting is NOT conducted in-person and instead provides options for the public to attend through telephone access, internet or other means of remote access, and also provides the ability for persons attending the meeting (not in-person) to hear each other at the same time. Therefore;

Remote access only

Link:

<https://us02web.zoom.us/j/84129451171?pwd=Y3NBQ1BsUDhsZ293UGRsbnk5QIRtdz09>

Meeting ID: 841 2945 1171

- McCormick LS#1 – Update
- 2020 NPDES Phase II Annual Report
 - <https://www.cityofportorcharad.us/documents/2020-npdes-phase-ii-annual-report/>
- Sidney Avenue Sewer & Roadway Repair – Update53200
- Foster Pilot Project – Update
 - Well #11, #12 & #13 Impacts
- McCormick Water Campus (580 Res, Well #12 & Main) – Update
- Splash Pad – Update
- Marina PS Funding – Update
- DOH-DWSRF Loan – Update:
 - Well #11 Pre-Construction Award (\$500k)
 - Well #13 Project Close-out & Scope Reduction
- 2020 (Consumer Confidence) Water Quality Report
- Water Use Efficiency Program
- 390/580 Zones Consolidation Study
- Utility Department Program – Update:
 - Storm Drainage Comprehensive Plan
 - Water CIP's & CFC Adjustments
 - Water CFC Credits
 - Water & Sewer Rates
 - WSP Update Adoption
 - 2022 GSP Update
 - 2023 Comp Plan Update
- Next Meeting: June 8, 2021

Future Agenda Items:

- Cross Connection Control & FOG Programs - Discussion
- Option to Levy Excise Taxes on W/S - Discussion
- SKWRF Nutrient Cap - Update
- 2019-2024 NPDES Permit Draft Comments - Update

- Bay Street - Street Lighting & Marquee - Update
- Water System Fluoridation - Update
- Sanitary Side Sewer Policy - Discussion



City of Port Orchard



WATER QUALITY REPORT FOR 2020

PORT ORCHARD WATER DEPARTMENT, ID#68900

SECURING A BETTER WATER FUTURE

City Council meets at 6:30 PM on the 2nd and 4th Tuesdays of each month at the Robert Geiger Council Chambers, City Hall, 216 Prospect Street. The public is always encouraged to attend. For questions about our water contact the Utility Manager, Jacki Brown, at (360) 876-4991

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about their water. This report is in accordance with the EPA Code of Federal Regulations, National Drinking Water Regulations Parts 141 and 142.

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In Washington State, lead in drinking water comes primarily from materials and components used in household plumbing. The more time water has been sitting in pipes, the more dissolved metals, such as lead, it may contain. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. To help reduce potential exposure to lead, **flush water through the tap until the water is noticeably colder before using it for drinking or cooking.** You can use the flushed water for water plants, washing dishes, or general cleaning. **Only use water from the cold water tap for drinking, cooking, and especially for making baby formula.** Hot water is likely to contain higher levels of lead. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at <http://www.epa.gov/safewater/lead>.

To ensure that tap water is safe to drink, the Department of Health and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration and the Washington State Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

A message from the EPA regarding water contaminants:

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. Organic chemical contaminants, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production. They can come from gas stations, urban storm water runoff, and septic systems. Radioactive contaminants can be naturally occurring or the result of oil and gas production and mining activities.



We are pleased to report that your water supply meets and exceeds all federal and state drinking water standards.

Water Quality Data

The water quality information presented in this table is from the most recent round of testing done according to the regulations. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. The EPA, through the Washington State Department of Health, Office of Drinking Water, requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, is more than one year old. The Office of Drinking Water reduced the monitoring requirements for Inorganic, Synthetic Organic, and Volatile Organic Chemicals because the sources are not at risk of contamination. The last sample collected for these contaminants was found to meet all applicable standards.

Contaminants	MCL	MCL G	Highest Level	Range of Detection	Sample Date	Violation	Typical Source of Contamination
Arsenic (ppb)	10	0	3.3		4/18	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Fluoride (ppm)	4	4	0.91		10/20	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	0.45		4/16	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Gross Alpha (ppb)	15	N/A	3.8		5/20	No	Erosion of natural deposits
Radium (ppb)	5	N/A	0.8	.01–0.8	4/17	No	Erosion of natural deposits
Haloacetic Acids (ppb)	60	N/A	2.6	ND–2.6	12/19	No	By-product of drinking water disinfection
Total trihalomethanes (ppb)	80	N/A	10	7.1–10	12/19	No	By-product of drinking water disinfection
Contaminants with Action Levels rather than MCLs	AL	MCL G	90th % Level	Range of Detection	Sample Date	Exceeds AL	Typical Source
Copper (ppm)	1.3	1.3	0.02	ND–0.05	9/18	No	Corrosion of household plumbing; Erosion of natural deposits
Lead (ppb)	15	0	0.001	ND–0.004	9/18	No	Corrosion of household plumbing; Erosion of natural deposits
Unregulated Contaminants							
Germanium (ppb)			0.317	0.317	6/19	N/A	EPA has not established standards for unregulated contaminants. The purpose of this monitoring is to help EPA determine their occurrence in drinking water and potential need for future reg-
Definitions							

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Lead and Copper 90th Percentile—Out of every 10 homes sampled, 9 were at or below this level.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Parts Per Million (PPM) - One part per million or one milligram per liter (mg/L) corresponds to one penny in \$10,000.

Treatment Trigger (TT) - A required process intended to reduce the level of a contaminant in drinking water.

ND— Not detected in the sample

Where your water comes from

The system is supplied by groundwater from four wells located throughout the City that vary in depth from 240 feet to 806 feet below ground level including two flowing artesian wells. In addition, the City periodically purchases water from the City of Bremerton, which is supplied by numerous groundwater wells and their reservoir behind Casad Dam on the Union River. The City also has an emergency intertie with West Sound Utility District's water system.

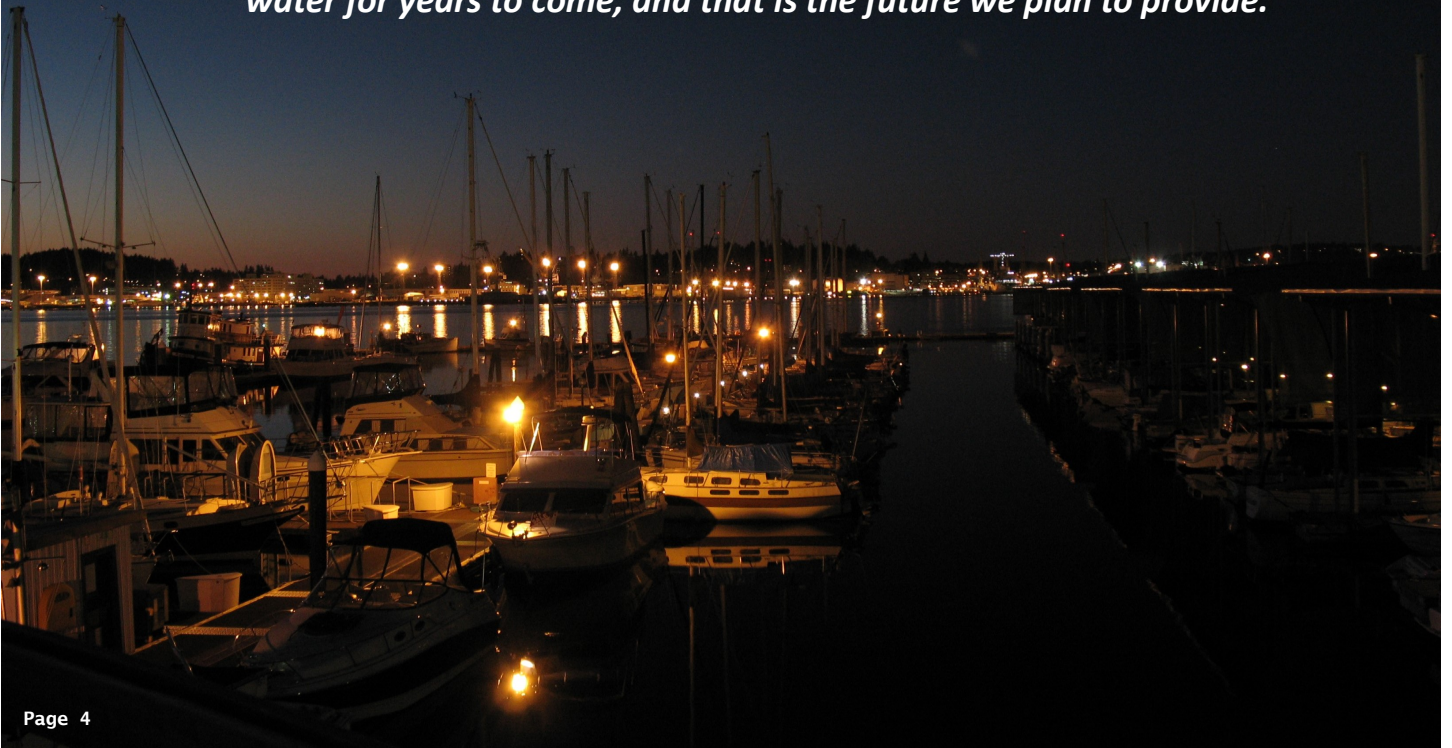
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In general, the installation of plumbing in compliance with the plumbing code will provide adequate protection for your plumbing system from contamination.

However, the water purveyor may require (as a condition of service) the installation of a backflow prevention assembly on the water service to provide additional protection for the public water system. A backflow prevention assembly will normally be required where a single-family residence has special plumbing that increases the hazard above the normal level found in residential homes, or where a hazard survey cannot be completed.

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Est. 1890

City of Port Orchard



WATER QUALITY REPORT FOR 2020

MCCORMICK WOODS WATER SYSTEM, ID#40529

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CITY OF PORT ORCHARD WATER USE EFFICIENCY PROGRAM

1. System Information

Name: City of Port Orchard DOH ID #68900
McCormick Woods Water System DOH ID #40529

Address: 216 Prospect
Port Orchard, Washington 98366

Phone: (360) 876-4991

Contact Person: Jacki Brown, Utility Manager

2. Geographic Location

The City of Port Orchard maintains two separate public water systems, both of which are Group A public water systems. Both systems are located on the Kitsap Peninsula of Washington State along the southern shore of Sinclair Inlet of the Puget Sound. This Water Use Efficiency Program covers both the Port Orchard and McCormick Woods water systems.

3. Water Use Efficiency Rule

The City of Port Orchard developed a Water Use Efficiency Goal for compliance with the Water Use Efficiency Rule of the Municipal Water Law. The City has adopted the following goals after the requisite public process and has developed a plan for monitoring progress toward the established goal and reevaluation of water use efficiency measures on an annual basis.

GOAL #1: Reduce Residential Usage by 0.5% per year through 2030

Over the next ten-year period, the City of Port Orchard plans to reduce water consumption by 0.5% per year. The following measures will be evaluated and/or implemented to assist in attaining this goal:

- Include water conservation information in the City's annual Consumer Confidence Report (annual water system report to consumers).
- Evaluate the inclusion of inserts as part of the monthly water bills that present information regarding the importance of water conservation and actions individuals can implement to reduce their water use.
- Investigate a Water Conservation School Outreach Program that may include school presentations, preparation of curriculum material, water conservation education handout material, and tours of water system facilities.
- Provide water conservation materials at public outreach events.

GOAL #2: Continue and Expand Educational Outreach with Customers

The City is a member of the County-wide conservation board and the Water Purveyors Association of Kitsap County (WaterPAK), the City is active in planning, setting up, and manning the WaterPAK booth at the Kitsap County Fair. Conservation is a principal message at the booth. WaterPAK's projects include distributing County-wide indoor conservation kits, summer lawn water calendars, and high efficiency toilet (HET) rebates; establishing coordination between water purveyors, fire districts, Kitsap County, and state agencies; coordinating the development of a groundwater model with USGS; and developing the County-wide Coordinated Water System Plan (CWSP).

The City also maintains a page on their website (<https://www.cityofportorchard.us/>) which describes the benefits of conservation and links to other resources regarding conservation-at-home measures to help educate its customers about water use efficiency.

4. Water Use Efficiency Tracking

Port Orchard Water Department					
year	production	authorized uses	leakage		
			gallons	percentage	
2016	277858531	267667240	10191291	3.67	
2017	267138796	257609875	9528921	3.57	
2018	305494416	269650890	35843526	11.73	*
2019	312726730	271860151	40866579	13.07	*
2020	291531336	266226432	25304904	8.68	
TOTALS	1454749809	1333014588	121735221	8.14	average
	metered sales	meters billed	per capita use		%↓
			annually	daily	
2016	267631670				
2017	237476840	12450	19074.44	52.26	
2018	249387340	13440	18555.61	50.84	2.720075607
2019	259506771	14276	18177.83	49.80	2.035884811
2020	241954498	14314	16903.35	46.31	7.011223671
McCormick Woods Water System					
year	production	authorized uses	leakage		
			gallons	percentage	
2016	83677846	83609600	68246	0.08	
2017	84373263	81500000	2873263	3.41	
2018	105212017	101582290	3629727	3.45	
2019	107588945	100757850	6831095	6.35	
2020	98619902	97346850	1273052	1.29	
TOTALS	479471973	464796590	14675383	2.92	average
	metered sales	meters billed	per capita use		%↓
			annually	daily	
2016	83605600				
2017	72667000	4306	16875.75	46.23	
2018	85574290	4851	17640.55	48.33	-4.53189519
2019	90850000	5646	16091.04	44.09	8.783789071
2020	90415000	6013	15036.59	41.20	6.5530298
* Anomolies based on under-reporting of unmetered uses					



Final Project Report

Feasibility Study: Port Orchard & McCormick
Woods Water System Consolidation

City of Port Orchard

Port Orchard, Washington
March 31, 2021



Certificate of Engineer

The material and data contained in this report were prepared under the direction and supervision of the undersigned, whose seal as a professional engineer, licensed to practice in the State of Washington, is affixed below.



