## WATER SUPPLY AGREEMENT

dated as of December 30, 2021

between

CITY OF PORT TOWNSEND, as the City,

and

PORT TOWNSEND PAPER CORPORATION, as the Mill

## TABLE OF CONTENTS

1.	RECITALS	Page	2
2.	DEFINITIONS	Page	3
3.	RELATIONSHIP BETWEEN THE PARTIES	Page	7
4.	ASSETS AND OWNERSHIP	Page	7
5.	WATER SUPPLY, USE, AND QUANTITY	Page	7
6.	UNCONTROLLABLE CIRCUMSTANCES	Page	10
7.	WATER DELIVERY POINTS	Page	11
8.	QUALITY OF WATER	Page	11
9.	FINANCIAL MANAGEMENT, RATES, AND CHARGES	Page	11
10.	BILLING AND PAYMENT	Page	13
11.	METERING	Page	14
12.	TERM, MILL SHUTDOWN, AND TERMINATION	Page	14
13.	GENERAL PROVISIONS	Page	15
EX	HIBIT A – OGWS WHITE PAPERS	Page	20
EXHIBIT B – OGWS-RELATED ASSETS			
EX	HIBIT C – RATE MODEL & CAPITAL SPENDING PLAN	Page	22
EXHIBIT D – OPERATIONS AGREEMENT			
EXHIBIT E – CITY DEBT DISCLOSURE			

**WATER SUPPLY AGREEMENT**, dated as of December 30, 2021, between the City of Port Townsend ("City") and Port Townsend Paper Corporation ("Mill"). The City and Mill are each a "Party" and collectively the "Parties" to this Agreement. The Parties agree as follows.

## 1. **RECITALS**

1.1 <u>Olympic Gravity Water System History</u>. In 1927, the Mill constructed a kraft paper mill in Port Townsend. In 1928, the Parties cooperated in building a 29-mile pipeline, known as the Olympic Gravity Water System or OGWS, from the Big Quilcene River watershed to the City of Port Townsend. This water system replaced a failing Snow Creek water system. The Parties have jointly improved the system by, among other things, replacing the original wood stave pipe, installing the Little Quilcene Diversion, constructing Lords Lake reservoir, rehabilitating the Big Quilcene Diversion, and upgrading the City Lake outlet system. Today, the OGWS provides Raw Water to the Mill for industrial purposes and to the City's newly constructed water filter plant to treat water for domestic use. The OGWS provides an average daily flow of twelve (12) million gallons per day ("MGD") with a maximum daily flow of approximately sixteen (16) MGD.

1.2 <u>Cooperation</u>. Both Parties recognize that cooperation is necessary to sustain water delivery through the OGWS. In 2020, the Parties extended the lease agreement to December 31, 2021, to provide time for an analysis of the system. The analysis included, among other things, a GPS survey of the 29-mile pipeline, initial evaluation of alternative water supply, pipe condition evaluation, value engineering analysis and research concerning the 1928 steel pipe, operations assessment, capital investment analysis, environmental and planning review, and a financial analysis. The results of this analysis are included in a series of white papers that are attached to this Agreement as Exhibit A.

1.3 <u>Water Supply and Conservation</u>. Water supply is limited based on water availability in the Quilcene watershed and the capacity of the pipeline system. The City is required to implement conservation measures by the Department of Health and therefore the City anticipates low growth in water use. The Mill's water use is limited in this Agreement. Historically, the Mill has temporarily reduced water consumption based on a lack of supply during low stream flows and the requirement to maintain In-Stream Flows. Additionally, the Mill periodically must curtail water use to ensure the City can obtain enough water to meet Retail Water System demands. The impacts of climate change in the region are anticipated to exacerbate water supply challenges in the future. Given the lack of future additional water supply, the Capital Spending Plan provided in Exhibit A and the Rate Model do not include capital improvements for system expansion to accommodate growth in water use by the Mill. This Agreement allows the Mill to pursue other sources of water or implement water saving technology to reduce the impacts of water supply limitations on the Mill's operation and to withdraw from the City's water supply system if the Mill obtains an alternative source of water.

1.4 <u>Water Use Priority.</u> The Parties recognize that water supply from the Big Quilcene River watershed is beyond their control and that the City has priority use. The Parties desire to cooperatively manage the available water to minimize disruption to service recognizing water supply shortages have occurred and will occur in the future.

1.5 <u>Cost of Water.</u> This Agreement establishes a charge for water based on actual water usage. The rate is based on the cost of Operations and Maintenance, capital projects, and other expenses, and expressly excludes the City's Utility Tax as allowed by the City code. This Agreement anticipates significant capital spending on the OGWS over the term. The rate for water applies equally to the Parties based on actual water usage. Rates have been developed for the term of the Agreement, but will be updated every five (5) years. The initial rates are attached as Exhibit C. The intent of establishing rates on a five (5)-year basis is to provide for the opportunity for conservation investments to realize a return on investment within the five (5)-year period. Updates will involve adjustment of the model to equalize rates based on actual water use data, revenues, operational costs, and Capital Costs. For example, a reduction in water use by both Parties will result in an adjustment of the rates upward to ensure adequate operational funds are available to operate the system and sufficient capital funds are available for the implementation of the Capital Spending Plan.

1.6 <u>Mill and City Contributions to the OGWS.</u> The Mill and the City built the OGWS and have jointly operated, maintained, and funded capital improvements on the OGWS since 1928. The Mill will continue to operate and maintain the OGWS pursuant to this Agreement and the Operations Agreement attached as Exhibit D. The Mill's historical and ongoing contributions put it in a unique position to provide benefits to the City and its residents in their continued use of the OGWS. In recognition of the Mill's contributions to the OGWS, the City has determined it is in the best interests of the community to enter into this Agreement with the Mill.

1.7 <u>Multiple Customers</u>. This is one of a possible series of similar, non-exclusive water supply agreements that the City may enter into. Through the OGWS, the City supplies water to the City's retail customers and may, in the future, desire to provide water to others. Subject to water supply availability including the impacts on supply water pressure, if the City desires to expand the use of the OGWS to diversify the customer base and lower the cost of water, the OGWS costs will be shared by all customers based on pro rata usage. Curtailment to all customers will occur according to the drought contingency plan developed in cooperation with the Mill and in place at the time of curtailment per Section 5.2.

### 2. **DEFINITIONS**

2.1 "<u>Annual Consumption</u>" means the total water metered during the calendar year.

2.2 "<u>Average Day Demand</u>" means total water use for a year divided by the number of days a Party is operating. Average Day Demand excludes days the Mill or the City are shut down.

2.3 "<u>Big Quilcene Diversion</u>" means the location and infrastructure on the Big Quilcene River, as designated in Water Right Certificate S2\*01991C, where water is diverted into the OGWS pipeline.

2.4 "<u>Capital Costs</u>" means the costs incurred or planned for the betterment and rehabilitation of the OGWS, including, but not limited to, planning, engineering, permitting, construction, financing, administration and taxes and fees. Capital Costs are outlined by project in the Capital Spending Plan and supporting documents. Unanticipated Capital Costs may also be incurred and

will be included in the Rate Model if the costs exceed \$10,000 and provide ten (10) years or more of useful life.

2.5 "<u>Capital Spending Plan</u>" or "<u>CSP</u>" means a twenty (20)-year schedule of Capital Costs by project. The CSP is updated every five (5) years in connection with the Rate Model.

2.6 "<u>City Finance Department</u>" means the City office responsible for accounting and financial management.

2.7 "<u>City Lake</u>" means the water reservoir in the Olympic Gravity Water System located at the terminus of Grouse Lane. City Lake provides important equalizing storage for OGWS operation.

2.8 "<u>City Management Fee</u>" means overhead costs consisting of City management, finance, accounting, administrative staff, information systems and costs to support City management of the OGWS.

2.9 "<u>City Operating Costs</u>" means City costs associated directly with operating the OGWS, including cost of permits, Maintenance, Emergency Repairs, System Repairs, materials and supplies, fees, services, staff time operating and managing the OGWS, time coordinating with the Mill, Watershed Management and performing services and work for the OGWS. City Operating Costs shall exclude the cost of overhead covered by the City Management Fee and that portion of costs the City pays the Mill under the Operations Agreement attached as Exhibit D.

2.10 "<u>City Utility Tax</u>" means those taxes established by Chapter 5.84 Port Townsend Municipal Code ("PTMC") and excluded from this Agreement pursuant to Chapter 13.18 PTMC.

2.11 "<u>Consumer Price Index</u>" or "<u>CPI</u>" means the consumer price index established by the United States Department of Labor, Bureau of Labor Statistics for the Seattle – Tacoma – Bellevue Metropolitan Area for the US City average urban wage earners and clerical workers calculated from July of one (1) calendar year to June of the subsequent year.

2.12 "<u>Debt Service Costs</u>" means all costs relating to any OGWS debt, including the costs of issuing such debt, funding any necessary reserve or obtaining necessary credit enhancement, all principal of and interest on such debt, and ongoing costs of such debt (such as trustee and registrar costs, publishing costs, ongoing rating fees, and call premiums).

2.13 "<u>Delivery Point Meters</u>" when referring to the Mill means the meter serving the Mill and when referring to the City means the meter serving the City. Both meters are located near the intersection of Mill Road and South 8<sup>th</sup> Street. The meters are part of the OGWS and mark the delivery end of the system.

2.14 "<u>Emergency Repairs</u>" means any event that impacts the OGWS and requires a response that does not permit time for public bidding consistent with Chapter 39.04 RCW and City financial policies. Emergency Repairs may constitute Public Work.

2.15 "<u>Governmental Authority</u>" means any federal, state, county, municipal, or regional legislative, executive, judicial or other governmental board, agency, authority, commission, administration, court or other body, or any official thereof, having jurisdiction

2.16 "<u>In-Stream Flow</u>" means the minimum river flow to be sustained at the diversions for the Big Quilcene River or the Little Quilcene River as required by the United States Forest Service Special Use Permit or the City's Water Rights, whichever is less.