03/31/21

Sarah Lingley, PE
HDR Engineering, Inc.

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Appendix A – Cost Estimates

1 Project Information

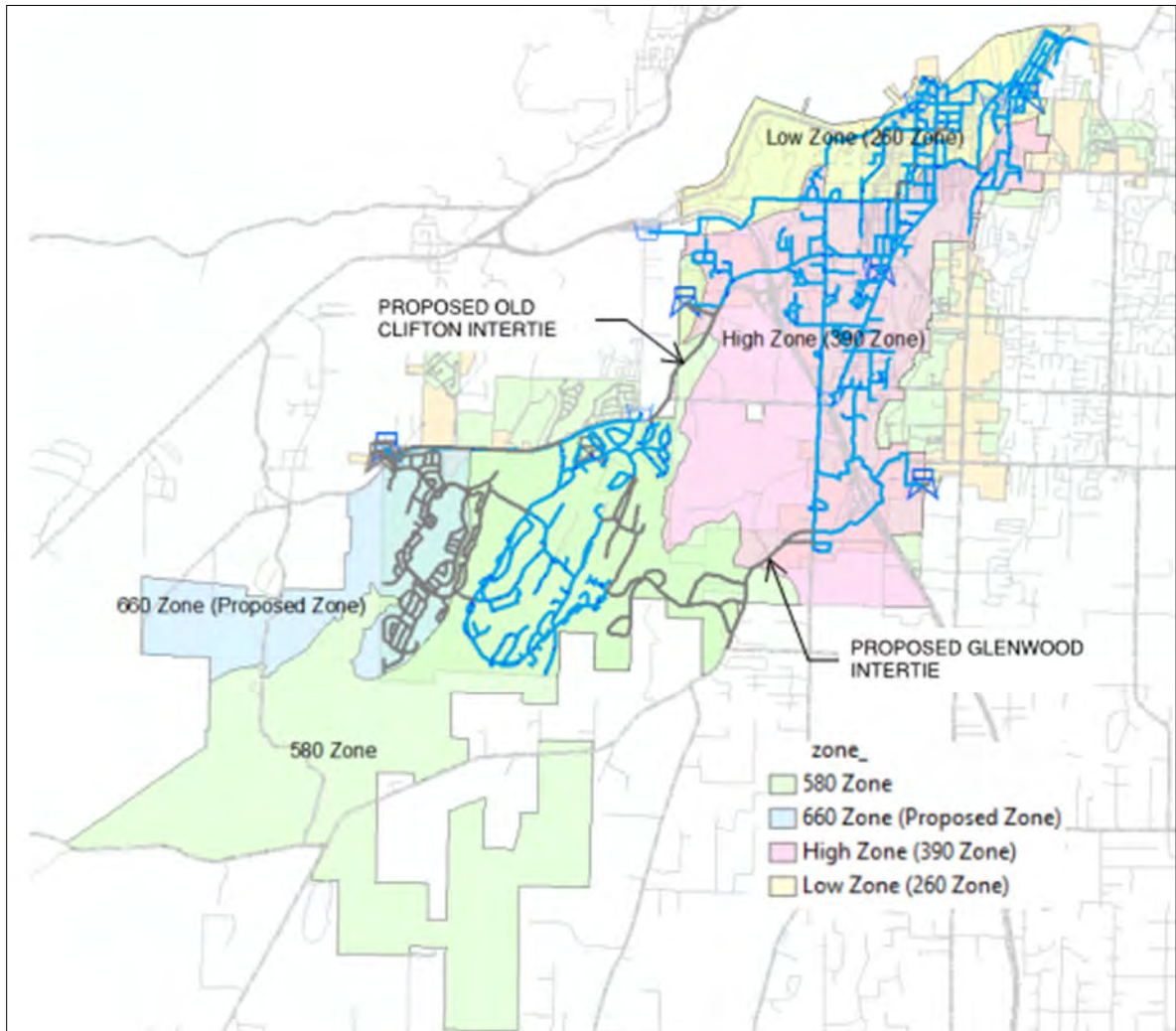
1.1 Background and Purpose

The City of Port Orchard (City) has obtained grant funding from the Washington State Department of Health (DOH) to study the feasibility of consolidating the McCormick Woods water system (McCormick Woods) with the City's water system.

The City purchased the McCormick Woods water system in 1998 and has been operating it as a satellite water system. The McCormick Woods water system comprises the 580 Pressure Zone (580 Zone). Additional development in the McCormick Woods area will also create a 660 Pressure Zone (660 Zone) that is fed from the 580 Zone (see Figure 1-1, which is from the City of Port Orchard 2020 Water System Plan (WSP)).

The purpose of this feasibility study is to evaluate consolidation of the McCormick Woods' water system with the City's water system by connecting the McCormick Woods 580 Pressure Zone to the City's 390 Pressure Zone. Consolidation will improve source redundancy and resiliency for both systems. The City is considering consolidation of these two systems through a pump station allowing flows to be boosted from the 390 Zone to the 580 Zone and with pressure reducing valves (PRVs) allowing flow to enter the 390 Zone from the 580 Zone. The connection will give both water systems an increased ability to withstand and recover from natural and man-made disturbances.

Figure 1-1. City of Port Orchard Water System Overview



1.2 Approach

This study includes the following:

- Assessment of existing infrastructure
- Identification of system connection alternatives
- Analysis of alternatives for functionality
- Estimation of costs for each alternative
- Identification of funding opportunities for the improvements

1.3 Design Standards

This section describes the relevant design standards as listed in the City of Port Orchard Water System Plan (2020).

1.3.1 Pump Station Design

The 580 Pressure Zone is an open system (includes gravity storage). The DOH Water System Design Manual (WSDM) calls for sources to an open system to meet the following criteria:

1. Meet average day demand with the largest source out of service
2. Meet maximum day demand with all sources online
3. Meet maximum day demand while replenishing depleted fire suppression storage within 72 hours with all sources online.

Per the City's WSP, items 1 and 2 are considered with an 18 hour per day capacity (more conservative than the WSDM's recommended 20 hour per day capacity). Item 3 can be considered with 24 hour per day capacity.

Additionally, the City's WSP requires the inlet side of the pump station to have a minimum pressure of 20 psi during peak hour demand (PHD) conditions or maximum day demand (MDD) conditions with fire flow. The distribution system must also maintain a minimum pressure of 30 psi during PHD with operational and equalizing storage depleted, and a minimum pressure of 20 psi during MDD with fire flow and operational, equalizing, and fire suppression storage depleted. Maximum pressures should stay below 100 psi, and when pressures exceed 80 psi individual customer PRVs should be included at their connection point.

The demands for the proposed pump station were considered using the 2039 demands for the 580 and 660 Zones from the demand forecast in the WSP. (Note that the City's hydraulic model uses 2037 demands; however, for sizing of the pump station, 2039 demands were used). The total average day demand (ADD) for the 580/660 Zones is 736 gpm while the total MDD is 2,798 gpm.

The other sources into the McCormick Woods area includes the following:

- Well 1 (580 Zone)- Assumed to be offline as its water rights will transfer to Well 11 (580 Zone).
- Well 3 (580 Zone)- Assumed to be offline as its water rights will transfer to Well 11 (580 Zone).
- City of Bremerton Intertie (580 Zone) - Assumed to be an emergency supply as part of this study and not a permanent source.
- Well 11 (580 Zone) - Future well with an assumed capacity of 750 gpm.
- Well 12 (580 Zone) - Future well with an assumed capacity of 1,000 gpm.

Section 3.5.7 of the WSP discusses the interconnection between the 580 Zone and the City's system and states, "a booster station would need to be constructed with an initial pump capacity of 650+/- GPM (2 – 650 GPM pumps, with a future capacity of 1,200+/- GPM)".

Assuming a 1,950 gpm capacity pump station (three 650 gpm pumps), Table 1-1 provides a source capacity analysis of the 580 and 660 Zones for the year 2039.

Table 1-1. 580 / 660 Zone source capacity analysis for 2039 demands

Demand / Source	Flow (gpm)
580 / 660 Zone 2039 Projected Demand	
Average Day Demand	736
Maximum Day Demand	2,798
Flow to replenish fire suppression storage in 72 hr	42 ¹
Sources	
Reduced Daily Operation (18 hours per day)	
City of Bremerton Intertie	0
Well 1	0
Well 3	0
Well 11	563
Well 12	750
390 to 580 BPS Pump 1	488
390 to 580 BPS Pump 2	488
390 to 580 BPS Pump 3	488
Total Capacity	2,775
Total Capacity with Largest Offline	2,025
24 Hour Daily Operation	
City of Bremerton Intertie	0
Well 1	0
Well 3	0
Well 11	750
Well 12	1,000
390 to 580 BPS Pump 1	650
390 to 580 BPS Pump 2	650
390 to 580 BPS Pump 3	650
Total Capacity	3,700
Total Capacity with Largest Offline	2,700
Source Surplus/(Deficiency) Checks	
Average Day Demand with Largest Pump Offline	1,289
Maximum Day Demand	(23)
Fire Storage Replenishment during MDD	861
Source Surplus/(Deficiency) Checks if assuming 20 hour capacity instead of 18 hour capacity	
Average Day Demand with Largest Pump Offline	722
Maximum Day Demand	286
Fire Storage Replenishment during MDD	861

¹This is based off a 1,875 gpm x 2 hour fire flow.

Table 1-1 shows that when assuming an 18 hour per day pumping capacity, there is a slight deficiency of 23 gpm. If assuming 20 hour per day capacity (WSDM recommendation), the deficiency is resolved.

For this study, the full buildout pump station capacity was assumed to be 1,950 GPM (which includes three 650 GPM pumps), similar to the WSP. This allows sources into the 580 / 660 Zones to provide the 2,039 MDD with the largest source out of service and without the need for supply from the Bremerton intertie.

The McCormick Woods 580 Zone is currently served by a single 0.45 MG tank. A new 0.97 MG tank is proposed to be constructed in the 580 Zone to replace the existing tank. Once the new tank is online, the City of Bremerton will take ownership of the existing 580 Zone tank and it will be separated from the McCormick Woods 580 Zone system.

A McCormick Woods 660 Zone tank is proposed to be constructed and connected to the 660 Zone via a proposed 580 to 660 Zone pump station.

1.3.2 Pipeline Velocity

Per the WSP, maximum velocity in distribution pipelines shall not exceed 8 feet per second (fps) under PHD conditions and 10 fps during fire flow conditions.

2 Alternatives

Assessment of the existing infrastructure revealed two alternatives for connecting the two systems. Both alternatives require installation of a pump station and new distribution system piping.

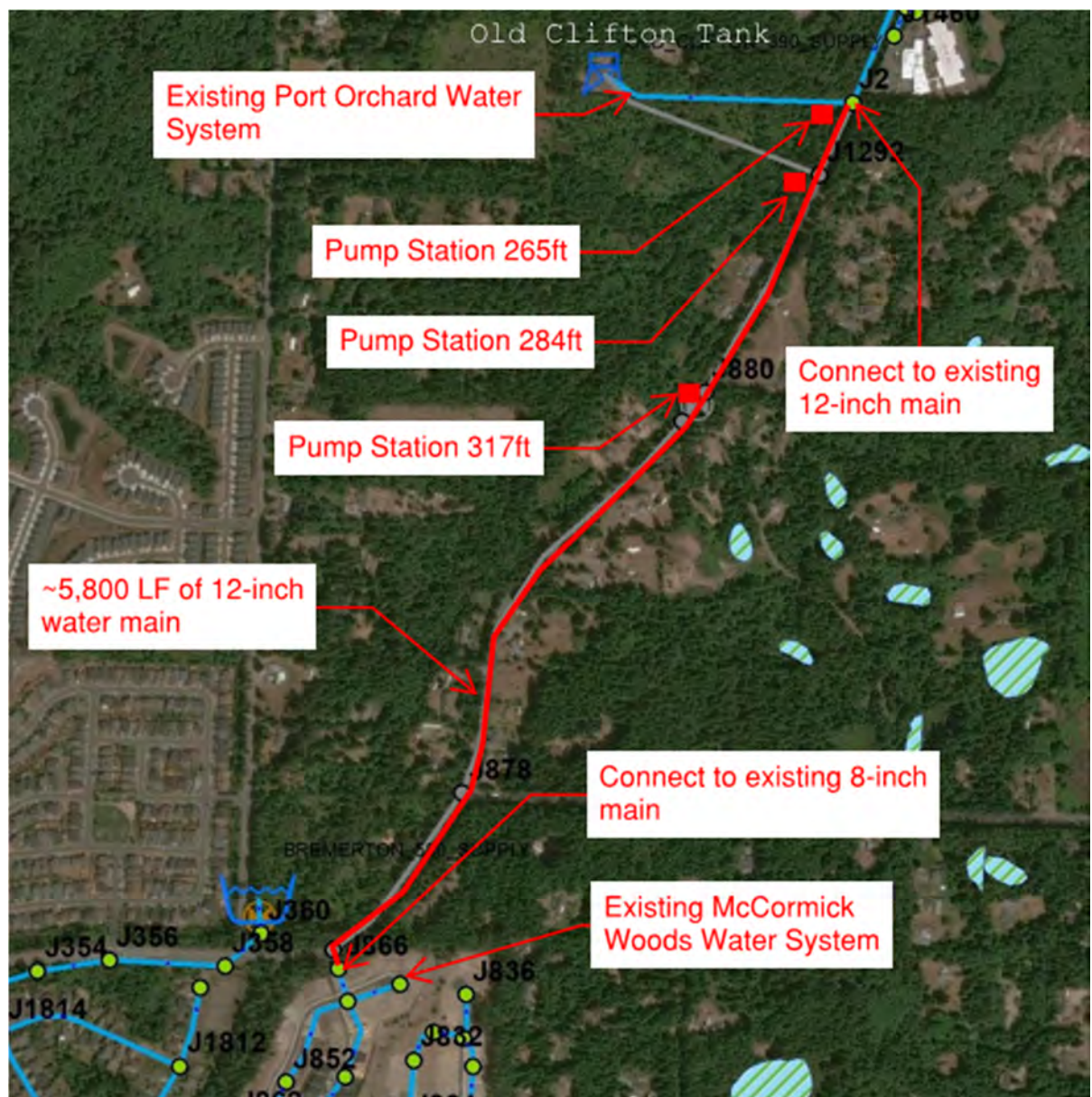
Two alternatives have been selected to be analyzed as part of this study:

- Alternative 1 - The first alternative is the northern route along SW Old Clifton Road.
- Alternative 2 - The second alternative is the southern route in the Glenwood Road SW area.