2.17 "<u>Instantaneous Demand</u>" means the discharge flow rate at any given time as measured by the Delivery Point Meters over any five (5)-minute time increment.

2.18 "<u>Little Quilcene Diversion</u>" means the location and infrastructure on the Little Quilcene River, as designated in Water Right Certificate S2\*01990BHC, where water is diverted via a pipeline into Lords Lake.

2.19 "Lords Lake" means the water reservoir located where the pipelines converge from the Big Quilcene Diversion and the Little Quilcene Diversion. Lords Lake provides water supply storage used when instream flows prevent diversion from the Big Quilcene and/or the Little Quilcene Rivers.

2.20 "<u>Maintenance</u>" means keeping facilities in good usable, operational condition through work performed on a scheduled basis, as defined by WAC 296.127.010(7)(a)(iv), and may include minor improvements.

2.21 "<u>Maximum Day Demand</u>" or "<u>MDD</u>" means the maximum amount of water used in any one (1) day period within the period of one (1) year.

2.22 "<u>Mill Shutdown</u>" means the scheduled shutdown of the Mill for major Mill maintenance and/or capital spending for Mill purposes.

2.23 "<u>Mill Operating Costs</u>" means Mill costs associated directly with operating the OGWS, including Maintenance, Emergency Repairs, System Repairs, cost of materials and supplies, fees, services, staff time operating and managing the OGWS, time coordinating with the City, and performing services and work for the OGWS.

2.24 "<u>Olympic Gravity Water System</u>" or "<u>OGWS</u>" means the water supply, storage and transmission systems consisting of the Big Quilcene Diversion, the Little Quilcene Diversion, the Lords Lake reservoir, the City Lake reservoir, and approximately twenty-nine (29) miles of steel transmission pipeline. The OGWS terminates at the pipeline bifurcation between the City and the Mill near the intersection of Mill Road and South 8<sup>th</sup> Street at the Delivery Point Meters.

2.25 "<u>Olympic Gravity Water System Fund</u>" or "<u>OGWS Fund</u>" means a fund established by the City and used for OGWS operational and capital expense accounting separate from the City's other utilities. All Raw Water sales shall be placed in this fund as revenue to pay for OGWS costs, including Operations, Maintenance, and Capital Costs in the Capital Spending Plan.

2.26 "<u>Operations</u>" means the professional service activities outlined in the scope of services in the Operations Agreement (Ex. D) associated with keeping water flowing through the system from the point of intake to the Delivery Point Meters. Operations does not include Maintenance or System Repairs.

2.27 "<u>Operations Curtailment</u>" means a reduction in the Mill's use of Raw Water under this Agreement by fifty percent (50%) or more for a period of more than one (1) year for any reason other than Uncontrollable Circumstances or because of a permanent shutdown of the Mill.

2.28 "<u>Public Work</u>" means all work on the OGWS as defined by WAC 296-127-010(7)(a).

2.29 "<u>Raw Water</u>" means untreated and unchlorinated water conveyed from the point of withdrawal to the Mill and the City Delivery Points through the OGWS. Raw Water is a source of water to the Mill for industrial purposes and the source of water feeding the City's Water Treatment Facility for production of potable water.

2.30 "<u>Rate Model</u>" means the cost-of-service model used to calculate the rates charged for Raw Water. The Rate Model calculates Raw Water rates based on revenues generated from water usage, interest earnings, bond proceeds, Capital Costs, City Operating Costs, Mill Operating Costs, City Management Fee, Debt Service Costs, applicable State and Federal taxes, and all other costs required to support the OGWS. Pursuant to Chapter 13.18 PTMC, the City Utility Tax defined in Chapter 5.84 PTMC will not be included in the Rate Model.

2.31 "<u>Retail Water System</u>" means the City's water utility system created under Chapter 13.11 PTMC. This system includes Water Rights, Water Treatment Facility, irrigation wells, distribution systems, reservoirs, fire hydrants, and other appurtenances necessary for potable and irrigation water within the City water service area as provided for in the City's Water System Plan.

2.32 "<u>System Repairs</u>" means any repairs that do not qualify as a Capital Cost. System repairs may include Emergency Repairs or other minor repairs that are not part of normal Maintenance or Operations.

2.33 "<u>Unanticipated Capital Costs</u>" means capital investments not included in the Capital Spending Plan.

2.34 "<u>Uncontrollable Circumstances</u>" means acts of sabotage, war, riots, civil disturbances, explosions, epidemics, pandemics, major weather events, earthquakes, floods, lightning, fires, power failure, watermain breaks, shortages or delays in materials, equipment or supplies necessary for Operations and Maintenance of the OGWS, issuance of a temporary restraining order or other form of injunction by a court brought by a third party that prohibits a Party from performing its obligations under this Agreement, unforeseeable failure of the OGWS, or other similar events.

2.35 "<u>Watershed Management</u>" means coordination with the other local, State, and Federal agencies to prevent or minimize threats to source water quality. Activities include watershed patrol, permit management, regulatory compliance, and environmental monitoring.

2.36 "<u>Water Rights</u>" means the City's right to use water from the Quilcene watershed under water rights record numbers S2\*01991C and S2\*01990BHC and certificate numbers 322 and 7028, respectively, and as provided for in the Department of Health approved July 2019 Water System Plan.

2.37 "<u>Water Treatment Facility</u>" means the City's water filtration plant that treats Raw Water to be delivered to the City's retail customers.

## **3. RELATIONSHIP BETWEEN THE PARTIES**

3.1 This Agreement replaces and supersedes any and all previous agreements or understandings between the Parties, including any and all lease agreements, including the most recent extension ending on December 31, 2021.

3.2 This Agreement defines how the City will supply Raw Water to the Mill. The provisions of this Agreement are not intended to create, nor shall they in any way be interpreted or construed to create, a joint venture, partnership, agency relationship, or any other similar relationship between the Parties. No Party shall have any right to obligate or bind the other Party, outside of the terms of this Agreement, in any manner whatsoever, and nothing contained in this Agreement shall give, or is intended to give, any rights of any kind to any third persons or parties.

3.3 Nothing in this Agreement shall interfere with the Parties' compliance with laws and regulations, including, but not limited to, environmental laws and permits specific to the OGWS.

3.4 The Mill will only use Raw Water for its own purposes and will not resell water.

### 4. ASSETS AND OWNERSHIP

4.1 The City and the Mill enter this Agreement with the separate assets listed in Exhibit B. Upon termination or expiration of this Agreement, each Party will retain ownership of its separate assets listed in Exhibit B and those it procures from resources independent of the OGWS Fund during the Agreement period.

4.2 The City retains ownership of the OGWS. The Parties agree that if there is any part of the OGWS located on Mill property, or if the Mill holds title to any of the rights-of-way or easements necessary to access the OGWS, the Mill, upon reasonable advance notice by the City, will work in good faith to provide the City access to those parts of the OGWS as and when necessary.

### 5. WATER SUPPLY, USE, AND QUANTITY

5.1 The City Retail Water System is the priority use of Raw Water; to that end, the Mill usage is limited. The following flow and volume limits shall apply to the Mill subject to additional limitations based on the City's ability to operate the Water Treatment Facility with adequate water pressures prescribed in this section. The Mill shall not consume water in excess of these limits without prior approval of the City. The water usage limits specified in this section will be evaluated at least once every five (5) years consistent with the Rate Model update.

#### Flow and Volume Limits

## The Mill will limit its water consumption under this Agreement to the following flow and volume limits:

- Maximum Day Demand = 13.0 MGD, subject to the City's ability to produce treated water to meet municipal water demand.
- Maximum Instantaneous Demand = 14.0 MGD or equivalent to 9,722 gallons per minute, subject to the City's ability to produce treated water to meet municipal water supply demand.
- Average Day Demand = not to exceed 11.0 MGD. This Average Day Demand water use average equates to an annual volume consumption limit of 12,322 Acre-ft.

#### Additional Temporary Flow Limits Based on the City's Need to Maintain Minimum System Pressures

The City may require the Mill to implement one or more of the following additional flow restrictions to maintain the City's priority water use. Water pressure, as measured at the inlet of the Water Treatment Facility, will be the compliance measure for the following limitations. If there is a discrepancy between flow data and pressure, pressure shall govern under the following use restrictions. The City will endeavor to minimize additional restrictions for the benefit of the Mill through management of the City's Retail Water System.

- Maximum Day Demand: If water pressure at the inlet of the Water Treatment Facility drops below 75 psi during a period of high water demand in the City Retail Water System, the Mill shall limit flows to 11.0 MGD on a daily basis until the period of high water demand in the Retail Water System has ended. The City will use reasonable best efforts to provide the Mill with at least one (1) week advanced notice of high water demand in the Retail Water System necessitating this measure.
- Maximum Instantaneous Demand: During periods of high water demand in the City Retail Water System, typically caused by extended hot weather events, the Mill shall limit Maximum Instantaneous Demand Flows to 11.5 MGD or equivalent to 7,986 gallons per minute. During these periods, the Mill shall not cause the water pressure at the inlet of the Water Treatment Facility to decrease below 55 psi. The City will use reasonable best efforts to provide the Mill with at least one (1) week advanced notice of high water demand in the Retail Water System necessitating this measure.
- Emergencies: In the event of Uncontrollable Circumstances affecting the water supply in the City's Retail Water System, the Mill may be required to reduce water usage to a Maximum Instantaneous Demand of 9.5 MGD or equivalent 6,597 gallons per minute. The Mill shall make best reasonable efforts to respond immediately to a request by the City to lower flows during an emergency.

If the Mill does not comply with the flow and volume limits in this section, the City may install an automatic flow valve, such as a back pressure sustaining valve, at the Mill Delivery Point to ensure compliance with this section. All costs for such flow restriction device shall be paid by the OGWS Fund.