2.1 Alternative 1 - Old Clifton

The Old Clifton alternative connects the two systems by installing a new 12-inch diameter distribution main along SW Old Clifton Road from Old Clifton Tank road to an existing water main in the Eldon Trails community. This alternative requires installation of approximately 5,800 LF of piping and a 1,950 GPM pump station. To evaluate the impacts of elevation on the suction pressure, three pump station locations were evaluated corresponding to the elevation contours of 317 feet, 284 feet and 265 feet (see Figure 2-1).

Figure 2-1. Alternative 1 - Old Clifton



2.2 Alternative 2 - Glenwood

The Glenwood alternative provides a connection between the two systems by installing a new 12-inch diameter distribution main in an area that is currently undeveloped and outside of the City's right-of-way, between water mains currently being installed by the Stetson Heights developer and a future water main anticipated to be installed to the west of Stetson Heights by a future developer (northeast of the intersection of SW Dunraven Ln and McCormick Woods Dr SW). This alternative requires installation of approximately 11,700 LF of piping, approximately 10,000 LF of which is anticipated to be installed by a developer, and a 1,950 GPM pump station. To evaluate the impacts of elevation on the suction pressure, two pump station locations were evaluated corresponding to the elevation contours of 280 feet and 210 feet (see Figure 2-2).

The Stetson Heights developer is providing a 12-inch diameter distribution main from the existing end of the Port Orchard water system at South Sidney along SW Sedgewick Road/Glenwood Road SW to the entrance to the Stetson Heights development. The developer also proposes to install 12-inch diameter water mains within the Stetson Heights development, which extends the Port Orchard water system approximately 4,800 feet west of South Sidney.

This route also relies on installation of a new water main from the existing McCormick Woods system at the intersection of SW Dunraven Ln and McCormick Woods Dr SW approximately 2,000 LF to the northeast.

As discussed later in Section 4.3.3, to avoid high pressures in the Stetson Heights development, a secondary pump station scenario was evaluated (Pump Station 315 ft).

3 Modeling Scenarios

For completing the hydraulic analysis for this study, the City's InfoWater hydraulic model of the distribution system, developed by BHC Consultants, LLC for the WSP, was used which included demands for years 2017, 2027, and 2037. The 2027 facilities, tank set, reservoir set, valve set, pipe set and control set were used, as these items had not been developed for the 2037 scenario. Two minor modifications were made to the model, including opening a pipe near Lowes and closing a pipe that created an uncontrolled connection between the 390 Zone and 260 Sone. No additional validation or checks of the model were completed except for adding infrastructure and demands specific to this study.

The two alternative routes were added to the hydraulic model to determine required pump and distribution main sizing and to evaluate the impacts of the interconnection on the supply zone (Port Orchard 390 Zone) and the discharge zone (McCormick Woods 580 Zone).

For the Glenwood alternative two pump station scenario, demands were added to the model for the area of the Stetson Heights development, including 412 ERUs, 195 GPD/ERU, MDD/ADD ratio of 3.8 and PHD/MDD ratio of 1.65. This information was provided by BHC Consultants, LLC.

For each of the alternatives, the scenarios in Table 3-1 were used for the evaluation.

Table 3-1. Hydraulic modeling scenarios

Scenario	Assumptions				Supply Zone		Discharge Zone	
	Pump Station Capacity	Demand Year	Discharge Zone Well Status	Supply Zone Well Status	Demand Condition	Pressure Requirement	Demand Condition	Pressure Requirement
Baseline								
Baseline	N/A	2017	ON: Bremerton intertie Off: Well 11	ON: Wells 6, 7, 8, 9 Off: Well 13 (future)	PHD	30 PSI	PHD	30 PSI
					MDD+FF	20 PSI	MDD	20 PSI
	N/A	2037	ON: Wells 11, 12 OFF: Bremerton intertie	ON: Wells 6, 7, 8, 9, Off: Well 13 (future)	MDD+FF	20 PSI	MDD	20 PSI
					PHD	30 PSI	PHD	30 PSI
Alternative 1 - Old Clifton								
A	1,950 GPM	2037	ON: Wells 11, 12 OFF: Bremerton intertie	ON: Wells 6, 7, 8, 9, Off: Well 13 (future)	PHD	30 PSI	PHD	30 PSI
B					MDD + FF	20 PSI	MDD	30 PSI
C					MDD	30 PSI	MDD + FF	20 PSI
Alternative 2- Glenwood								
A	1,950 GPM	2037	ON: Wells 11, 12 OFF: Bremerton intertie	ON: Wells 6, 7, 8, 9, Off: Well 13 (future)	PHD	30 PSI	PDH	30 PSI
B					MDD + FF	20 PSI	MDD	30 PSI
C					MDD	30 PSI	MDD + FF	20 PSI

Assumptions:

Well 11 Capacity is 750 GPM

Well 12 capacity is 1,000 GPM

New Zone 580 Tank is online and supplying fire flow storage.

4 Analysis Results

This section summarizes the results of the hydraulic analysis, including baseline results and the results for the Old Clifton alternative and the Glenwood alternative.

4.1 Baseline Results

Baseline condition refers to the existing condition of the distribution system without the addition of a new pump station and connection between the 390 and 580 Zones, for 2017 PHD, 2017 MDD, 2037 MDD, and 2037 PHD. It also describes the baseline low-pressure and high-pressure areas in the 390 and 580 Zones that exist without the addition of new pump stations.

Baseline scenarios are described in Table 3-1.

4.1.1 Baseline Results in Old Clifton Area

The Old Clifton alternative includes a pump station located along SW Old Clifton Road between the Old Clifton Tank (390 Zone) and McCormick Woods (580 Zone). Table 4-1 establishes the baseline pressure in the 390 Zone distribution system along SW Old Clifton Rd adjacent to the Old Clifton Tank (west of intersection with Highway 16). Figure 4-1 displays this area. These baseline pressures will be referred to in the results analysis section when evaluating the impacts of the new pump station on the existing distribution system pressures.

Figure 4-1. Baseline areas

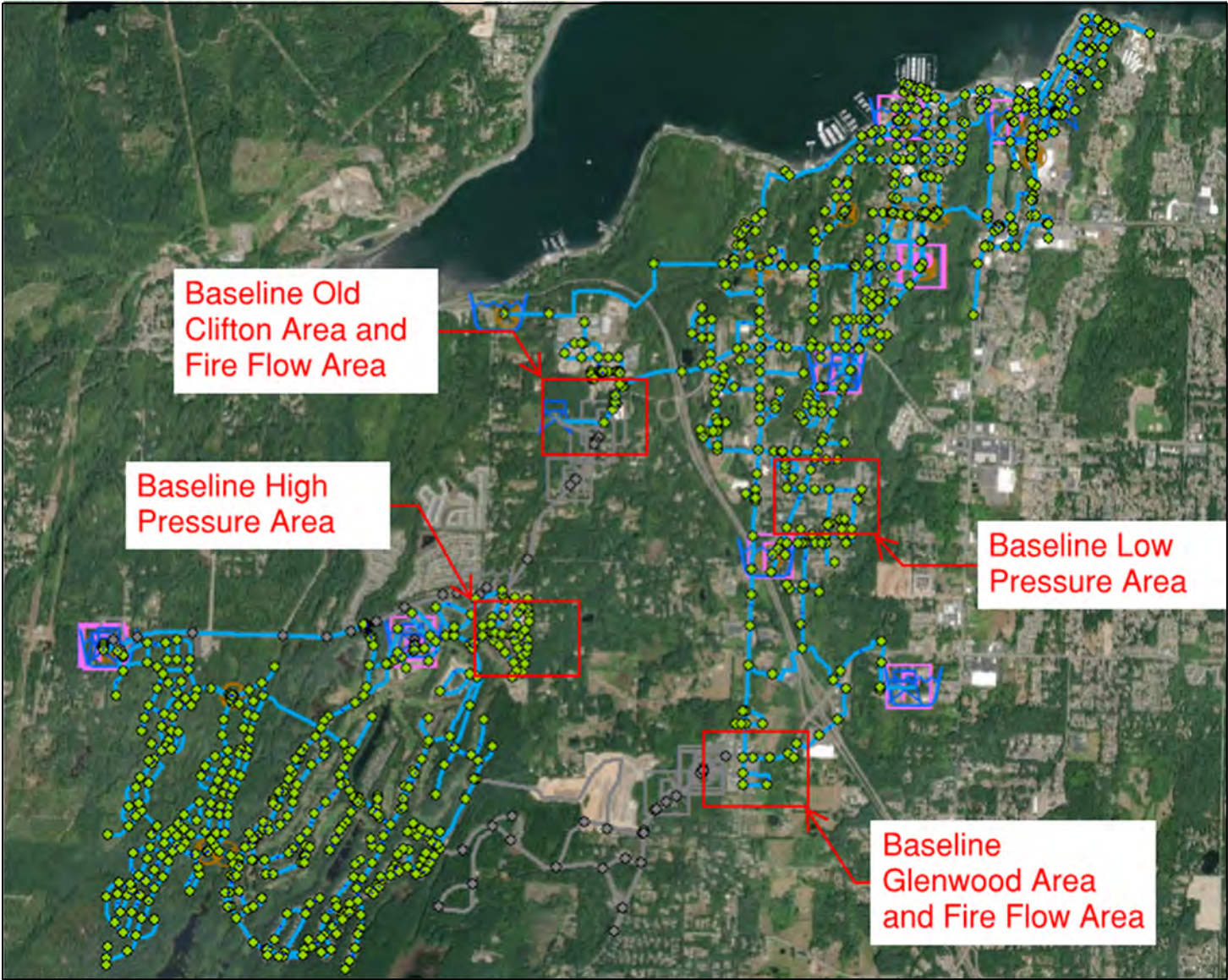




Table 4-1. Baseline at Old Clifton Tank area

Scenario	Pressure
2017 PHD	>52 psi
2017 MDD+FF	>46 psi
2037 PHD	>51 psi
2037 MDD+FF	>49 psi

4.1.2 Baseline Results in Glenwood Area

Alternative 2 includes a pump station on SW Sedgewick Road/Glenwood Road SW between the intersection of SW Sedgewick Road/Sidney Rd SW (390 Zone) and McCormick Woods (580 Zone). Table 4-2 establishes the baseline pressures in the 390 Zone at the intersection of SW Sedgewick Road/Sidney Rd SW. Figure 4-1 displays this area. These baseline pressures will be referred to in the results analysis section when evaluating the impacts of the new pump station on the existing distribution system pressures.

Table 4-2. Baseline at Glenwood area

Scenario	Pressure
2017 PHD	>73 psi
2017 MDD+FF	>59 psi
2037 PHD	>74 psi
2037 MDD+FF	>71 psi

Note: Glenwood Area refers to intersection of SW Sedgewick RD and SW Sidney Rd.

4.1.3 Baseline Low Pressure Areas in 390 Zone

At baseline conditions, there are areas of the 390 Zone that are modeled to already experience low pressures. Per the City’s WSP Section 3.5.11, “Pressures below 40 psi existing at the following locations...In the 390 zone in the area along Sidney Ave. between Lippert Dr W and Alpha Ln. where elevations are above 300-feet. The model predicts static pressures in this area to be between 20-30 psi, with the Melcher pump station off. However, staff reported that no pressure complaints have been received from the area.” It is important to note that these conditions are anticipated to occur in the system with or without the addition of the new pump station.

At baseline conditions, the model indicates pressures along Sidney Avenue from Well 9/Park Reservoir to Well 8 are lower than 30 psi, with pressures being below 20 psi at 1800 Sidney Avenue (Atlas Apartments). Figure 4-2 displays this area with 2037 PHD pressures, and Table 4-3 displays the pressures for multiple scenarios.