The above limits were developed using data from Mill and City internal meters between June 2019 and May 2020. The Parties may adjust these figures based on more reliable data as measured by the new Delivery Point Meters to be installed per this Agreement. The Parties may also adjust these flow limits as part of OGWS capacity upgrades. OGWS capacity upgrades are not included in the Capital Spending Plan but may be added in the Capital Spending Plan with mutual agreement of the Parties.

5.2 The Parties agree to work cooperatively to reduce the risk and occurrence of drought-based water supply shortages through monitoring and efficient Operations. The Parties agree to assess water supply no less than quarterly based on watershed snowpack, rainfall, river flows, and water use as defined in more detail below. Based on the quarterly assessment, the Parties agree to work in good faith to cooperatively implement mutually beneficial additional use reduction measures. If the Parties cannot agree to implement additional water use reduction measures, the City may unilaterally limit water use for the Mill and City retail water customers to promote pro rata reductions in water customers. Conservation for the City will include providing notice to customers to conserve water. Water use reduction measures shall be evaluated based on, but not limited to, the following steps:

1. No later than May 31<sup>st</sup> of each year the Parties will mutually agree whether or not to proactively implement water use reduction measures based on snowpack and USGS Big Quilcene flow data. Snow pack as measured by Mount Craig SNOTEL and USGS Big Quilcene flow data measured from January 1 to May 31 annually is an indicator of when Lords Lake drawdown will start as determined by the above and on-the-ground field observation and other available watershed data.

2. Prior to starting Lords Lake drawdown, which is required to meet In-Stream Flows, the Parties will mutually agree whether to implement additional water use restriction measures due to predicted water shortages. In such an instance, both Parties will implement mutually beneficial measures to minimize the impact of water supply shortages. Based on recent trends as of the date of this Agreement, beginning to draw off of Lords Lake prior to August 15<sup>th</sup> is an indicator of potential water supply shortage in October and November.

3. If the Lords Lake reservoir supply is depleted to a point where the outlet tower is no longer able to supply demand and the Mill wishes to continue to utilize the remaining water in the reservoir, the Mill shall be responsible for all costs associated with utilizing that water, which costs may include the installation and operation of pumps to lift water up to the outlet tower.

4. The Mill will cease production and limit water use to that essential for health and safety when Lords Lake is empty. In this case, the City Lake reservoir shall serve as reserve solely for municipal purposes until diversions from the watershed can resume. The standard for City Lake reserve capacity is City Lake shall be at least 50% full (22'-6" or at 70 MG) on November 30<sup>th</sup>. City Lake shall not be drawn down more than the projected need by the City to achieve this standard.

5.3 If decreased water usage by the Mill results in sustained excess capacity, the City may offer other customers Raw Water and reallocate costs based on usage. Any increased costs, including Capital Costs and/or costs related to Maintenance or Operations, associated with the addition of a customer or customers will be the responsibility of the prospective customer or customers and the City. The Mill will not be responsible for those costs.

5.4 The City will provide Raw Water to the Delivery Point Meter subject to shutdowns required to perform Operations, Maintenance, System Repairs and projects in the Capital Spending Plan. To the extent feasible, the Parties agree to make repairs and improvements to the system that require shutting off the water to the Mill and City during the Mill Shutdown and during low water use periods of the year. Shutdown of the OGWS shall be minimized through coordination and planned and scheduled outages. If the OGWS is out of service or water supply is interrupted for any reason other than during the planned Mill Shutdown or low water use periods, including because of Uncontrollable Circumstances, the Mill will not be charged a higher rate for resulting lower water consumption. The City shall not be liable to the Mill or to third parties for damages, breach of this Agreement, or any other claim based on the interruption of water service or curtailment of water supply due to Uncontrollable Circumstances.

### 6. UNCONTROLLABLE CIRCUMSTANCES

### 6.1 <u>Uncontrollable Circumstances</u>.

(a) **Relief.** The Parties to this Agreement shall be excused from performing any obligation under this Agreement to the extent such failure by a Party to perform directly results from an Uncontrollable Circumstance. The Parties agree that the relief for an Uncontrollable Circumstance described in this <u>Section 6.1</u> shall apply to all affected obligations in this Agreement, except to the extent specifically provided otherwise, notwithstanding that such relief is specifically mentioned with respect to certain obligations in this Agreement but not other obligations. The occurrence of an Uncontrollable Circumstance shall not excuse or delay the performance of a Party's obligation to pay monies previously accrued and owing under this Agreement, or to perform any obligation hereunder not affected by the occurrence of the Uncontrollable Circumstance.

(b) *Notice and Mitigation*. A Party that asserts the occurrence of an Uncontrollable Circumstance shall notify the other Party by telephone or email, on or promptly after the date the Party experiencing such Uncontrollable Circumstance first knew of the occurrence thereof, followed within five (5) days by a written description of: (1) the Uncontrollable Circumstance and the cause thereof (to the extent known); and (2) the date the Uncontrollable Circumstance began, its estimated duration, the estimated time during which the performance of such Party's obligations hereunder shall be delayed, or otherwise affected. As soon as practicable after the occurrence of an Uncontrollable Circumstance, the affected Party shall also provide the other Party with a description of the steps being taken to mitigate and correct the effects of such Uncontrollable Circumstance. The affected Party shall provide prompt written notice of the cessation of such Uncontrollable Circumstance. Whenever an Uncontrollable Circumstance shall occur, the Party claiming to be adversely affected thereby shall, as promptly

as practicable, use all reasonable efforts to eliminate the cause therefor, reduce costs and resume performance under this Agreement. While the Uncontrollable Circumstance continues, the affected Party shall give notice to the other Parties, before the first day of each succeeding month, updating the information previously submitted. The Party claiming to be adversely affected by an Uncontrollable Circumstance shall bear the burden of proof, and shall furnish promptly any additional documents or other information relating to the Uncontrollable Circumstance reasonably requested by the other Party.

## 7. WATER DELIVERY POINTS

The City will meter water usage at the Delivery Point Meters. The City will install the Delivery Point Meters during the 2022 Mill Shutdown. If the Delivery Point Meters are not installed by April 1, 2022, the Parties agree to pay for Raw Water based on Average Day Demand for each day that the Mill and City are using water before the Delivery Point Meters are installed. Absent more reliable data to be provided by the Delivery Point Meters, Average Day Demand shall be determined based on the flow analysis as provided in the Operations White Paper as attached in Exhibit A. As soon as the contractors performing the work for the 2022 Mill Shutdown notify the Mill, but no later than two (2) months in advance of the shutdown, the Mill will notify the City of the dates for the 2022 Mill Shutdown. Raw Water will be unavailable for no more than a period of five (5) days for the City to complete installation of the Delivery Point Meters subject to Uncontrollable Circumstances. The installation of the Delivery Point Meters will be paid for by the OGWS Fund.

### 8. QUALITY OF WATER

8.1 <u>Standards</u>. Both Parties will use reasonable best efforts to prevent the contamination of Raw Water for their respective end use purposes.

8.2. <u>Liability for Failure to Meet Raw Water Quality Standards</u>. The Mill agrees to defend, indemnify, and hold harmless the City for damages caused by the City's failure to meet Raw Water quality standards that are a direct result of the Mill's negligence. The City agrees to defend, indemnify, and hold harmless the Mill for damages caused by the Mill's failure to meet Raw Water quality standards that are a direct result of the City's negligence.

## 9. FINANCIAL MANAGEMENT, RATES, AND CHARGES

9.1 <u>Financial Management.</u> The City will track all OGWS revenues and expenses separately from the other City utilities in the management of the OGWS Fund. The City will keep OGWS financial records separate in the OGWS Fund applying a cash basis based on a calendar year. All OGWS budgets and expenditures will be approved by the City Council consistent with this Agreement and City financial policies. For financing purposes, the City's water system (including the City's assets comprising the OGWS) and sewer system are currently combined and revenues from both systems secure the City's water and sewer debt. A table of current debt is included as Exhibit E. The City, however, is not prohibited from and may in the future separate its Raw Water utility assets, finances, and revenues from the remainder of the City's water system and sewer system for debt and other financing purposes.

9.2 <u>Cost of Raw Water.</u> The City will determine the cost of Raw Water (on a per thousandgallon basis) using the Rate Model. The rates in the Rate Model are calculated based on cost of service analysis over a twenty (20)-year period. Cost of service includes a forward projection of Operations, Maintenance, and Capital Costs. The cost of service model sets a target OGWS Fund balance necessary to fund Capital Costs according to the Capital Spending Plan and the minimum reserve balance. The Rate Model then applies a projection of water use by the Parties to establish annual volume of water use. An annual rate is calculated by taking the projected Operations and Maintenance costs plus the annual capital contribution divided by the projected water use. Exhibit C includes the initial Rate Model for the OGWS and establishes the Raw Water rates for the first five (5) years.

9.3 <u>Updates to Cost of Raw Water.</u> The City will update the Rate Model once every five (5) years to establish rates for the following five (5)-year period. Updates to the Rate Model shall take into account the OGWS Fund balance and actual revenues and expenses for the proceeding five (5)-year period. This data will inform the establishment of a projection for Operations and Maintenance costs and the level of capital sinking fund contribution to ensure the ability to pay for capital according to the updated Capital Spending Plan. The Rate Model will be updated such that any adjustment in rates will be effective January 1<sup>st</sup> of the applicable calendar year.

9.4 <u>Updates to Capital Spending Plan.</u> The City will update the Capital Spending Plan at the same time as the update to the Rate Model.

9.5 Payment of Capital Costs. The Rate Model in Exhibit C does not contemplate that the City will issue any OGWS debt in the next twenty (20) years and that any Capital Costs will be paid from Revenues received by the OGWS Fund. The Parties acknowledge that the City will not undertake any Capital Costs unless the City has available cash in the OGWS Fund or expects that it will have sufficient available cash in the OGWS Fund to pay such Capital Costs. The City will not issue debt (including issuing bonds and obtaining loans) to finance any Capital Costs unless the Parties consent to the issuance of that debt, and the Mill has provided the City with security (such as a corporate guaranty, letter of credit or cash) that the City determines is necessary to secure the debt. If the Parties agree that debt should be issued to finance any work on the OGWS, Capital Costs shall include all Debt Service Costs. If it is in the Parties' mutual interest, the Parties agree to amend this Agreement and the Operation Agreement to permit the City to issue debt that is exempt from federal income taxation. In lieu of debt, the City will fund Capital Costs using the capital sinking fund approach to build OGWS reserves to an amount sufficient to fund the Capital Costs identified in the Capital Spending Plan. The OGWS Fund shall maintain a minimum balance of \$2,000,000 to provide for Emergency Repairs.

9.6 <u>Operation and Maintenance Costs in the Rate Model (Exhibit C).</u> Operation and Maintenance costs in the Rate Model attached as Exhibit C includes all of the following:

- a. Mill Operating Costs.
- b. City Operating Costs.
- c. The City Management Fee which is in lieu of City Utility Tax in the amount of \$150,000 in 2022 and 204,000 in 2023 and escalated annually by the CPI thereafter.

d. Any applicable taxes and fees excluding taxes levied by the City such as the City Utility Tax established in Chapter 5.84 PTMC which, pursuant to this Agreement and Chapter 13.18 PTMC, will not be levied on the Mill.

9.7 <u>City Budgeting</u>. The City with input from the Mill will develop an annual budget for Operations, Maintenance, System Repair and Capital Costs by September 1<sup>st</sup> of each year for the following calendar year to be included in the City's budget approval process. The first budget under this Agreement for the period April 1, 2022 through December 31, 2022 will be adopted by the City prior to April 1, 2022 through a 2022 supplemental budget appropriation. The Rate Model will serve as the basis for budgeting and the Parties will work cooperatively in the development of the annual budgets. The Parties will also work cooperatively to justify increases in the annual budget for Operations, Maintenance, System Repair and Capital Costs above the level projected in the Rate Model. Capital Costs for the following calendar year according to the Capital Spending Plan will also be included in the City's capital budget as compared to the Rate Model and Capital Spending Plan. Actual expenditures will be considered in the update of the Rate Model every five (5) years. The following schedule outlines the approximate budgeting process timeline based on state law.

- July to August City and Mill work together to start developing a budget for the next calendar year and projections for the end of the current calendar year.
- Sept. 1 Preliminary budget for Operations and Maintenance submitted.
- Sept. 1 Preliminary budget for Capital Costs submitted.
- October 15 Final budget established for City Council review for the next calendar year and the projection for the end of the current calendar year.
- November to December Final budget adopted.

## **10. BILLING AND PAYMENT**

10.1 <u>Monthly Billing by the City</u>. The City will bill the Mill monthly for water consumed as recorded by the Delivery Point Meter. The bill will identify the volume of Raw Water delivered during the month since the last meter read at the rate in the current Rate Model. Payment by the Mill is due within thirty (30) days of the receipt of the bill.

10.2 <u>Charges for Mill Operating Costs.</u> The Mill and the City will endeavor to submit invoices monthly and no less than quarterly to the City Finance Department for services rendered to the OGWS. All invoices will include the services rendered with an itemized list of labor, materials, and equipment purchased. Reimbursement for expenses will be made by the City within forty-five (45) days of receipt of the invoice, subject to any necessary corrections to the amount billed. The Mill will request City pre-approval of expenditures outside of the adopted annual budget outlined in Section 9.7.

10.3 <u>Late Payment by the Mill</u>. If a Mill bill remains unpaid after forty-five (45) days, the City will assess interest on the delinquent amount at the rate of twelve percent (12%) per annum. If a bill remains unpaid after ninety (90) days, the City may use other remedies legally available to it.

Nothing in this Agreement relieves the Mill of its obligations to pay for water consumed and metered following a notice of termination of this Agreement.

10.4 <u>Late Payment by the City</u>. If a City bill remains unpaid after forty-five (45) days, the Mill will assess interest on the delinquent amount at the rate of twelve percent (12%) per annum. If a bill remains unpaid after ninety (90) days, the Mill may use other remedies legally available to it.

## 11. METERING

Meters and Testing. The volume of water delivered to the Mill will be measured by the 11.1 Delivery Point Meters. The Delivery Point Meters will be electromagnetic flow meters and will be owned and read monthly by the City. The City will ensure that the meters are calibrated in the factory before they are installed and will perform inspections on at least an annual basis to ensure they are performing pursuant to the manufacturer's specifications. The City will provide the Mill advance written notice at least five (5) days before any meter inspection and/or verification of functionality, including the date, time, and location of, and the right to be present for, any such inspection and/or verification of functionality. The OGWS Fund will pay the cost of conducting routine inspections and verifications of functionality as part of Operations. Either Party may request the meters be inspected or recalibrated at times outside of regularly scheduled inspections and/or verifications of functionality at that Party's sole expense. In the event of any such request, either Party may elect to have a representative witness the meter inspection and/or verifications of functionality. If an inaccuracy of more than 1.0 percent is discovered during a verification of functionality, all billings for water for both parties from the date of the preceding verification of functionality will be adjusted. The adjustment will be for the full amount in excess of 1.0 percent.

11.2 <u>Temporary Lapses in Water Meter Data</u>. If metered water use is incomplete or inaccurate for a monthly billing period, the City may bill the Parties for such period based on estimated water use. The City may estimate use based the on the Average Day Demand multiplied by the days in operation. The Mill will provide water use records in support of creating such an estimate. The City will provide the Mill documentation of the method used to estimate Mill water use for such period. The Parties will agree on the methodology used.

## 12. TERM, MILL SHUTDOWN, AND TERMINATION

12.1 <u>Term</u>. This Agreement will take effect on January 1, 2022 and remain in full force and effect until December 31, 2041, unless terminated earlier by either Party pursuant to this Section. The Parties may mutually agree to extend this Agreement for an additional period of twenty (20) years.

12.2 <u>Mill shut down and/or curtailment of water use</u>. If the Mill permanently shuts down or experiences an Operations Curtailment, the City may terminate this Agreement at its sole discretion. In the case of an Operations Curtailment, the City will continue to make available to the Mill Raw Water at the rate established at the time of the occurrence of the Operations Curtailment for a period of three (3) years or until a revised contract can be negotiated, whichever occurs first.

If the Mill shuts down without notice as required by Section 12.3, a termination fee of \$3,000,000 will apply.

12.3 <u>Notice of Termination</u>. Either Party has the right to terminate this Agreement by giving at least one (1) year written notice to the other Party. Termination fees are as follows:

12.3.1 In the case of the Mill giving notice of termination, to account for the City's need to address Operations and Maintenance of the OGWS, the following termination fees will apply:

(a) One (1)-year advance notice. In lieu of a termination fee the Mill will continue to provide Operations as outlined in the Operations Agreement for the twelve (12)-month termination period beginning upon issuance of the notice of termination.

(b) Less than one (1) year but more than six (6) months advance notice. The Mill will continue to provide Operations as outlined in the Operations Agreement for six (6) months following the date of notice of termination and a \$500,000 termination fee will apply.

(c) Less than six (6) months advance notice. A termination fee of \$1,000,000 will apply.

(d) In the event of a termination under Sections 12.3.1(a)-(c), if the City is under contract for Capital Costs in excess of \$3,000,000, then an additional termination fee of \$1,000,000 will apply.

12.3.2 In the case of the City giving notice of termination, to account for the Mill's need to address its ongoing water supply, the following termination fees will apply:

(a) One (1)-year advance notice. No termination fee will apply

(b) Less than one (1) year but more than six (6) months advance notice. The Mill will only provide Operations as outlined in the Operations Agreement for six (6) months following the date of notice of termination and a \$500,000 termination fee will apply.

(c) Less than six (6) months advance notice. Termination fee of \$1,000,000 will apply.

### **13. GENERAL PROVISIONS**

13.1 <u>Amendments.</u> Amendments to this Agreement shall be made in writing, agreed to and signed by both Parties.

13.2 <u>Conflicts</u>. To the extent there is any inconsistency between the provisions of (1) this Agreement and (2) any exhibit incorporated as part of this Agreement, the provisions of this Agreement will control.

13.3 <u>Records Inspection</u>. The Parties will maintain and make available for inspection at reasonable times all records pertaining to the OGWS. These records shall be maintained for five (5) years.

13.4 <u>Notices</u>. All notices and billing required hereunder shall be sent to the following addresses:

City City Manager Port Townsend City Hall 250 Madison Street City of Port Townsend, WA 98368

Mill Chief Financial Officer 100 Mill Road Port Townsend, WA 98368

The person and address to which the notices are to be given may be changed at any time by either Party upon written notice to the other Party. All notices given pursuant to this Agreement will be deemed given upon receipt by certified mail.

The Mill shall appoint a local point of contact for the City to work with on a day-to-day basis.

13.5 <u>Applicable Law and Venue</u>. This Agreement and all disputes arising thereunder shall be governed by Washington State Law. The venue for all court actions shall be Superior Court of Jefferson County Washington.

13.6 <u>Assignment; Survival</u>. Except as otherwise provided herein, neither Party may assign its rights or obligations under this Agreement without the express written consent of the other Party, which will not be unreasonably withheld. This Agreement shall be binding upon, and inure to the benefit of, the successors and permitted assigns of the Parties.

13.7 <u>Dispute Resolution</u>. The Parties shall seek to resolve amicably any disputes arising under this Agreement. If a dispute cannot be resolved by the Parties, any Party may invoke a formal conflict resolution process under this Section 13.8.