Figure 4-2. Baseline pressure at Atlas Apartments during 2037 PHD

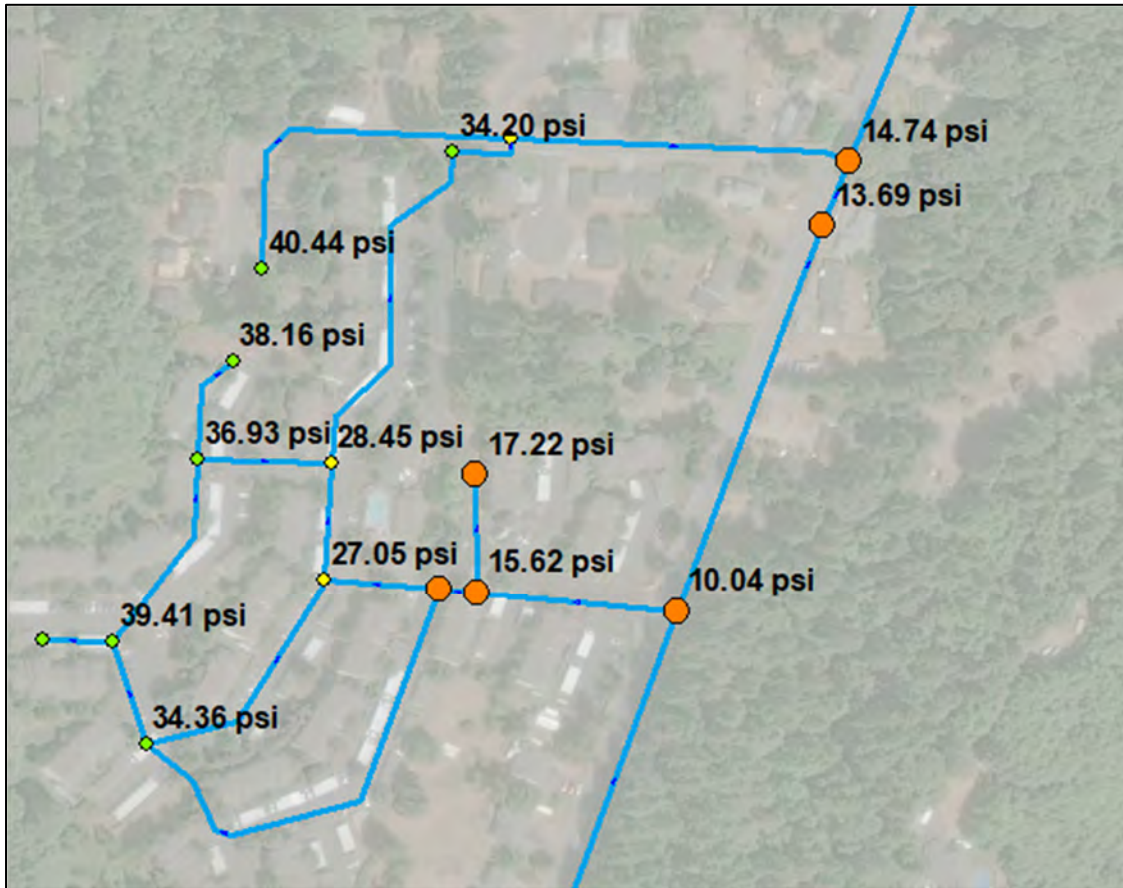


Table 4-3. Baseline at low pressure area

Scenario	Pressure
2017 PHD	>23 psi
2017 MDD+FF	>17 psi
2037 PHD	>10 psi
2037 MDD+FF	>23 psi

Note: Low Pressure Area refers to Atlas Apartments Area.

The model results also indicate low pressures in the following areas:

- Along Sherman Avenue south of intersection with W Melcher Street, and
- Near future Well 13.

On March 19, 2021, City staff took pressure readings in this area of the distribution system, to investigate this low pressure situation. The lowest pressure recorded in this area was 44 psi (at a hydrant). This indicates that the model may be representing lower pressures than actually exist in this small area. While outside the scope of this effort, the City may choose to further investigate and refine this area of the hydraulic model.



4.1.4 Baseline High Pressure Areas in 580 Zone

At baseline conditions, there are low elevation areas of the 580 Zone distribution system that experience high pressures. It is important to note that these conditions are anticipated to occur in the system with or without the addition of the new pump station.

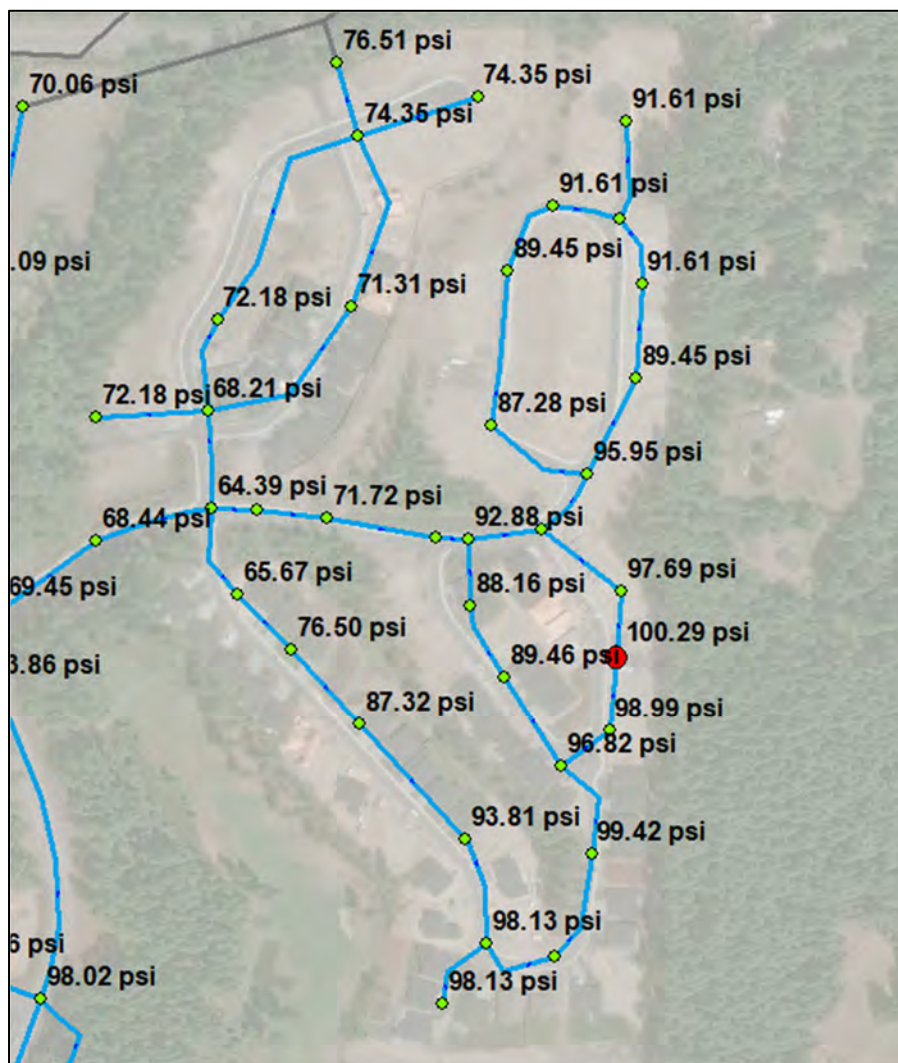
Pressures in the Eldon Trails community (Viridian Ave SW) approach or exceed 100 psi. Per the City’s WSP Section 3.1.5, “when pressures exceed 80 psi, the customer should provide and maintain individual PRVs.” It is anticipated that even without the addition of the new pump station, that PRVs will be needed in this area to maintain pressure below 80 psi. Figure 4-3 displays this area with 2037 PHD pressures, and Table 4-4 displays the pressures for multiple scenarios.

Table 4-4. Baseline at high pressure area

Scenario	Pressure
2017 PHD	103 psi
2017 MDD+FF	96 psi
2037 PHD	100 psi
2037 MDD+FF	103 psi

Note: High pressure area refers to Eldon Trails community.

Figure 4-3. Baseline pressure in Eldon Trails Community during 2037 PHD



4.2 Old Clifton Alternative Results

This section discusses the results for the Old Clifton alternative route.

Analysis of the pipelines at 1,950 GPM indicated a 12-inch pipe would experience 10 psi combined headloss on the suction and discharge distribution main, with 2 ft headloss per 1,000 ft on the discharge and 8 ft headloss per 1,000 ft on the suction. A 16-inch pipe would experience 3 psi headloss. A 12-inch pipe was selected for the analysis.

The velocity in the 12-inch water main at 1,950 GPM is approximately 6 fps, which is less than the maximum allowed 8 fps.

The pump station was evaluated at three elevation contours: 317 feet, 284 feet and 265 feet.

4.2.1 Pump Station at Elevation 317 Feet

The pump station was initially evaluated at 1,950 GPM for an elevation contour of 317 feet at 2037 PHD. See Figure 2-1 for location of this pump station. The results indicate

10 psi on the suction side of the pump station and 136 psi on the discharge side. At this flow rate, a lower elevation pump station would be required to meet City design standards.

Additional analysis was performed at 1,300 GPM. At 2037 PHD, the suction pressure is 16 psi. At this flow rate, a lower elevation pump station would be required to meet City design standards.

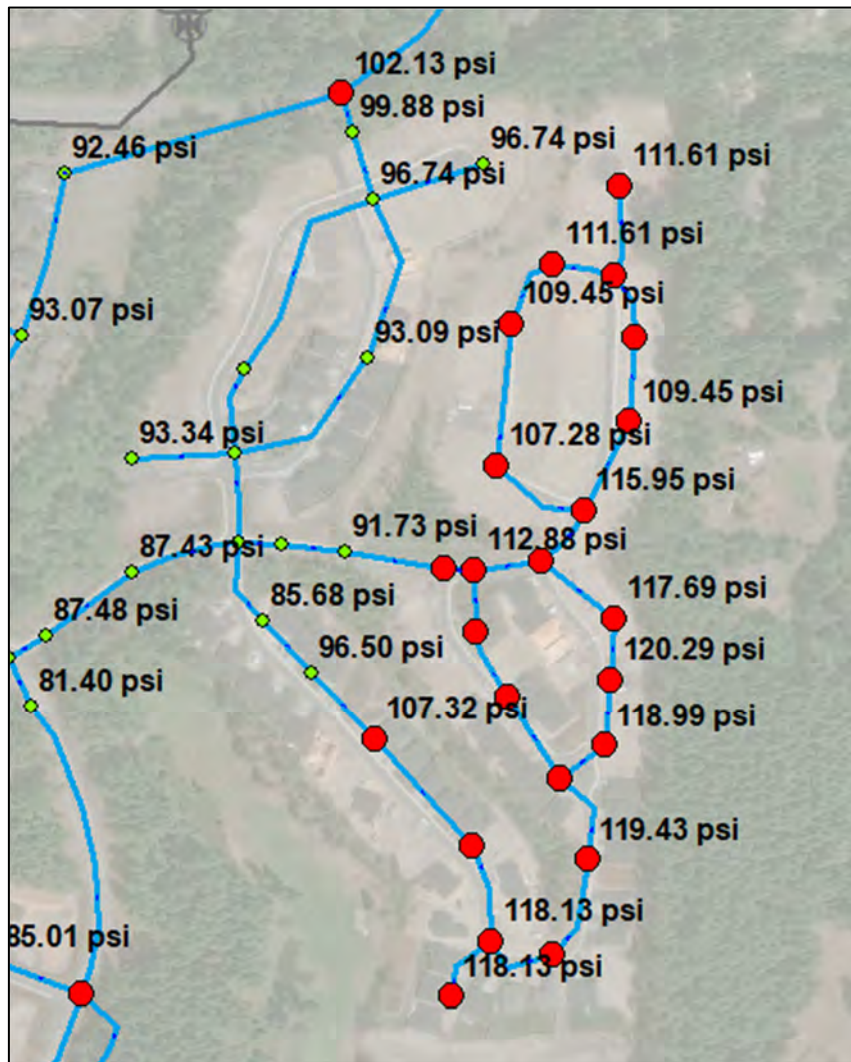
Additional analysis was performed at 650 GPM. At 650 GPM, the suction pressure is 21 psi and the discharge pressures is 109 psi. At 2037 MDD, with a fire flow of 1,000 GPM in the 390 Zone to the east of Old Clifton Tank, suction pressure at the pump station drops to 16 psi. At this flow rate, a lower elevation pump station would be required to meet City design standards.

4.2.2 Pump Station at Elevation 284 Feet

A pump station at an elevation contour of 284 feet (east of intersection with SW Chawla Ct, see Figure 2-1 for location) at 1,950 GPM at 2037 PHD results in approximately 27 psi on the suction side and 155 psi on the discharge size of the pump station.

Services between the discharge side of the pump station and the existing McCormick Woods system would require pressure reducing valves. Other than the high-pressure area in the Eldon Trails community (Figure 4-4), pressures within the 580 Zone are generally less than 100 psi.

Figure 4-4. 1,950 GPM Pump Station at 284 Ft, 2037 PHD High Pressure in Eldon Trails Community



At 2037 MDD, with a fire flow of 1,000 GPM in the 390 Zone to the east of Old Clifton Tank, suction pressure at the pump station drops to 22 psi. The pressures in the area of the 390 Zone adjacent to the fire flow are greater than 33 psi, which is a reduction of approximately 17 psi from baseline pressures.

In general, the addition of a fire flow at 2037 MDD in the McCormick Woods system results in insignificant impacts to pressure in the 580 Zone.

The results indicate that the pump station could be installed in this location, but that the new main connecting the existing Port Orchard system to the new pump station would need to be classified as a transmission main and would not be able to serve residential customers along SW Old Clifton Road. To serve these areas, a parallel distribution main would need to be installed from the discharge side of the pump station approximately 500 LF east along SW Old Clifton Road. This distribution main would require a pressure reducing valve to maintain pressures below 100 psi.