13.7.1 The first step in the process will be a meeting including the City Manager and Public Works Director and the Mill representatives.

13.7.2 If the Parties cannot resolve the dispute at the first step within thirty (30) days of the meeting in Section 13.8.1, or after making a reasonable effort to convene such a meeting, the second step in the process shall be mediation before a single mediator selected by mutual agreement of the Parties. If the Parties cannot agree on a mediator, either Party may apply to the presiding judge of the Jefferson County Superior Court for appointment of a mediator.

13.7.3 If the Parties cannot resolve the dispute at the second step within ninety (90) days of the appointment of the mediator, any Party may commence an action in court under this Agreement.

13.7.4 Any dispute that cannot be resolved by the Parties shall be resolved in the Jefferson County Superior Court with each Party preserving its right to trial by jury.

13.8 <u>Non-Waiver</u>. A waiver by either Party of the other Party's breach of any provision of this Agreement will not be construed as a waiver of any subsequent breach of that provision or as waiver of any other provision in this Agreement. No payment or acceptance of compensation for any period subsequent to any breach shall be deemed a waiver of any right or acceptance of the breach. When the condition to be waived is a material part of the Agreement such that its waiver would affect the essential bargains of the Parties, the waiver must be supported by consideration and take the form of an Agreement modification.

13.9 <u>No Third-Party Beneficiary</u>. The rights and obligations created by this Agreement are for the sole benefit of the Parties, their successors or assigns, and no person not a Party shall be a beneficiary, intended or otherwise, of any such rights or be entitled to enforce any of the obligations created by this Agreement.

13.10 <u>Construction</u>. This Agreement has been freely and fairly negotiated by the Parties hereto and has been reviewed and discussed by legal counsel for each of the Parties, each of whom has had the full opportunity to modify this Agreement and, therefore, the terms of this Agreement shall be construed and interpreted without any presumption or other rule requiring constructional interpretation against the Party causing the drafting of the Agreement.

13.11 <u>Captions</u>. The captions and paragraph headings contained in this Agreement are for convenience and reference purposes only and in no way define, describe, extend or limit the scope or intent of this Agreement, nor the intent of any provision hereof.

13.12 Prior Agreement Superseded; Complete Agreement. This Agreement replaces and supersedes any and all previous agreements or understandings between the Parties, including any and all lease agreement extensions, including the most recent extension ending on December 31, 2021. This Agreement contains the complete statement of the Parties' understanding with respect to the subject matter of this Agreement. There are no other representations, agreements, or understandings, oral or written, by the Parties relating to the subject matter of this Agreement that are not fully expressed in this Agreement. Each Party acknowledges and represents to the other Party that it is executing this Agreement solely in reliance upon its own judgment and knowledge and that it is not executing this Agreement based upon the representation or covenant of the other Party, or anyone acting on such Party's behalf, except as expressly stated herein. Any modifications or amendments to this Agreement shall be approved in writing by both Parties.

13.13 <u>Execution in Counterparts</u>. This Agreement may be executed in two or more counterparts, all of which, when taken together, shall constitute one and the same Agreement. Executed counterparts transmitted by facsimile or electronic means shall be binding on the Parties.

13.14 <u>Certain Representations And Warranties Of The Parties</u>. Each Party represents and warrants to the other that the execution, delivery, and performance of this Agreement have been duly approved by all required government or corporate action, and that the person or persons signing on behalf of such Party have full authority to do so.

13.15 <u>Public Records</u>. All records provided to and communications with the City shall be subject to the Public Records Act, Chapter 42.56 RCW, including exemptions under that Act. If the City

receives a request for disclosure of any of the Mill's documents or information under the Public Records Act, Chapter 42.56 RCW, the City must provide the Mill with notice and an opportunity, pursuant to RCW 42.56.520 and .540, to seek an order prohibiting the City from releasing any of the Mill's documents and information, or other appropriate action within the Mill's sole discretion. The City will provide such notice to the Mill within five (5) business days after receiving the request for disclosure and will not release the requested documents or information until after following the steps in this section. If the Mill does not seek and obtain an order prohibiting the City from releasing any of the Mill's documents or information within fourteen (14) business days of the City providing the Mill with written notice of the request for disclosure of any of the Mill's documents or information. The City shall not release the requested documents or information. The City shall not release the requested documents or information. The City shall not release the requested documents or information. The City shall not release the request for an order prohibiting the Mill's documents or information during the pendency of any ruling(s), including appellate ruling(s), on the Mill's request for an order prohibiting the City from releasing any of the Mill's documents and information, or other appropriate action to protect the Mill's documents and information.

13.16 <u>Limits on Liability</u>. The Mill agrees to defend, indemnify, and hold harmless the City from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the Mill's performance of this Agreement. The City agrees to defend, indemnify, and hold harmless the Mill for damages from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the City's performance of this Agreement. If joint, concurring, comparative or contributory fault or negligence of the Parties gives rise to the claims, injuries, damages, losses or suits for which the Parties are entitled to indemnification under this section, then any damages or losses shall be allocated between the Parties in proportion to their respective degrees of fault or negligence contributing for such damages or losses.

13.17 <u>Change in Law Regarding Water Rights</u>. If any Governmental Authority imposes or proposes to impose a change in volume or quality of water available to the OGWS than that currently allowed under the City's Water Rights, the Parties (a) reserve the right to contest and appeal the change in water rights and (b) will confer regarding the impacts of such changes on the OGWS and this Agreement.

IN WITNESS WHEREOF, the Parties hereto have each executed this Agreement as of the day and year below written.

CITY OF PORT TOWNSEND

By:

John Mauro, City Manager

Date: 12:30-21

PORT TOWNSEND PAPER CORPORATION

Amy Orr, Chief Executive Officer Date: December 30, 2021

Approved as to Form: Hardt than wood

Heidi Greenwood, City Attorney

Attest: 6 00 Q City Clerk

## EXHIBIT A – OGWS White Papers

Attached

#### Olympic Gravity Water System Final Report

November 2021

## Introduction

The City of Port Townsend and the Port Townsend Paper Mill have a partnership history of supplying water to the Quimper Peninsula, City of Port Townsend, and Paper Mill dating back to 1928. Looking forward, the City of Port Townsend (City) and Port Townsend Paper Corporation (PTPC) continue to work together cooperatively to sustain a reliable water supply for the benefit of both parties.

As a basis of the agreement, City and PTPC staff worked together to review and analyze existing technical data as well as additional new data. Staff compiled these reports in the form of technical white papers. Each report was developed and reviewed with the help of highly experienced staff. Credit for this work is attributed to the City's Water Operations Manager, Ian Jablonski; the Mill's General Manager, Kevin Scott; the Mill's lead pipeline operator, Steve Muck; and the City's Public Works Director Steve King, PE. Additionally, Jacobs Engineering was selected by the staff team in a competitive hiring process to be a resource as needed for the technical evaluation. In particular, Jacobs Engineering assisted with consideration of water supply alternatives, review of previous cost estimates, technical advice regarding pipe condition and longevity, and construction options such as slip-lining.

## **Report Overview**

As a way to ensure factual data was available for the public, decision makers, and staff, seven technical white papers break down information into manageable segments. After the white papers were reviewed by City and Mill staff, they were published on the City's Engage PT website for public consumption. This report consists of a compilation of the following white papers. Additionally, the reference materials are available by electronic format on file with the City of Port Townsend.

- 1. Assets: The assets white paper reviews the history of the system, provides an assessment of the assets of both the City and PTPC based on what is owned and what each entity brings to the table, an evaluation of what happens if the partnership ceases to exist, and an evaluation of alternative water supplies.
- 2. Stakeholders and Public Engagement: This white paper provides a framework for transparency, public engagement, and stakeholder involvement. This white paper also defines the process of final decision making for the public.
- 3. Planning and Environmental: This white paper considers whether there are future growth needs for the system, climate change, carbon footprint, and the environmental regulatory environment. This white paper also addresses conservation, and water reuse strategies for future consideration.

- 4. Operations: In this white paper, the details of operating the system are documented including costs to operate. The operations white paper also provides an overview of standard of care as well as specific details concerning operations of the key system assets.
- 5. Capital Analysis: The capital white paper is the most extensive in terms of analysis of the system component condition and review of the needs for repair and replacement. The OGWS is a capital-intensive system that is aging and thus this white paper provides a capital plan for rehabilitation and the replacement of ageing infrastructure over time.
- 6. Funding and Resources: This white paper provides an overview of a cost of water approach to funding the operational and capital needs of the OGWS. The white paper considers various funding options including debt issuance, grants, and provides the basis for a cost-of-service rate model. This white paper also performs an analysis of the burden of water costs upon retail rate payers in the City to understand the impact of a rate increase on City customers.
- 7. Legal Considerations: This white paper addresses legal considerations and how they impact the type and content of the agreement between the City and the PTPC.

The compilation of these white papers become a reference to the agreement and provide documentation for the future to provide the best possible outcome for system reliability and sustainability. These white papers also support Council decision making and are available for staff, stakeholders, and the public as a comprehensive review of the system based on knowledge, research, and data available as of the date of this report. This basis helps provide the opportunity for successful adaptative management of the system for the future.

## Table of Contents

1.	Assets	1
2.	Stakeholders and Public Engagement	10
3.	Planning and Environmental	19
4.	Operations	41
5.	Capital Analysis	59
6.	Funding and Resources	92
7.	Legal Considerations1	.04

## List of References

The following references to the white papers are bound in an electronic file available from the City of Port Townsend.