4.2.3 Pump Station at Elevation 265 Feet

A pump station at an elevation contour of 265 feet (just west of the intersection of the existing Old Clifton Tank main and SW Old Clifton Rd, see Figure 2-1 for location) at a flow rate of 1,950 GPM at 2037 PHD provides approximately 37 psi on the suction side and 165 psi on the discharge side of the pump station. Services off the discharge side of the pump station distribution main would require pressure reducing valves. Other than the high-pressure area previously described in the Eldon Trails community, pressures within the 580 Zone are less than 100 psi.

At 2037 MDD, with a fire flow of 1,000 GPM in the 390 Zone to the east of Old Clifton Tank, suction pressure at the pump station drops to 32 psi. The pressures in area of the 390 Zone adjacent to the fire flow are similar to the results of the pump station at an elevation contour 284 feet and are greater than 30 psi.

In general, the addition of a fire flow at 2037 MDD in McCormick Woods results in insignificant impacts to pressure in the 580 Zone.

This scenario meets the City's design standards for pump stations.

4.2.4 Low Pressure Areas in 390 Zone

The pressures in the baseline low pressure area identified in Section 4.1.3 decrease by approximately 5 psi at PHD and 15 psi at MDD+FF. At current model conditions, this decreases the pressures in this area to approximately 5 psi. Pressures in this area would need to be increased to a baseline of 45 psi such that the pressure drop from the pump station does not drop these areas below 30 psi.

Field information obtained by the City per Section 4.1.3 indicates that pressures in this area may be higher than pressures determined by the model. The City may choose to further investigate and refine the model results in this area to evaluate if these impacts are anticipated to be realized in the system.

4.2.5 High Pressure Areas in 580 Zone

The pressures in the baseline high pressure areas identified in Section 4.1.4 increase by approximately 20 psi. At current conditions, this increases the pressures in this area to 120 psi. As stated in the City's Water System Plan (2020), this area requires PRVs in any condition. As such, these high pressures are not a limiting factor on the design of the pump station.

4.3 Glenwood Alternative Results

This section discusses the results for the Glenwood alternative route.

Analysis of the pipeline at 1,950 GPM indicated a 12-inch pipe would experience 33 psi combined headloss on the suction and discharge distribution main, with 10 ft headloss per 1,000 ft on the mains on both the discharge and suction sides of the pump station. A 16-inch pipe would experience 10 psi combined headloss on the suction and discharge distribution main, with 3 ft headloss per 1,000 ft on the mains on both the discharge and suction sides of the pump station. A 12-inch pipe was selected for the analysis.

The velocity in the 12-inch water main is approximately 6 fps, which is less than the City's maximum allowed velocity of 8 fps.

The pump station was evaluated at two elevation contour locations: 280 feet and 210 feet.

An additional scenario evaluated the use of two pump stations in series.

4.3.1 Pump Station at Elevation 280 Feet

The pump station was initially evaluated at an elevation contour of 280 feet, with a pump flow rate of 1,950 GPM at 2037 PHD. See Figure 2-2 for location. The results indicate complete pressure loss on the suction side of the pump station. At this flow rate, a lower elevation pump station would be required to meet the City's design standards.

Additional analysis was performed at 1,300 GPM. At 1,300 GPM at 2037 PHD, the suction pressure is 10 psi. At this flow rate, a lower elevation pump station would be required to meet the City's design standards.

Additional analysis was performed at 650 GPM. At 650 GPM, the suction pressure is 22 psi and the discharge pressures is 127 psi. At 2037 MDD, with a fire flow of 1,000 GPM in the 390 Zone at the intersection of SW Sedgewick Rd and Sidney Road SW, suction pressure at the pump station drops to 12 psi. The pressures in the area of the 390 Zone adjacent to the fire flow remain above 50 psi with a decrease of approximately 20 psi from baseline conditions. A suction pressure of 12 psi is below the City's design standards; however, this option could be considered if the new main connecting the existing Port Orchard system to the new pump station were classified as a transmission main and would not be able to be used to serve residential customers along SW Sedgewick Rd. There currently does not appear to be residences in this area; however, to serve these areas in the future, a parallel distribution main would need to be installed from the discharge side of the pump station approximately 2,000 LF east along SW Sedgewick Road. This distribution main would require a pressure reducing valve to maintain pressures below 100 psi.

The pressures in the Stetson Heights development area would exceed allowable pressures, resulting in the need for PRVs at each residence.

In addition, by 2039, another pump station would need to be installed at the Old Clifton location to meet MDD, due to the constrained pumping capacity of the Glenwood pump station if built at this location.

In general, fire flow in the McCormick Woods system results in insignificant impacts to pressure in the 580 Zone.

To improve the suction pressure, the Glenwood pump station could be located at the lower elevation (see next section).

4.3.2 Pump Station at Elevation 210 Feet

A pump station at an elevation contour of 210 feet (east of intersection with SW Hepburn Way, see Figure 2-2 for location) at a flow rate of 1,950 GPM at 2037 PHD, provides approximately 23 psi on the suction side and 203 psi on the discharge size of the pump station.

At 2037 MDD, with a fire flow of 1,000 GPM in the 390 Zone at the intersection of SW Sedgewick Rd and Sidney Road SW, suction pressure at the pump station drops to 12 psi. The pressures in the area of the 390 Zone adjacent to the fire flow drop to 21 psi with a decrease of approximately 30 psi from baseline conditions.

In general, fire flow in McCormick Woods results in insignificant impacts to pressure in the 580 Zone.

Additional analysis was performed at 1,300 GPM at this elevation. At 1,300 GPM and 2037 PHD, the pump station suction pressure is 27 psi and the discharge pressure is 196 psi.

At 2037 MDD, with a fire flow of 1,000 GPM in the 390 at the intersection of SW Sedgewick Rd and Sidney Road SW, suction pressure at the pump station is 30 psi. The pressures in area of the 390 Zone adjacent to the fire flow is 37 psi with a pressure decrease of approximately 13 psi from baseline.

The pressures in the Stetson Heights development area would exceed allowable pressures, resulting in the need for PRVs at each residence.

At an elevation contour of 210 feet, the maximum flow rate that meets the City's design standards is 1,300 GPM.

4.3.3 Two Pump Stations in Series

As described above, with a single pump station, the pressures in the area of the Stetson Heights development were higher than 100 psi and would likely require individual PRVs for each residence. To address the high pressures in this area, two pump stations could be installed in series to create a middle pressure zone (essentially in Stetson Heights) between the 390 Zone and the 580 Zone.

The scenario evaluated the following pump stations:

- Pump Station 1 (PS1): 1,300 GPM at an elevation of 210 feet, located as described above in Section 4.3.2.
- Pump Station 2 (PS2): 1,300 GPM at an elevation of 315 feet, located immediately west of the Stetson Heights development (see Figure 2-2).

The model results indicate it is possible to create a middle pressure zone, with PS1 discharge pressures of 127 psi, pressures in the Stetson Heights development ranging between 40 psi and 105 psi, and the suction pressure of PS2 approximately 20 psi higher than the lowest pressure in the middle zone.

It may be possible to design PS1 with a small jockey pump and a pressurized bladder tank sized to minimize the number of pump starts during low flow conditions.

Alternatively, a small ground level tank could be constructed to serve as a hydraulic break. PS1 would pump into this tank, which then would establish the hydraulic grade of the new middle pressure zone, with PS2 pumping out of it. If this approach were taken, said tank would likely be best located in the northwest portion of the Stetson Heights area, based on elevations.

This scenario is required to meet the City's design standards.

4.3.4 Low Pressure Areas in 390 Zone

At 1,300 GPM (the largest flow rate that meets the City's design standards for a pump station in this area), the pressures in the baseline low pressure area in the 390 Zone identified in Section 4.1.3 decrease by approximately 12 psi at PHD and approximately 25 psi at MDD+FF. At current model conditions, this decreases the pressures in this area to approximately 0 psi. Pressures in this area would need to be increased to a baseline of 55 psi such that the pressure drop from the pump station does not drop these areas below 30 psi.

Field information obtained by the City per Section 4.1.3 indicates that pressures in this area may be higher than pressures determined by the model. The City may choose to further investigate and refine the model results in this area to evaluate if these impacts are anticipated to be realized in the system.

4.3.5 High Pressure Areas in 580 Zone

At 1,300 GPM (the largest flow rate that meets the City's design standards for a pump station in this area), the pressures in the baseline high pressure areas in the 580 Zone identified in Section 4.1.4 increase by approximately 18 psi at PHD and approximately 10 psi at MDD+FF. As stated in the Water System Plan (2020), this area requires PRVs in any condition. As such, these high pressures are not a limiting factor on the design of the pump station.

4.4 Reverse Flow Capacity

An evaluation was performed to determine the maximum capacity that can flow from the 580 Zone to the 390 Zone through a pressure reducing/sustaining valve.

The Old Clifton route is able to flow 2,300 GPM while maintaining greater than 20 psi in the 580 Zone.

The Glenwood route is able to flow 2,400 GPM while maintaining greater than 20 psi in the 580 Zone.

4.5 Results Summary

In summary, a 1,950 GPM pump station to connect the 390 Zone with the 580 Zone in the Old Clifton area would need to be located at 284 feet to meet the City's design standards and in combination with Well 11 and Well 12 will provide MDD for both the 580 Zone and 660 Zone with the largest pump offline and an assumed 20 hours of pumping per day. If this location were selected, the City may consider installing a 500 LF parallel distribution main to serve customers on the pipe between the City's existing system and the suction side of the pump station. To improve the suction pressures, a pump station could be installed at an elevation contour of 265 feet. This location would require installation of PRVs for customers on the discharge pipe between the pump station and the existing McCormick Woods water system.

For the Glenwood area, the pump station that meets the City's design standards is a 1,300 GPM pump station at an elevation contour of 210 feet. A pump station of this size will meet MDD through 2023; however, an additional pump station would need to be constructed along Old Clifton to meet future demands. The additional pumping capacity

needed to meet 2039 MDD is 650 GPM. In order to minimize high pressures in the Stetson Heights development area, a second pump station could be installed to the west of the development.

This analysis indicates that an area within the City's system that is currently predicted in the hydraulic model to have low operating pressures may see said pressures reduced even further with the addition of the proposed pump station (in either location). This area of potential concern is located near Atlas Apartments on Sidney Avenue. However, as noted above in Section 4.1.3, the City has not received low pressure complaints in this area and field information indicates actual pressures are higher than those resulting from the model, so it is unclear how significant an issue this presently is. Prior to proceeding with predesign efforts on the pump station, it is recommended that this issue be further evaluated, including field testing of current pressures and potentially recalibration of the model in this area.

5 Project Cost

This section summarizes the costs associated with each alternative.

5.1 Old Clifton Alternative

The preferred Old Clifton alternative includes installation of 5,800 LF of 12-inch ductile iron water main within Old Clifton Road and construction of a 1,950 GPM pump station at an elevation contour of 265 feet. The cost associated with this alternative, including construction and engineering fees, is estimated to be \$3.7M. See Appendix A for details of the estimate.

5.2 Glenwood Alternative

The preferred Glenwood alternative includes two pump stations in series, including construction of a 1,300 GPM pump station at an elevation contour of 210 feet (including jockey pumps and a bladder tank), construction of a 1,300 GPM pump station at an elevation contour of 315 feet, and installation of 11,700 LF of 12-inch ductile iron water main, approximately 10,000 LF of which is anticipated to be installed by a developer. The cost for all water mains is included in the estimate. The cost associated with this alternative, including construction and engineering fees, is estimated to be \$6.4M. See Appendix A for details of the estimate.

6 Funding Opportunities

Funding opportunities for both alternatives are the same. Funding opportunities that were evaluated are included in Table 6-1.

The Drinking Water State Revolving Loan (DWSRF) appears to be a potential option for this project. There is up to \$5M available per jurisdiction, and the loan interest rate is 1.75% plus origination costs for a 20-year term. The funding cycle begins in October.

The Water Infrastructure Finance and Innovation Act (WIFIA) funding applies to projects with greater than \$25M. The City may consider combining multiple projects to meet this

minimum requirement. This loan comes with a 5-year debt service deferral after construction is complete. Interest rates vary and are currently between 1.2% to 2.0%. WIFIA will fund 49% of total project cost. Typical term is 30 years.

Building Resilient Infrastructure and Communities (BRIC) is a grant with a cost share element. This funding source may be an option and includes the requirement to be a sub-applicant through the State of Washington. Pre-applications for this grant are typically due to the State by October. \$50M maximum per application with a 25% cost share.

The Public Works Board (PWB) - Construction Loan may be an option. This loan is a competitive process and funding occurs in six-month cycles. There is a maximum \$10 million dollar award per jurisdiction per biennium limit.

Table 6-1. Funding Opportunities

Likely Rank of Applicability (1 = applicable, 2= likely applicable, 3=may be applicable)	Funding Source	Agency	Applicability	Eligibility	Amount Available	Terms	Funding Cycle	Website
1	Drinking Water State Revolving Fund (DWSRF)	WA DOH	DWSRF funds all types of drinking water projects. SRF typically provides low interest loans but offers some grants and principal forgiveness for low-income communities and green infrastructure projects.	Local Agencies. Must have an approved or pending Water System Plan. Must have construction component. Cannot address growth or fire flow.	\$5M/jurisdiction. Potential subsidy for low-income areas based on affordability index.	1.75% interest rate, plus origination costs. 20-year term. 1 % loan fees.	Oct 1- Nov 30	https://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/WaterSystemAssistance/DrinkingWaterStateRevolvingFundDWSRF
3	Water Infrastructure Finance and Innovation Act (WIFIA)	EPA	Eligible Projects: Projects eligible under CWSRF and DWSRF. Enhanced energy efficiency projects at drinking water facilities and wastewater facilities. Brackish or seawater desalination, aquifer recharge, alternative water supply, and water recycling projects. Drought prevention, reduction, or mitigation projects. Acquisition of property if it is integral to the project or will mitigate the environmental impact. A combination of projects secured by a common security pledge or submitted under one application by an SRF program. Funds can go towards pre-construction activities and construction activities.	Local agencies	Project must be greater than \$25M. No maximum project size.	5-year debt service deferral after construction complete, interest rates vary, currently 1.2-2%, based on average weighted life of the loan. WIFIA will fund 49% of total project cost. Typical term is 30 years.	Prospective borrowers must submit a WIFIA Letter of Interest (LOI) to EPA that describes the project's eligibility, financial creditworthiness, engineering feasibility, and alignment with EPA's policy priorities. If selected by EPA the prospective borrower is invited to submit a WIFIA application . LOIs are typically due in early Fall (Oct 15, 2020)	https://www.epa.gov/wifia
2	Building Resilient Infrastructure and Communities (BRIC)	FEMA (through State)	Replaces former "Pre-Hazard Mitigation Grant Program", specifically geared towards resilient infrastructure funding	Local agencies are eligible, but as a "sub applicant" through the State.	\$450M total, \$50M per application	25% Cost Share Required	Check WA deadlines. FEMA accepts applications through January, but WA State applications are typically due by October	https://www.fema.gov/grants/mitigation/fy2020-nofo
1	Public Works Board (PWB) - Construction Loan	WA State Public Works Board	There is approximately \$68 million set aside for construction applications. Award is based on a competitive process. Applications every six months starting in June 2019, until the appropriated funds are exhausted. There is a maximum \$10 million dollar award per jurisdiction per biennium limit, with a loan term of 20 years, including 5 years for completion. Applications may be submitted for emergencies at any time.	Local agencies	\$68M total, up to \$10M per jurisdiction	Determined prior to funding cycle	June-July, Dec-Jan	https://www.commerce.wa.gov/building-infrastructure/pwb-financing/

Appendix A – Cost Estimates

City of Port Orchard
 McCormick Woods Consolidation Study
 Opinion of Probable Construction Cost
 Old Clifton Alternative



31-Mar-21

Item #	Description	Unit	Unit Cost	Qty	Total
General					
1	MOBILIZATION	LS	6%	1	\$ 88,500
2	PUMPS - 650 GPM	EA	\$ 54,000	3	\$ 162,000
3	PUMP STATION BUILDING (INCLUDES ELECTRICAL, I&C)	SF	\$ 300	700	\$ 210,000
4	PUMP STATION VALVES - 12-INCH GATE	EA	\$ 12,000	6	\$ 72,000
5	PUMP STATION VALVES - PRESSURE RELIEF VALVE	EA	\$ 5,000	3	\$ 15,000
6	PUMP STATION VALVES - 12-INCH CHECK	EA	\$ 8,600	2	\$ 17,200
7	12-INCH GATE - BURIED	EA	\$ 8,200	4	\$ 32,800
8	12-INCH DUCTILE IRON MAIN - INSTALLED	LF	\$ 98	5800	\$ 565,500
9	PAVEMENT REMOVAL, HAUL AND RESTORATION	SY	\$ 78	3867	\$ 299,700
10	GENERATOR - 200 kW	LS	\$ 100,000	1	\$ 100,000
11					\$ -
12					\$ -
	SUBTOTAL (INCLUDING MOB)				\$1,562,700
	CONTRACTOR OH&P	15%			\$234,400
	SALES TAX	9%			\$161,700
	CONTINGENCY - CONSTRUCTION	50%			\$979,400
	SUBTOTAL CONSTRUCTION				\$2,938,200
	ENGINEERING DESIGN	10%			\$293,820
	CONTINGENCY - DESIGN	50%			\$146,910
	ENGINEERING - CONSTRUCTION MANAGEMENT	10%			\$293,820
	SUBTOTAL ENGINEERING				\$734,550
	GRAND TOTAL				\$3,673,000

Water CIP

City of Port Orchard				
EXHIBIT A 2020-2030 Water System Capital Improvement Plan				
CIP No.	Project Name	Cost Estimate	Percent CFC	CFC Portion \$
1	580 Zone Storage	\$2,850,000	100%	\$2,850,000
2	CIP No. 2 Combined	\$8,766,852	75%	\$6,575,139
2A	Well 13 Development & Treatment	n/a		
2B	Maple Ave Improvements and Water Main Replacement	n/a		
2C	390 to 260 Rezone PRVs (4 each)	n/a		
3	Well 11 Development, Treatment, and Booster Pump Station	\$8,000,000	25%	\$2,000,000
4	580 Zone Transmission & Distribution Main	\$1,235,000	100%	\$1,235,000
5	390 Zone Storage	\$3,000,000	100%	\$3,000,000
6	Telemetry Upgrades	\$100,000	25%	\$25,000
7	390 to 580 Zone Booster Station (Old Clifton)	\$750,000	75%	\$562,500
8	580 to 390 Zone Transmission Main (580/390 PRV to Old Clifton Tank)	\$1,325,000	75%	\$993,750
9	Well 12 Development, Treatment, and Booster Pump Station	\$7,000,000	100%	\$7,000,000
10	Melcher Pump Station Upgrade	\$500,000	25%	\$125,000
11	PRV Improvements per Hydraulic Model	\$350,000	50%	\$175,000
12	390 to 580 Zone Booster Station, 1st Lift (Glenwood)	\$900,000	0%	\$0
13	391 to 580 Zone Booster Station, 2nd Lift (Glenwood)	\$725,000	100%	\$725,000
14	390 to 580 Zone Transmission Main (to Glenwood PS)	\$2,750,000	75%	\$2,062,500
15	580 to 660 Zone Booster Station	\$750,000	100%	\$750,000
16	660 Zone Storage	\$2,850,000	100%	\$2,850,000
17	Well 7 Treatment/Pump Station Upgrades	\$750,000	0%	\$0
18	Main Replacements per Hydraulic Model	\$2,000,000	25%	\$500,000
19	Annual Main Replacement Program (Upsize 1"-4" main to 6"-8") See Table 1	\$2,500,000	0%	\$0
20	Annual Valve Replacement Program	\$720,000	0%	\$0
21	Annual Hydrant Replacement Program	\$450,000	0%	\$0
22	Foster Pilot Mitigation Projects	\$1,000,000	100%	\$1,000,000
23	390 Zone Low Pressure Booster Pumps for Existing Water Services	\$600,000	100%	\$600,000
24	Black Jack Creek (Kendall) Water Main Crossing	\$750,000	0%	\$0
Total Water Capital Improvement Plan Improvements		\$50,621,852		\$33,028,889
				65%



City of Port Orchard

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

Agenda Staff Report

Agenda Item No.	<u>Public Hearing</u>	Meeting Date:	<u>May 11, 2021</u>
Subject	<u>Adoption of Ordinance No. 022-21,</u>	Prepared by:	<u>Mark Dorsey, P.E.</u>
	<u>Adopting the 2021 Water System</u>		<u>Public Works Director</u>
	<u>Capital Improvement Plan (CIP)</u>	Atty Routing No:	<u>366922.0013 – Water</u>
		Atty Review Date:	<u>05.06.2021</u>

Summary: As a function of the Water System Plan (WSP) Update, currently anticipated to be approved by the Washington State Department of Health (DOH) this Fall, the City’s Public Works Department has updated the Water System Capital Improvement Plan (CIP). Due to unforeseen COVID19-related delays in the DOH approval of the WSP Update, coupled with the City’s need to timely update its CIP so as to update its Capital Facilities Charges (CFCs) to reflect current needs and costs, the Public Works Department is seeking early adoption of the Water System CIP as a standalone action item. This is a necessary precursor to the proposed amendment of the Water System Capital Facility Charge (CFC) to proceed. Please recall that at the April 27, 2021 Regular City Council Meeting, Staff presented the Water System Capital Improvement Program 2020-2030, which included 1) the updated Water System Capital Improvement Plan (CIP) and 2) methodology alternatives for an update to the City’s Water System Capital Facility Charge (CFC). The purpose of the presentation was to 1) determine whether the current Water System CFC’s are equitable and adequate to fund both the needed Water CIP’s and to maintain the current water system and 2) to explore alternative CFC methodologies.

Relationship to Comprehensive Plan: Chapter 7 – Utilities (Sewer)

Recommendation: Staff recommends opening and holding the Public Hearing on Ordinance No. 022-21.

Alternatives: Do not hold Public Hearing

Attachments: Ordinance No. 022-21 w/ Exhibit A (Water System Capital Improvement Plan)



City of Port Orchard

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

Agenda Staff Report

Agenda Item No.	Business Item	Meeting Date:	May 11, 2021
Subject	Adoption of Ordinance No. 022-21, Adopting the 2021 Water System Capital Improvement Plan	Prepared by:	Mark Dorsey, P.E. Public Works Director
		Atty Routing No:	366922.0013 – Water
		Atty Review Date:	05.06.2021

Summary: Earlier this evening, a duly-noticed Public Hearing was held before the City Council on the proposed adoption of the 2021 Water System Capital Improvement Plan.

As a function of the Water System Plan (WSP) Update, currently anticipated to be approved by the Washington State Department of Health (DOH) this Fall, the City’s Public Works Department has updated the Water System Capital Improvement Plan (CIP). Due to unforeseen COVID19-related delays in the DOH approval of the WSP Update, coupled with the City’s need to timely update its CIP so as to update its Capital Facilities Charges (CFCs) to reflect current needs and costs, the Public Works Department is seeking early adoption of the Water System CIP for the amendment of the Water System Capital Facility Charge (CFC) to proceed. Please recall that at the April 27, 2021 Regular City Council Meeting, Staff presented the Water System Capital Improvement Program 2020-2030, which included 1) the updated Water System Capital Improvement Plan (CIP) and 2) methodology alternatives for an update to the City’s Water System Capital Facility Charge (CFC). The purpose of the presentation was to 1) determine whether the current Water System CFC’s are equitable and adequate to fund both the needed Water CIP’s and to maintain the current water system and 2) to explore alternative CFC methodologies.

Relationship to Comprehensive Plan: Chapter 7 – Utilities (Sewer)

Recommendation: Staff recommends adoption of Ordinance No. 022-21, thereby adopting the 2021 Water System Capital Improvement Plan.

Motion for Consideration: I move to adopt Ordinance No. 022-21, thereby adopting the 2021 Water System Capital Improvement Plan.

Alternatives: Do not adopt

Fiscal Impact: Adoption of the 2021 Water System Capital Improvement Plan will have fiscal impact and a Budget Amendment may be required.

Attachments: Ordinance No. 022-21 w/ Exhibit A (2021 Water System Capital Improvement Plan)

ORDINANCE NO. 022-21

**AN ORDINANCE OF THE CITY OF PORT ORCHARD, WASHINGTON, ADOPTING
THE UPDATED 2021 WATER CAPITAL IMPROVEMENT PLAN; PROVIDING FOR
SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.**

WHEREAS, consistent with the City’s Comprehensive Plan and development regulations, the City Council updated its Water System Plan in 2009; and

WHEREAS, at the direction of the City Council, the City conducted a comprehensive review of the Water System Plan, including new system modeling, and has identified necessary updates its existing Water System Plan due to increased development that likely necessitates the construction of new infrastructure; and

WHEREAS, the City desires to adopt a new Water System Plan to reflect these updates, and has submitted that plan for approval to the Washington State Department of Health for approval; and

WHEREAS, due to the COVID-19 public health emergency, DOH has estimated a lengthy delay for review and approval of proposed Water System Plans, while the City has an emergent need to adopt an updated Capital Improvement Plan – a component of the Water System Plan—so as to timely update the City’s Water Capital Facilities Charges to accurately reflect need and costs; and

WHEREAS, upon approval from DOH, the City commits to the adoption of the Water System Plan, inclusive of the CIP, in a final action on the Water System Plan; and

WHEREAS, a State Environmental Policy Act Checklist for the proposed CIP herein was prepared by City staff and on October 26, 2020, the City’s SEPA Official issued a Determination of Non-Significance (DNS); and

WHEREAS, a duly noticed Public Hearing before the City Council on the proposed amendments was held on May 11, 2021; and

WHEREAS, the City Council finds that the Capital Improvement Plan attached hereto as Exhibit A and incorporated herein by this reference serves the public health, safety, and general welfare of the citizens of Port Orchard; and

WHEREAS, the City Council also finds that the Capital Improvement Plan is consistent with the goals and policies of the City’s Comprehensive Plan and with the Growth Management Act, Chapter 36.70A RCW; now, therefore,

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

SECTION 1. . The City's 2021 Water Capital Improvement Plan is hereby adopted as set forth in Exhibit A hereto and incorporated herein by this reference.

SECTION 2. If any section, sentence, clause or phrase of this ordinance should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity of constitutionality of any other section, sentence, clause or phrase of this ordinance.

SECTION 3. This ordinance shall be in full force and effect five (5) days after posting and publication as required by law. A summary of this Ordinance may be published in lieu of the entire ordinance, as authorized by State Law.

PASSED by the City Council of the City of Port Orchard, APPROVED by the Mayor and attested by the Clerk in authentication of such passage this 11th day of May 2021.