- 1. WARN Agreement
- 2. WAWARN Operational Plan
- 3. Estimated Cost of Potential, Future Desalination Water Treatment Plant, Jacobs April 13, 2021

4. January 28, 2021, *Port Townsend Paper Mill Past, Present, and Future* Presentation by General Manager, Kevin Scott

5. February 25, 2021, *Port Townsend Paper Mill Past, Present, and Future* Presentation by Water Operations Manager, Ian Jablonski

- 6. Local 2020 Presentation October 26, 2020
- 7. City Council Workshop December 14, 2020
- 8. City Council Workshop June 14, 2020
- 9. Public Comment Log
- 10. Stakeholder Notifications
- 11. Cooperative Watershed Protection Program, April 1, 1994

12. Memorandum of Understanding Between the City of Port Townsend and U.S. Department of Agriculture Forest Service Olympic Nation Forest, May 3, 1993

- 13. 2009 Special Use Permits with the US Forest Service
- 14. Climate Action Plan Port Townsend/Jefferson County, Washington November 14, 2011

- 15. Jefferson County Washington 2018 Inventory of Greenhouse Gas Emissions
- 16. City of Port Townsend 2018 ENERGY USE DATA-WATER WASTEWATER AND STORMWATER.xlsx
- 17. Shifting Snowlines and Shorelines: The Intergovernmental Panel on Climate Change's
- 18. Special Report on the Ocean and Cryosphere and Implications for Washington State (2020)
- 19. Mill Pressure and Flow Data Spreadsheets
- 20. Lords Lake Level and Diversions Multi-Year Summary 1992-2020
- 21. Olympic Gravity Water System Operating Manual (2-8-21)
- 22. Pipeline Replacement Matrix spreadsheet
- 23. OGWS Section S Wall Thickness Testing 4/22/19
- 24. OGWS Section T Wall Thickness Testing 4/19/19
- 25. Soils Analysis Re: AmTest Data email 4/13/2021
- 26. Big Quilcene River Diversion Dam Structural Condition Assessment, HDR 12/7/2016
- 27. Olympic Gravity Water System Pipeline Replacement Opinion of Cost, HDR 10/11/2016
- 28. OGWS Opinion of Cost Attachments A & B, HRD 2015
- 29. Hydraulic Analysis TM, HDR 2010
- 30. OGWS Hydraulic Grade Profile, HDR 2010
- 31. Olympic Gravity Water System Estimated Replacement Cost Draft Report, RW Beck 4/20/2000

32. Engineering Evaluation and Preliminary Cost Estimate Increased Reservoir Capacity Lords Lake CDM 3/15/2001

33. 2020 DOE Dam Safety Letter – Lords Lake

34. Technical Memorandum: Impact of Key Factors on Planning the Eventual Systematic Replacement of the OGWS Pipeline, Jacobs April 27, 2021

- 35. OGWS Capital Improvement Projects
- 36. City Current 2021 Utility Rates

37. Memo from Foster Garvey entitled "Safe Harbor Conditions for Qualified Management or Service Contracts Under Requirements for IRS Rev. Proc. 2017-13"

38. Memo from Foster Garvey entitled "Output Facility Regulations"

## Olympic Gravity Water System Assets White Paper

#### June 7, 2021

## Preface

The City of Port Townsend and the Port Townsend Paper Mill have a historical partnership of supplying water to the Quimper Peninsula, City of Port Townsend, and the Port Townsend Paper Mill dating back to 1928. The City and Port Townsend Paper Company are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System in the late 1920's, the development of an agreement between the City of Port Townsend (City) and Port Townsend Paper Company (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, eight technical white papers break down information into manageable segments. In the following specific white paper categories, the City and PTPC have worked together to develop these white papers to provide information for consideration during the negotiation of the agreement.

- 1. Assets: Understanding each entities assets and capacities that support investment decisions.
- 2. Stakeholders: The public as well as many governmental organizations may be potentially interested stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to include in planning for the future.
- 4. Operations: Operational requirements, efficiencies, cost, and as well as distinguishing between capital and ordinary maintenance is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and should be informed by a value engineering study for system reliability and to reduce costs.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiations and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the City of Port Townsend City Council and the Port Townsend Paper Mill Board of Directors.

The following white paper focuses on the assets of the system, including those held individually by the City and the Port Townsend Paper Mill, which may be relevant to development of the partnership.

## Introduction

The OGWS originating from Snow Creek, which began operation in 1905, was decaying and having difficulty supporting the water needs of the community by the mid-1920s. The Port Townsend community actively competed to be the site of the new Crown Zellerbach kraft paper mill to help revive the city's economic fortunes and renovate the water system. As part of the process the City acquired water rights on the Big and Little Quilcene Rivers and the voters approved issuing municipal bonds to pay for the construction of a dam and pipeline from the Big Quilcene River. Port Townsend has maintained ownership the OGWS facilities and water rights but leased the operation and maintenance of the source water collection and transmission system to the National Paper Products Company. In addition to lease payments, the mill and its various owners have continued to assume responsibility for the operation of the OGWS since its completion. Sections of wood stave pipeline installed in 1928 were replaced between the 1950s and 1972 with welded steel pipe. Construction of the Little Quilcene diversion and Lords Lake reservoir in 1955/1956 added a new source of supply and 500 million gallons of storage to the water system.

Since 1928, the City and Port Townsend Paper Company have been engaged in a public private partnership which included agreements for the development and construction of the system, operations, and upgrades as described above. The history of the Port Townsend Paper Mill and City of Port Townsend relationship is provided via two presentation provided through Jefferson County Historical Society and Port Townsend Public Library Speaker Series.

https://ptpubliclibrary.org/library/page/port-townsend-paper-mill-%E2%80%93-past-present-and-future.

# The Port Townsend Paper Mill – Past, Present, and Future

The Jefferson County Historical Society and the Port Townsend Public Library are teaming up with the City of Port Townsend, the Port Townsend Paper Mill, KPTZ 91.9, the Swan School, and other partners to present a suite of programming this winter all about the Mill – it's history, economic and workforce impact, recycling practices, and of course its product – paper!

See below for details on individual events.



Looking forward to the next 100 years the City and Port Townsend Paper Corporation will be continuing a cooperative relationship in some form. Public Private Partnerships have changed over the years and have different legal requirements; however, many principles are similar.

A fundamental tenon to effective public private partnerships is utilizing each partner's strength within their purpose of operation and the legal constraints for which they work within. The intent of this white paper is to determine those key areas of strength each party provides. As such, this whitepaper outlines the assets each entity brings to the partnership. Additionally, this white paper looks specifically at the asset of the system itself and poses the hypothetical situation of how the system might change if one of the parties were to end the partnership.

## System Assets

The system itself has inherent characteristics which result from the type of system developed in 1928 and expanded in subsequent years. Some of the system assets are provided below

- High water quality The source water has little in the way of natural or human caused contaminants and is generally very low in total suspended solids (TSS). Low TSS is a result of an undeveloped watershed within the Olympic National Forest and two reservoirs that provide for high residence times and settling of suspended solids. The purity of the water minimizes treatment costs for both the City and Mill.
- Water quality for paper production Water as provided through the OGWS is sufficiently clean that it does not require additional filtration for most of the mill uses. Since the elimination of the Port Townsend's City Lake chlorination system, the mill treats its process water with a low chlorine dose as a biocide.
- The OGWS is a 100% gravity transmission system with sufficient pressure to deliver raw water to
  the City and Mill without pumping. The absence of pumping results in substantial energy saving.
  Thus, the system has a very low carbon footprint in terms of daily operations. Once delivered to
  the Mill, process water is pumped through the various processes as it is recycled several times.
  Most of the City's service area is gravity fed based on the OGWS head pressure to deliver water
  through the filter plant into treated water storage reservoirs. There is one exception for a small
  pressure zone on Morgan Hill where pumping of water is required.
- Given the duration of this successful public private partnership, the system is still in good operating order nearly 100 years later.
- Forest Service Permit The necessary permissions to operate the water system on Federal property are valid until 2029. This permit is the result of a significant negotiations in past years and cooperation with the National Forest Service.
- The fact that the watershed is managed and owned by the Federal government, reduces the risk of human caused disruption to the watershed in terms of water quality impacts caused by agriculture, industry, and other development. Maintaining high quality water for domestic use is Olympic National Forest Service's stated primary resource management objective for the Port Townsend municipal watershed. Water quality can still be impacted by natural disasters, logging, and other forest management practices but the lack of development provides a fundamental layer of protection.

## Port Townsend Paper Corporation Assets

The Port Townsend Paper Corporation has a large workforce with industrial capabilities that have assisted in operating the water supply and transmission system including:

- Providing three FTEs, which include fulltime caretaker duties at City Lake and the Big Quilcene Diversion.
- Waterline crew with pipe welder, construction, and general contracting experience.

- Flexible labor in terms of caretakers living on site for quick response (15 minutes) to operating issues at City Lake or the Big Quilcene Diversion, dealing with landslides, screen cleaning, control adjustments, etc.
- Ability to respond with additional mill resources. During pipe failure or operating upsets emergency repair speed is directly tied to lost opportunity cost of paper production. The Mill can provide pipe fitters/welders as necessary for pipeline repairs. Electricians, instrument technicians, and millwrights routinely provide maintenance service for the water system including rebuilding components such as the rotating screen at the Big Quilcene Diversion.
- Long term relationship with qualified contractors for emergency or unusual work. This includes local contractors and specialty integrated mechanical and piping contractors for live leak repair.
- Experienced purchasing group for procurement and expediting of required materials.
- PTPC engineering, machine and instrumentation shops providing design services, specialty tools for construction and fabrication, and warehousing of spare parts
- Nonpublic agency with employee pay closely following prevailing wages.
- Corporate entity has the ability to raise private capital.
- Economic Impact
  - o 300 employees, \$33,000,000 in wages and benefits.
  - o Local Investment: \$146,000,000 (2016)
  - \$2,500,000/yr. local & state taxes plus income taxes

## City of Port Townsend Assets

The City of Port Townsend has a number of assets related to being a municipality and water purveyor.