Robert Putaansuu, Mayor

ATTEST:

Brandy Rinearson, MMC, City Clerk

APPROVED AS TO FORM:

Sponsored by:

Charlene A. Archer, City Attorney

Cindy Lucarelli, Councilmember



City of Port Orchard

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

Agenda Staff Report

Agenda Item No.	<u>Public Hearing 6B</u>	Meeting Date:	<u>May 11, 2021</u>
Subject	<u>First Public Hearing on the Adoption of</u>	Prepared by:	<u>Mark Dorsey, P.E.</u>
	<u>Ordinance No. 023-21Amending</u>		<u>Public Works Director</u>
	<u>POMC 13.04 and Increasing the Water</u>	Atty Routing No:	<u>366922.0013 – Water</u>
	<u>System Capital Facility Charge</u>	Atty Review Date:	<u>05/05/2021</u>

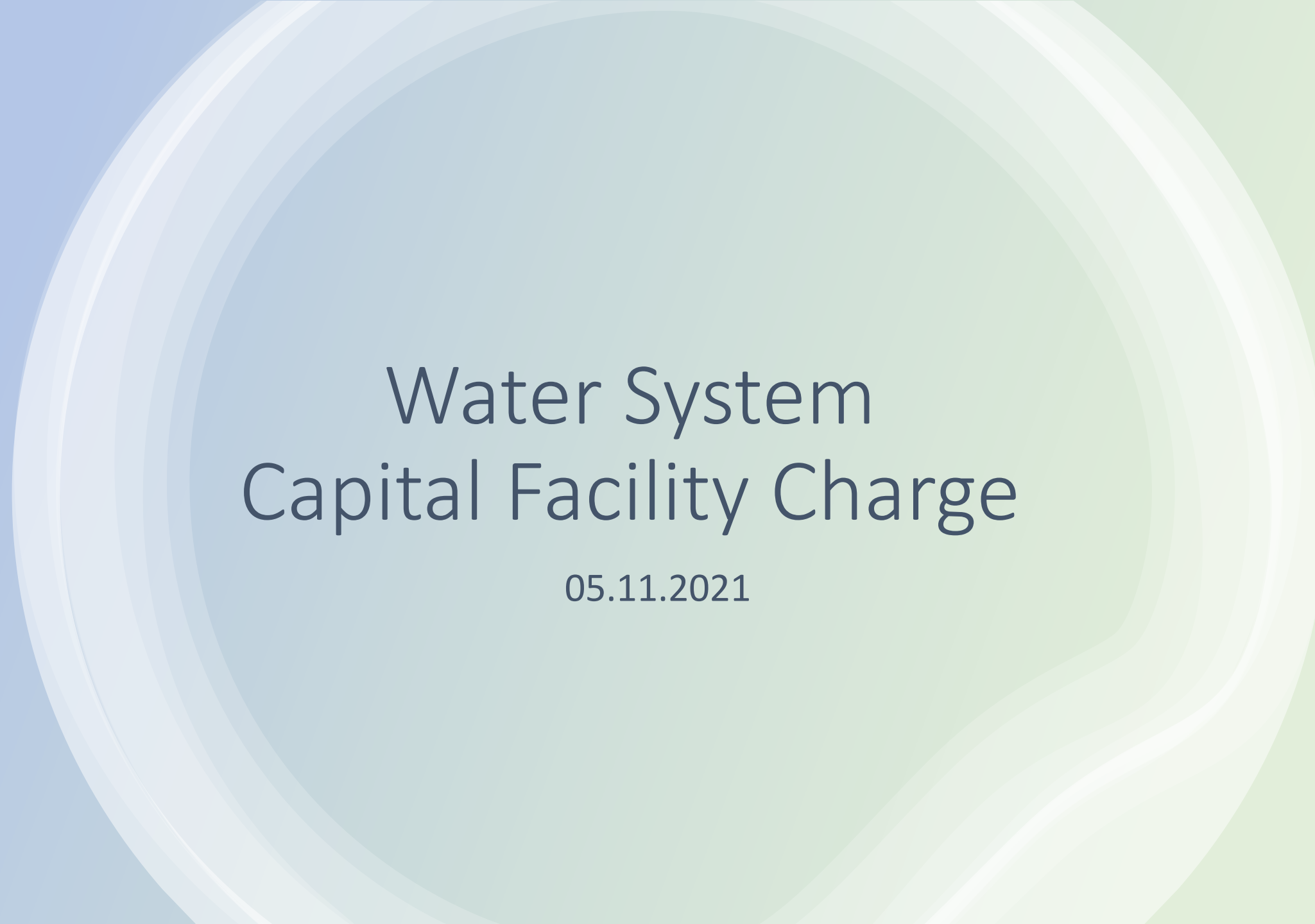
Summary: At the April 27, 2021, Regular City Council Meeting, Staff presented the draft Water System Capital Improvement Program 2020-2030, which included 1) the updated Water System Capital Improvement Plan (CIP) and 2) methodology alternatives for an update to the City's Water System Capital Facility Charge (CFC). The purpose of the presentation was to 1) determine whether the current Water System CFC's are equitable and adequate to fund both the needed Water CIP's and to maintain the current water system; and 2) to explore alternative CFC methodologies. Based on feedback from Council during that presentation, staff prepared Ordinance No. 023-21, which will amend POMC 13.04 to effectuate the proposed increase to the Water CFC and will be on the May 25, 2021 Regular Council Meeting for consideration, following a second Public Hearing on that same date.

Relationship to Comprehensive Plan: Chapter 7 – Utilities

Recommendation: Staff recommends holding the Public Hearing on Ordinance No. 032-21.

Alternatives: Do not hold the Public Hearing.

Attachments: Water System Capital Facility Charge Methodology - Presentation

A large, stylized water drop graphic is centered on the page. The drop is filled with a gradient of light blue and green, and has several concentric, semi-transparent outlines that create a sense of depth and movement. The background is a solid light green color.

Water System Capital Facility Charge

05.11.2021

Water System Capital Facility Charges

Capital Facilities Charges (CFCs) are one-time fees, paid at the time of development, intended to recover a share of the cost of system capacity needed to serve growth. They serve two primary purposes:

- To provide equity between existing and new customers; and
- To provide a source of funding for system capital costs, as growth occurs.

General CFC Calculation Methodology

$$\text{Capital Facility Charge (CFC)} = \frac{\text{Cost Basis}}{\text{Applicable Customer Base}}$$



- Total Estimated Water CIP Cost = **\$50,621,852**
- Total Water CIP Cost attributed to growth ~ (65%) = **\$33,028,889**

City of Port Orchard				
Water System Capital Improvement Plan				
CIP No.	Project Name	Cost Estimate	Percent CFC	CFC Portion \$
1	580 Zone Storage	\$2,850,000	100%	\$2,850,000
2	CIP No. 2 Combined	\$8,766,852	75%	\$6,575,139
2A	Well 13 Development & Treatment	n/a		
2B	Maple Ave Improvements and Water Main Replacement	n/a		
2C	390 to 260 Rezone PRVs (4 each)	n/a		
3	Well 11 Development, Treatment, and Booster Pump Station	\$8,000,000	25%	\$2,000,000
4	580 Zone Transmission & Distribution Main	\$1,235,000	100%	\$1,235,000
5	390 Zone Storage	\$3,000,000	100%	\$3,000,000
6	Telemetry Upgrades	\$100,000	25%	\$25,000
7	390 to 580 Zone Booster Station (Old Clifton)	\$750,000	75%	\$562,500
8	580 to 390 Zone Transmission Main (580/390 PRV to Old Clifton Tank)	\$1,325,000	75%	\$993,750
9	Well 12 Development, Treatment, and Booster Pump Station	\$7,000,000	100%	\$7,000,000
10	Melcher Pump Station Upgrade	\$500,000	25%	\$125,000
11	PRV Improvements per Hydraulic Model	\$350,000	50%	\$175,000
12	390 to 580 Zone Booster Station, 1st Lift (Glenwood)	\$900,000	0%	\$0
13	391 to 580 Zone Booster Station, 2nd Lift (Glenwood)	\$725,000	100%	\$725,000
14	390 to 580 Zone Transmission Main (to Glenwood PS)	\$2,750,000	75%	\$2,062,500
15	580 to 660 Zone Booster Station	\$750,000	100%	\$750,000
16	660 Zone Storage	\$2,850,000	100%	\$2,850,000
17	Well 7 Treatment/Pump Station Upgrades	\$750,000	0%	\$0
18	Main Replacements per Hydraulic Model	\$2,000,000	25%	\$500,000
19	Annual Main Replacement Program (Upsize 1"-4" main to 6"-8") See Table 1	\$2,500,000	0%	\$0
20	Annual Valve Replacement Program	\$720,000	0%	\$0
21	Annual Hydrant Replacement Program	\$450,000	0%	\$0
22	Foster Pilot Mitigation Projects	\$1,000,000	100%	\$1,000,000
23	390 Zone Low Pressure Booster Pumps for Existing Water Services	\$600,000	100%	\$600,000
24	Black Jack Creek Crossing at Kendall Street	\$750,000	0%	\$0
Total Water Capital Improvement Plan Improvements		\$50,621,852		\$33,028,889



Water System CFC

Cost Basis

- Current Facilities represents the original cost value of our water infrastructure adjusted with a 100% interest/inflation factor
- New CFC Project Cost represents the estimated project cost attributable to growth only and to be included in the calculation of the CFC

Current Facilities Cost	\$32,427,297
New CFC Project Cost	\$33,028,889
Total Water CIP CFC Cost	\$65,456,186

Water System CFC

Applicable Customer Base

Alternatives	Methodology
Alternative A Average cost per ERU	(Current Facility ERU's + Water System Plan (WSP) Growth ERU's) (5672+3498)= 9170
Alternative B Allocated Growth Cost per ERU -Based on Water System Plan	Current Facilities ERU's (5672) & WSP Growth ERU's (3498)
Alternative C Allocated Growth Cost per ERU -Permitting Potential DCD	Current Facilities ERU's (5672) & Permitting Potential DCD (4089)
Alternative D Allocated Growth Cost per ERU -Average & Growth Cost per ERU* -Permitting Potential DCD	(Current Facility ERU's + Permitting Potential DCD) (5672 + 4089)= 9,761 & Permitting Potential DCD (4089)

Water System CFC Alternatives & Methodology

Alternatives	Methodology
<p>Alternative A Average cost per ERU</p>	$\frac{(\text{Total Current Facilities Cost} + \text{New Project Total Cost})}{(\text{Current Facility ERU's} + \text{Water System Plan (WSP) Growth ERU's})}$
<p>Alternative B Allocated Growth Cost per ERU -Based on Water System Plan(WSP)</p>	$\frac{\text{Total Current Facilities Cost}}{\text{Current Facilities ERU's}} + \frac{\text{New Project Total Cost}}{\text{WSP ERU's}}$
<p>Alternative C Allocated Growth Cost per ERU -Permitting Potential DCD</p>	$\frac{\text{Total Current Facilities Cost}}{\text{Current Facilities ERU's}} + \frac{\text{New Project Total Cost}}{\text{Permitting Potential DCD}}$
<p>Alternative D Allocated Growth Cost per ERU -Average & Growth Cost per ERU* -Permitting Potential DCD</p>	$\frac{\text{Total Current Facilities Cost}}{(\text{Current Facility ERU's} + \text{Permitting Potential DCD})} + \frac{\text{New Project Total Cost}}{\text{Permitting Potential DCD}}$

Water System Capital Facility Charges

Alternatives	Cost Per ERU	Increase
Current CFC	\$5,945	-
Alternative A Average cost per ERU	\$7,245	\$1,300
Alternative B Allocated Growth Cost per ERU -Based on Water System Plan (WSP)	\$15,387	\$9,442
Alternative C Allocated Growth Cost per ERU -Permitting Potential DCD	\$14,002	\$8,057
Alternative D Allocated Growth Cost per ERU -Average & Growth Cost per ERU* -Permitting Potential DCD	\$11,571	\$5,626

Recommendation

- Best fit for the city to meet the goals of capital facility charges
- Balances the equity between existing and new customers; and
- Provides a source of funding for system capital costs, as growth occurs

Alternative	CFC Cost Per ERU	Increase
Alternative D	\$11,571	\$5,626

Discussion

ORDINANCE NO. 023-21

AN ORDINANCE OF THE CITY OF PORT ORCHARD, WASHINGTON, RELATING TO WATER CAPITAL FACILITY CHARGES (CFC's); AMENDING PORT ORCHARD MUNICIPAL CODE (POMC) SECTIONS 13.04.025 "FEE SCHEDULE"; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the City of Port Orchard charges Capital Facility Charges (CFC's), charges levied upon new connections to the City's water and sewer utilities; and

WHEREAS, on September 22, 2020, the Port Orchard City Council updated the Sewer Capital Facility Charge (CFC) as a function of the Amended General Sewer Plan, which included the updated Sewer Capital Improvement Plan (CIP); and

WHEREAS, as a function of the current Water System Plan Update, which includes the updated Water System Capital Improvement Plan (CIP) which is anticipated to be approved by the Washington State Department of Health (DOH) in the Fall of 2021, the Port Orchard City initiated the Water Capital Facility Charge (CFC) Update at the October 20, 2020 Utility Committee Meeting; and

WHEREAS, subsequent to a presentation by Katy Isaksen & Associates, Inc. at the April 20, 2021 Work Study Session and a follow-up presentation at the April 27 Regular City Council Meeting by city staff, the Port Orchard City Council desires to amend the codified language to allow for a Water Capital Facility Charge (CFC) Update where development has resulted in an upsizing capacity outside that needed for the development; and

WHEREAS, at POMC 13.04.025, staff suggests an amendment to clarify the components of the Water Capital Facility Charge for consistency with POMC 13.04.030; and

WHEREAS, two (2) duly noticed Public Hearings were held on May 11, 2021 and May 25, 2021 before the City Council on the proposed amendments; and

WHEREAS, the City Council finds that the amendments herein to POMC 13.04.025 are consistent with goals and policies of the City's Comprehensive Plan and related regulations, and serve the public health, safety, and general welfare of the citizens of Port Orchard; now, therefore,

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

SECTION 1. Port Orchard Municipal Code 13.04.025 is hereby amended to read as attached at Exhibit A hereto.

SECTION 2. Port Orchard Municipal Code 13.04.030 is hereby amended to read as attached at Exhibit A hereto.

Commented [MD1]: I am not changing this section.....so this is not needed?

SECTION 3. If any section, sentence, clause or phrase of this ordinance should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity of constitutionality of any other section, sentence, clause or phrase of this ordinance.

SECTION 3. This ordinance shall be in full force and effect on July 1, 2021, after posting and publication as required by law. A summary of this Ordinance may be published in lieu of the entire ordinance, as authorized by State Law.

PASSED by the City Council of the City of Port Orchard, APPROVED by the Mayor and attested by the Clerk in authentication of such passage this 25th day of May 2021.

Robert Putaansuu, Mayor

ATTEST:

Brandy Rinearson, MMC, City Clerk

APPROVED AS TO FORM:

Charlotte A. Archer, City Attorney

Sponsored by:

Cindy Lucarelli, Councilmember

PUBLISHED: May 28, 2021

EFFECTIVE DATE: July 1, 2021

Exhibit A

13.04.025 Fee schedule.

(1) The fees set forth below are referenced in POMC 13.04.030, 13.04.033, 13.04.035 and 13.04.040.

Water Sewer Connection Fees	
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Water Capital Facility Charge	POMC 13.04.030(1)(a)
Residential – Per ERU	\$5,945

Commented [MD2]: Will redline this

Water Capital Facility Charge Nonresidential – Based on Meter Size	POMC 13.04.030(1)(b)
3/4"	\$5,945
1"	\$9,928
1-1/2"	\$19,797
2"	\$31,687
3"	\$59,450
4"	\$99,103
Irrigation	No connection fee

Water Inspection Fee	POMC 13.04.030(7) and 13.04.033(3)
Per Meter	\$111.37

Connection Fees/Labor Installation Fees	POMC 13.04.033(1)
3/4"	\$1,113.73
1"	\$1,336.49

Water Sewer Connection Fees	
1-1/2"	\$1,670.61
2"	\$2,227.48
Larger	Estimated case by case

Water in Lieu of Assessment	POMC 13.04.035
Per Front Foot	\$111.37

Sewer Capital Facility Charge, consisting of both:	POMC 13.04.040(2)
Sewer Wastewater Treatment Facility Fee	POMC 13.04.040(2)
Per ERU	\$3,597.37
McCormick Land Co. Div. 1-10 Per ERU	\$881.25
General Facility Fee	POMC 13.04.040(2)
Per ERU	\$8,525

Sewer Inspection Fee	POMC 13.04.040(8)
Per Lateral Connection	\$111.37

(2) The fees set forth below are referenced in POMC 13.04.050, 13.04.055, and 13.04.120.

Billing and Miscellaneous Charges	
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Billing Charges	POMC 13.04.050
Water/Sewer Delinquency Notice at Location	\$10.00

Water Shutoff Fee	\$40.00
Meter Turn-Off Violations (as Determined by City)	\$250.00

Damaging the Utility System	POMC 13.04.120
Violation Fine (as Determined by the City)	\$250.00

Miscellaneous Charges	POMC 13.04.055
After Hours Turn-On/Shutoff	\$75.00
Notification to Tenant of Water Shutoff Per Hold Harmless Agreement	\$10.00
Service Fee for Estimated or Final Billing Closing Requests	\$20.00

(3) The fees set forth below are referenced in POMC 13.04.031 and 13.04.045.

Water Plan Review Fees

Review	POMC 13.04.031
Main Extension Review Per lineal foot of main	\$0.30
Pump Station Review	\$300.00
Significant Facility Review*	Consultant fee** plus 10%

Sewer Plan Review Fees

Review	POMC 13.04.045
Main Extension Review Per lineal foot of main	\$0.30
Pump Station Review	\$300.00
Significant Facility Review*	Consultant fee** plus 10%

Water Inspection Fees

Inspection	POMC 13.04.031
Main Extension Inspection Per lineal foot of main	\$1.25
Pump Station Inspection	\$600.00
Significant Facility Inspection*	Consultant fee** plus 10%

Sewer Inspection Fees

Inspection	POMC 13.04.045
Main Extension Inspection Per lineal foot of main	\$1.50
Pump Station Inspection	\$600.00
Significant Facility Inspection*	Consultant fee** plus 10%

* Significant facilities include improvements such as sewer lift station construction or enlargement, force main construction, water system storage tanks, well construction, and water treatment facilities.

** This review and inspection shall be performed by the city's water or sewer consultant under contract with the city for services of this type.

(Ord. 009-21 § 1 (Exh. A); Ord. 027-20 § 1; Ord. 018-17 § 2; Ord. 005-17 § 2; Ord. 020-15 § 3).

13.04.030 Water capital facility charge – Extension of water.

(1) The water capital facility charge is designed to mitigate the impact of new demands on the existing water system and to require new users to pay their fair share of the value of the water system including, but not limited to, water supply, treatment, transmission, storage and distribution facilities. The water capital facility charge applies to new construction, changes in use, and building modifications which increase the total number of equivalent residential units (ERUs). An ERU is 180 gallons per day for nonresidential connections. Prior to connecting to the city's water system the property owner shall pay, in addition to other applicable charges, the applicable water capital facility charge.

(a) The water capital facility charge for a residential connection is based on a set fee per ERU which is set forth in POMC 13.04.025. An ERU for this purpose shall be computed based on the water meter size and shall be calculated according to the average flow factor of a displacement type meter where a three-quarter-inch meter shall have a flow factor equal to one ERU. An ERU for residential connections is one single-family dwelling unit, whether detached or attached and configured as an apartment unit, condominium unit, townhouse unit, or any other configuration.

(b) The water capital facility charge for a nonresidential connection shall be calculated based on meter size as set forth in POMC 13.04.025.

(c) Per Resolution No. 1666, the city treasurer is authorized to waive the connection fee of the water systems which do not impact the fire flow storage requirements of the city. All other fees, charges and expenses shall be paid as in accordance with this chapter. Examples of these connections are irrigation systems, fire protection systems, and relocating service lines which cross private property.

(2) If, after connection of a nonresidential service, the actual water usage has increased or the property use expanded so that there are a greater number of ERUs being used on the property than for which the water capital facility charge was paid, the property owner shall pay to the city an additional water capital facility charge based upon the new or expanded use. The additional water capital facility charge shall be based upon the charge rate in effect at the time the increase in use is requested and/or detected, whichever first occurs.

Commented [MD3]: These subsequent are not changing.....not needed?

(3) Water Capital Facility Charge – Exception. The following exception applies to the assessment of the water capital facility charge. All four elements of the below-listed requirements must be present to qualify for the exception:

- (a) A nonresidential account paid the water capital facility charge at the time the property connected to the city's water system;
- (b) Sometime after the original connection, the property owner decides to construct a new building, change the original use, or modify the original building;
- (c) After the building improvements are completed, the total water usage for the nonresidential account will be equal to or less than the usage at the time of the original connection; and
- (d) The new construction, change in use, or building modification has not resulted in an additional direct connection to the city's water system or the establishment of an additional water account.

(4) A credit against the water capital facility charge may be applied for those property owners that paid their assessments in full through a local improvement district formed by the city where such local improvement district is formed to finance the construction of any of the improvements that are a basis for calculating the value of the water capital facility charge. The credit shall be equal to that portion of the property owner's principal assessment, not including interest and penalties, which is directly applicable to the construction of the improvements that are a basis for calculating the value of the capital facility charge. The credit shall be applied at the time of payment of the water capital facility charge and shall not be used to reduce any assessments in the local improvement district.

(5) A credit against the water capital facility charge may be applied for those property owners that construct at their own expense any of the improvements that are a basis for calculating the value of the water capital facility charge or for those property owners that pay a latecomer's fee toward those same improvements. The credit shall be the smaller of the following:

- (a) That portion of the design and construction costs of the latecomer's agreement that are directly applicable to the construction of the improvements that are a basis for the value of the water capital facility charge; or
- (b) That proportionate amount of the water capital facility charge that is attributable to the water facilities either constructed by the property owner or paid through a latecomer's fee.

(6) The above provisions notwithstanding, the amount of any credit shall not exceed the amount of the water capital facility charge for the property to which the credit is being applied.

(7) At the time the water capital facility charge is paid, a water inspection fee shall be paid. The water inspection fee is set forth in POMC 13.04.025.

(8) All materials shall comply with the requirements of the city. If the city supplies any materials, the cost of these plus overhead and sales tax will be paid by the customer or property owner.

(9) If a property owner requests a credit or exemption as described above, the director of public works shall make an administrative determination regarding the applicability and amount of the credit or exemption. The director's decision may be appealed to the hearing examiner.

(10) The exceptions and credits described above shall not apply to any costs of construction incurred or payments made to the city for improvements that are a basis for the value of the capital facility charge and that were made 15 years or more prior to the date the property owner requests the exception or credit. (Ord. 020-15 § 4; Ord. 008-13 § 1; Ord. 027-11 § 2; Ord. 021-09 § 4; Ord. 013-08 § 3; Ord. 023-06 § 1; Ord. 010-05 § 4; Ord. 1897 § 4, 2003; Ord. 1799 § 4, 2000).

13.04.031 Water system extensions and improvements.

All water system extensions and/or improvements shall be reviewed, approved, and inspected by city staff or selected representatives in conjunction with the submittal of an excavation permit (Chapter 12.04 POMC), land disturbing activity permit (LDAP) and/or stormwater drainage permit (SDP) application(s) as may be required under other sections of this code prior to the starting of construction on the proposed water system improvement. Review fees for water system extensions or improvements shall be paid in addition to required application fees for the above mentioned permits. Water system extension and improvement inspection fees shall be paid prior to permit issuance. Fees associated with the construction of significant facilities shall be determined at project completion and paid prior to project acceptance. All review and inspection fees shall be charged as set forth in POMC 13.04.025. (Ord. 018-17 § 3).

13.04.033 Connection fees.

(1) Connection fees are designed to reimburse the utility for the cost required to connect the new service to the water main. The labor installation fee is a flat fee set forth in POMC 13.04.025 plus associated materials plus sales tax based on the size of the water meter for service lines less than 25 feet. This fee is charged when installed by city employees.

(2) If the water service line exceeds 25 feet, or if the proposed construction is unusually difficult, the connection fee will be based on an estimate completed by the city for the required labor and material.

(3) If the service is connected by other than city employees, the water inspection fee per meter will be charged as set forth in POMC 13.04.025. All materials shall comply with the requirements of the city. If the city supplies any materials, the cost of these, plus overhead and sales tax, will be paid by the customer. If the installation is satisfactory, the city shall set the meter if it is one inch or less in size. Larger meters shall be installed by the contractor.

(4) All new construction, residential and commercial, on property which is located within 200 feet of a water main of the city shall be required to extend the water to and across the entire frontage of their property and connect to the city water system prior to the occupancy of the building. No new wells except municipal wells shall be constructed and no expansions of existing wells, except municipal wells, shall be permitted on properties that can be served, within 200 feet of a water main of the city, or are now served by the city water system. (Ord. 020-15 § 5; Ord. 008-13 § 2; Ord. 027-11 § 3; Ord. 013-08 § 4).

13.04.035 Water main fees in lieu of assessment.

(1) Where all or a portion of the premises to be served has not been previously assessed or contributed its share towards the cost of installing a permanent main to serve such premises, or the property does not abut a water main, water service shall be provided upon payment of a water main fee as provided for in this section, in addition to the water capital facility charge set forth in POMC 13.04.030 and the connection fee set forth in POMC 13.04.033.

(2) The water main fee shall be based on the frontage of the property served, as determined by the public works director. Properties situated on corner lots abutting utility mains on two sides shall have the front footage charge computed by averaging the two sides. The fee shall be charged per front foot as set forth in POMC 13.04.025.

(3) Water main fees in lieu of assessment shall be charged on new accounts unless exempted as explained below:

- (a) The property has previously paid its share of a local water main as part of a water local improvement district and there are records to verify this;
- (b) The property has extended the local water main as required by the city and paid all costs associated with the extension;
- (c) The property has paid its equitable share of the cost of a previously installed local water main pursuant to a latecomer's agreement; or
- (d) The agreement for purchase and sale of assets of McCormick Water Company, Inc., waives the city fee in lieu of assessment for water services. These are the services within McCormick Woods, Campus Station, Kenmore Court, and McCormick 620.

(4) If a property owner requests an exemption as described above, the director of public works shall make an administrative determination regarding the applicability and amount of the exemption. The director's decision may be appealed to the hearing examiner.

(5) The exemptions described in subsections (3)(a) through (c) of this section shall not apply to any costs of construction incurred or payments made to the city for improvements that are a basis for the value of the water main fee in lieu of assessment and that were made 15 years or more prior to the date the property owner requests the exemption. (Ord. 020-15 § 6; Ord. 008-13 § 3; Ord. 027-11 § 4; Ord. 013-08 § 5).

13.04.037 Extension of water to property contiguous to the city.

Property lying within the urban growth boundary and contiguous to the Port Orchard city limits shall annex to the city as a condition of water connection. In the alternative, the city may elect to defer the annexation and require the owner to execute a utility extension agreement as described in POMC 13.04.040(11). (Ord. 013-08 § 6).

13.04.039 Payment.

All charges and fees set forth in this chapter shall be paid in full prior to any issuance of permits and the physical connection of the private service line to the water system. (Ord. 013-08 § 7).

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