- Ownership of existing water system infrastructure
- Water rights are owned by the City of Port Townsend. In Washington State, the Courts have held that Municipal Water Rights are generally protected against relinquishment for non-use. This is not the case for private enterprise which follows the "Use it or lose it" doctrine.
- Varity of heavy equipment such as backhoes and dump trucks as well as parts and tools for maintaining a water system.
- Land including timber assets

Name	Acres	Comments
Lords Lake	471.83	275 acres of commercial
		timberland
City Lake	167.17	73.42 acres of commercial
		timberland
Four Corners	19.72	Commercial timberland

Forest Land near Jacob	81.53	Commercial timberland
Miller Rd		
Various pipeline parcels		Usually 30 feet wide

- Utility strip easements and some fee simple rights of way.
- Public works crews with equipment operation and water system maintenance experience.
- WARN access for statewide support from other utility providers.
- Government bonding ability with access to low interest rates and government loans.
- Municipal operations are dedicated to longevity and stability of infrastructure.
- Community has a growing customer base.
- Public works and engineering staff with project management expertise.
- Financial and administrative expertise.
- SCADA and GIS systems enhance system operational performance.
- Ability to access grants i.e. FEMA emergency preparedness grants.

## Dissolution of Public Private Partnership – The what if hypothetical

Given the assets as currently provided in above sections of this whitepaper are generally founded on the principle that the partnership will continue, an analysis of hypothetical dissolution of the partnership is warranted. This analysis may be useful in assigning roles and responsibilities, developing investment strategies, and addressing surety in the negotiation of a new public private partnership agreement.

### City Leaves Partnership:

What if the City were to leave the partnership? This hypothetical case could result from the City pursuing an alternative water source such as desalination in lieu of investing in the reconstruction of the OGWS transmission line. This case analyzes how the Mill could continue to operate and invest in the system. The following points are important to consider:

- Water quality Water turbidity limits would only change slightly otherwise; source water quality or treatment requirements would not be impacted.
- Pipeline reliability Mill would invest to maintain current reliability. Since the Mill is more sensitive to upsets than the city, Mill use is the driver for maintaining 24/7 reliability. With the City's 6 million gallons of storage, it can rely upon this to maintain service for approximately 3 days during a transmission outage, whereas the Mill must shut down with any pipeline interruption. Shutdown results in a minimum restart period of 24 hours resulting in loss of production.
- Mill may have to manage the USFS Permit renewal if the City abandoned its ownership position of the water rights and property assets.

- Capital investments would be made as required to provide high level of reliability within the business viability operating window. Some investments include:
  - Potentially expanding Lords Lake storage.
  - Seismic improvements will be required for Lords Lake East Dam per WSDOE Dam Safety
  - Eventual replacement of transmission pipeline and diversion facilities.
- Ownership- Possible lease or transfer of system assets from City to PTPC.
- Water rights -Possible lease or transfer ownership to PTPC.
- The Mill would assume of system liability.
- The Mill could expect higher maintenance workload as the system ages.

#### PTPC Leaves Partnership:

What if the PTPC were to leave the partnership? This hypothetical question would be based on PTPC ceasing operations. A reliable and cost-effective water supply is a fundamental requirement for the operation of the Mill as the water is core to the process and thus operating the Mill with an alternative water source is highly unlikely. As described below, various options are considered which result in the answer of how the City could continue to operate and invest in the system OGWS should the PTPC leave the partnership. The following preface points are important to consider:

- Asset sizing The City would only require capacity of 3-4 MGD in the near term and 5-7 MGD in the long term unless another water intensive business were to become a customer of the City. If the pipeline was replaced with a smaller pipe, the relatively small cost savings in a smaller transmission line would potentially inhibit future industrial, commercial and wholesale developments and could limit the chances of redevelopment of the PTPC site.
- Pursuit of rate base expansion If the system were to be maintained, additional customers are likely to be necessary to support system operation and capital investments, which may include a partnership with the Jefferson County PUD to serve the Tri-area with wholesale water.
- Significantly reduced water consumption may lead to stagnation and water quality issues in the lake reservoirs.
- The need for system reliability between watershed and City Lake is reduced as storage capacity in City Lake is sufficient for several months of City only operation.
- System reliability between City Lake and the Water Treatment Facility remains critical as this link is the sole source of supply for the City. Treated water storage in town requires that the transmission line outage be limited to only a few days otherwise customers will be out of water.
- Water rights preservation Municipal water rights are retained even though they may not be fully exercised. This leaves open the opportunity to attract other business development and would possibly support the redevelopment of the Paper Mill site should it become unviable as a mill.
- Prioritize of investments would become different raising the following questions:
  - Does the City need Lords Lake?
  - Does the City need both diversions?
  - Could 9 miles of pipeline and Big Quilcene Diversion be abandoned in favor of the Little Quilcene Diversion and City Lake operational Storage?
  - Would slip lining be a viable option on some pipeline sections?
  - Would investments be warranted to automate operations and eliminate on-site residences at City lake and the Big Quilcene diversion given City employment structures?

- Would it be appropriate to focus on prevention of catastrophic failures which the City could not afford to fix or would be beyond the City's capacity to raise sufficient capital for repairs or replacement?
- How could the City focus on upgrading section of pipeline between City Lake and Water Treatment Facility?
- Would the City be able to secure grant assistance without the benefit of supporting a large employment base such as the Mill?
- Are there alternative water sources that would sustain the City at a more affordable rate?

#### **Options Considered:**

Jacobs Engineering was hired to assist the City and the PTPC in various technical analyses. The following four options were explored for the what if scenario of the PTPC leaving the partnership. These options also reflect information provided in the Planning and Environmental White Paper in terms of system growth needs.

#### Scaled Back OGWS

Municipal water demand could be met by the utilization of a scaled back Olympic Gravity Water System consisting of the Little Quilcene diversion combined with Lords Lake and/or City Lake reservoirs. With a water right for 6.179 mgd, which is available most of the year, and combined reservoir storage of 640 million gallons the system would be capable of supplying a fully built out community minus the large industrial demand. This reduced system would eliminate maintenance requirements for about a third of the transmission pipeline and one diversion. In this option, the City could temporarily shut down the Big Quilcene Diversion and the pipeline between the diversion and Lords Lake. This temporary shutdown would reduce O&M costs and the City would forego replacement of the pipeline. This would offer significant cost reductions until increased demand resumed. It would be recommended to put the system into a temporary hold pattern and continue to maintain permits. A key consideration is that one of the benefits of the industrial demand is the rapid turnover of the water stored in the lake reservoirs. Stagnant water from increasing the reservoir detention time can result in water quality problems. Additional pipeline modifications may have to be made to allow Little Quilcene diversions to bypass Lords Lake. Lords Lake may experience limited use in this scenario.

#### Wells

Groundwater recharge in the Port Townsend vicinity is limited by available precipitation (1981-2010 average 19.03 in/yr). Recharge within the Port Townsend area is derived entirely from rainfall, which was estimated by Pacific Groundwater Group at around 7 in/yr. this recharge rate amounts to an average annual groundwater input of 4.5 cfs (2,020 gpm). Capturing the theoretical recharge rate is not possible and because groundwater elevations are close to MSL, over pumping would lead to saltwater intrusion into the aquifer. Any groundwater system would likely consist of numerous well fields but would only be able to supply a portion of the municipal demand and would likely require treatment for iron, manganese and other potential contaminates. The best opportunity for use of wells is to augment the supply for irrigation purposes as is the case with the development of the Golf Course Well. The cost to complete one well for the golf course irrigation will be in \$100,000-200,000 range and only produce a maximum of 150 gpm. Ultimately, use of groundwater is not a viable option to supply water demands for the City of Port Townsend's water service area, even without the industrial demand of the PTPC.

#### Reverse Osmosis

Treating seawater using a reverse-osmosis (RO) desalination process is the currently the only technically feasible alternative to the City's gravity water system. Jacobs Engineering provided a conceptual level estimated capital cost for a 2.5 mgd desalination water treatment facility is \$113,000,000. This estimate could potentially be reduced by siting the facility closer to the coastline; however, the difference in cost would not be substantially different. Estimated annual operating and maintenance costs for a desalination water treatment facility are typically very high, primarily due to the power requirements along with significant chemical cleaning and maintenance costs. The estimated annual O&M cost for this desalination facility is approximately \$4.8 million in 2021 dollars. Combining the capital costs and these maintenance costs, desalination is not a viable option for water supply from a financial standpoint.

#### Water Reuse

Water reclamation is one way to improve water use efficiency by utilizing treated wastewater for some water supply needs. Reclaimed water is effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for a beneficial use. The 2019 Water System Plan estimated the cost to produce reclaimed water for non-direct use such as irrigation at \$0.04 per gallon. Whereas the current utility billing rate for residential water use is \$0.003 per gallon. Treating water to a direct potable reuse standard is substantially higher. A municipal water system is not a closed loop system and, even if the City was utilizing reclaimed water, there would have to be an alternate supply of water to make up for that portion not captured in the reclamation process. The use of reclaimed water is almost certainly a method of water use efficiency that will be more widely deployed in the future as cost parity is reached. The beneficial use of reclaimed water is numerous as described in the Planning and Environmental white paper. However, not all of these uses do not result in the ability to use a different water source for the City of Port Townsend. These uses likely would be for irrigation and other/or environmental benefits.

The following table provides a relative comparison of the various supply options in the case of a system that is not needed to provide high volumes of industrial water. The following table illustrates the challenge of an alternative system.

Summary of Supply Alternatives for City of Port Townsend if No Longer Serving PTPC							
Supply Alternatives	Permitting Certainty	System Complexity	Risk of Insufficient Supply	Capital Cost	Can Capital Costs be Phased?	O&M Cost	Potential for Fatal Flaw
Stand-Alone Supply Alternatives							
Continued use of OGWS	Good	Medium	Low	High	Yes	Medium	Low
Modified Use of OGWS <sup>1</sup>	Good	Medium	Low	High	Yes	Medium	Medium
Desalination of Seawater	Poor	High	Low	Highest	No	Highest	Medium
Development of Groundwater	Poor	Medium	High	Medium	No	Medium	High
Supply Alternatives Plus Reuse of WWTP Effluent							
Continued use of OGWS plus WWTP Reuse	Medium	High	Low	High	Yes	High	Low
Modified Use of OGWS plus WWTP Reuse	Medium	High	Low	High	Yes	High	Medium
Desalination of Seawater plus WWTP Reuse	Poor	Highest	Low	Highest	No	Highest	Medium
Development of Groundwater plus WWTP Reuse	Poor	High	High	High	No	High	High

<sup>1</sup> Modified use of the OGWS would include expansion of the customer base by supplying the Jefferson PUD Quimper Water System and removal of some of the OGWS facilities from continued use. The OGWS facilities that could be removed (pending further analysis), include: Lords Lake and the Big Quilcene intake and pipeline. This could reduce the total cost of the project.

## Conclusion

The information provided in this white paper illustrates the importance of a partnership. The history of the development of the OGWS was founded on the struggles of the City to maintain and develop a reliable and adequate water supply. This fundamental problem resulted in the development of the 1928 OGWS. The outcome of this analysis provides the backing for the confidence of the City to continue to invest in the OGWS despite the any possibility of the loss of the PTPC as a partner. This white paper also lays the groundwork for placing each entity in their position of core competency to facilitate an effective partnership for the short and long term.

## References

WARN Agreement

WAWARN Operational Plan

2021 Jacob's Engineering Analysis of Reverse Osmosis

*Port Townsend Paper Mill Past, Present, and Future Speaker Series* Provided by the Jefferson County Historical Society and Port Townsend Public Library

- January 28, 2021, *Port Townsend Paper Mill Past, Present, and Future* Presentation by General Manager, Kevin Scott
- February 25, 2021, *Port Townsend Paper Mill Past, Present, and Future* Presentation by Water Operations Manager, Ian Jablonski

This page intentionally left blank.

## Olympic Gravity Water System Stakeholder and Public Engagement White Paper

August 23, 2021

## Preface

The City of Port Townsend and the Port Townsend Paper Mill have a historical partnership of supplying water to the Quimper Peninsula, City of Port Townsend, and the Port Townsend Paper Mill dating back to 1928. The City and Port Townsend Paper Company are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System in the late 1920's, the development of an agreement between the City of Port Townsend (City) and Port Townsend Paper Company (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, eight technical white papers topic areas break down information into manageable segments. In the following specific white paper categories, the City and PTPC have worked together to develop these white papers for potential items to consider during the negotiation of the agreement.

- 1. Assets: Understanding each entities assets and capacities that support investment.
- 2. Stakeholders: The public, private property owners, and many agencies are stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to plan for and include planning for the future.
- 4. Operations: Operational requirements, efficiencies and goals, cost, and reliability as well as determining the line between capital and ordinary wear and tear is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and need to be informed by a value engineering study for system reliability.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiations and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the City of Port Townsend City Council and the Port Townsend Paper Mill Board of Directors.

The following white paper addresses how the City is engaging the public and providing for a transparent process of negotiating a public private partnership between the City and the Port Townsend Paper Company.
# Introduction

As with all public work, engagement and keeping the public informed is a key component to decision making. The renegotiation of a long standing public private partnership is important for the future of the City's water supply. Many specific stakeholders including individuals and organizations are interested in this topic as well. While the process of negotiation is not held in a public forum, the final decision made by the City Council will be made in a public meeting. It is the goal of the City to provide technical information to ensure factual data is available for the public's consumption. The City also desires to obtain public comment and feedback in advance of the negotiation in order to inform the agreement. It is through the City's Comprehensive Plan, public engagement, and City Council feedback, the values of Port Townsend rise to the surface and impact the agreement.

This public engagement white paper addresses these goals through the following five categories.

- 1. Engaging the Public: Defines the approach to sharing information and reaching out to the public at large.
- 2. Stakeholders: Identifies a list of stakeholders and the positions they have.
- 3. Transparency: Defines the approach to sharing technical information and transparency
- 4. Documentation: Provides an on-going record to document public and stakeholder engagement. This section summarizes themes around the feedback received.
- 5. Final Decision Making: Defines the process for decision making for the City and the PTPC and consideration stakeholder and public concerns, support, and comments.

## Engaging the Public

Methods for engaging the public include.

- Engage PT
  - o Website
  - Farmer's Market
  - Website and Facebook
  - City Newsletters
- Public Council Meetings
  - Workshop December 14, 2020
  - Workshop Review technical details June 14, 2021
  - Workshop Review draft agreement (Fall 2021.)
  - Council Action resolution for approval of agreement (October), optional 2<sup>nd</sup> reading.
- Library/Jefferson County Historical Society
  - 2021 Speaker Series Jan. 28<sup>th</sup> presentation by Kevin Scott, General Manager of PTPC and Feb. 25<sup>th</sup>, Ian Jablonski, Water Resources Operations Manager, City of Port Townsend.
    - <u>https://ptpubliclibrary.org/library/page/port-townsend-paper-mill-</u> %E2%80%93-past-present-and-future
- Speaking Events
  - Radio (KPTZ)
  - o Local 2020
  - Chamber of Commerce

- Jamestown S'Klallam Tribal Council
- Newspaper and social media
  - Facebook
  - PT Leader and Peninsula Daily News Articles
- Stakeholder notifications through letters/email.

## Stakeholders

Stakeholders not only include the public at large, but also include specific agencies, organizations, and interest groups.

Stakeholder list identification and direct outreach is up to date as of August 2021. These organizations will be contacted to ask for their desired involvement through a participation request letter mailed to each organization.

- Jamestown S'Klallam Tribe
- Port Gamble S'Klallam Tribe
- Lower Elwha Klallam Tribe
- Jefferson County PUD (Coinciding right of ways, possible wholesale water purchaser for Tri-Area)
- Local 2020
- North Olympic Development Council
- Hood Canal Coordinating Council
- Sierra Club
- PT Air Watchers
- Jefferson County (Olympic Discovery Trail, right of way, permitting, and general health of region)
- Peninsula Trails Coalition
- North Olympic Salmon Coalition
- Rayonier Timber (Former Pope Resources Landowner for rights of way)
- Washington Department of Health (Regulatory agency for water supply)
- Washington Department of Ecology (water rights, instream flows, dam safety, permitting)
- Washington Department of Fish and Wildlife (instream flows and fisheries)
- US Fish and Wildlife Service (junior water right holder, downstream hatchery)
- National Marine Fisheries Service
- US Forest Service (Watershed management and use permit)
- Washington Department of Natural Resources (Landowner and permitting)
- Congressman Derek Kilmer

## Transparency

The process of negotiating a new public private partnership must consider a multitude of factors. The success of the partnership relies critically on these factors being based on fact. Initial public feedback indicates that there are number of concerns as well as misunderstandings about the water system amongst both City and County residents. In order to help inform the negotiation of the partnership agreement, a series of technical papers (white papers) are being developed. These white papers provide factual context and factors to consider in an agreement. Once final draft white papers have been developed, they will be posted on-line through the City's Engage PT website.

At the end of the process, these whitepapers will be assembled into a comprehensive report. It is important to recognize that these white papers are living documents and some of which will be updated continually throughout the process.

# Documenting Public Engagement

This white paper provides an overview of central themes around the water supply system and the City -Mill public private partnership. These themes are taken from the aggregate of public comments, outreach efforts, and stakeholder input. A list of events and the comments are included in the appendices. The following themes have arisen through the process:

- 1. Concern of climate change and water supply.
- 2. Conservation: Setting forth an agreement that incentives reduction in water use.
- 3. Impact of water withdrawals in the Quilcene Watersheds.
- 4. Support for living wage jobs.
- 5. Concern over mill emissions and the impact to the Community.
- 6. Concern over ensuring fair share of costs are paid by each party.
- 7. Preserving high quality drinking water: Compared to local well water.
- 8. Cost of providing the water.
- 9. Maintaining City control of water rights and infrastructure.
- 10.

## **Final Decision Making**

The final public private partnership agreement will be approved by the Board of the Port Townsend Paper Company and the Port Townsend City Council. The City Council will decide upon this agreement as well as any financial impacts in open public meetings. While negotiation of the agreement will not be held in a public forum, all materials supporting the development of the agreement will be provided in the form of white papers, presentations, and agenda reports, which will be available to the public. Once a final agreement is negotiated, the PTPC requires approximately one week for board approval while the City approval process is expected to include a workshop and two public readings, which would take a month to complete.

## References

- A. Presentations
  - Local 2020 Presentation October 26, 2020
  - City Council Workshop December 14, 2020
  - City of PT Library and Jefferson Co. Historical Society PTPM Past, Present, and Future
    - January 28, 2021 Presentation by General Manager, Kevin Scott
    - February 25, 2021 Presentation by Water Resources Operations Manager, Ian Jablonski
    - Links: <u>https://ptpubliclibrary.org/library/page/port-townsend-paper-mill-</u> %E2%80%93-past-present-and-future.
  - City Council Workshop June 14, 2020
- B. Public Comment Log

Comment	Date	From	Organization	email	Comment via	Comment
comment	Date		organization	eman	Comment via	Dublis is aburnent is water menorement encourant is suitised. These are likely encourturities
						Public involvement in water management agreement is critical. There are likely opportunities
1	7/10/2020	Peter Guerrero		studio374photography@gmail.com	email	for the mill to achieve further water reductions. Climate change likely to result in reduced
						snowpack.
2	8/17/2020	Kevin Considine				PUD well water is not as good as OGWS water.
		Ellio Mothowo 8				Mill is aware that kraft paper stinks but making good progress toward improvements such
3	10/7/2020	Carl Vauranteers of		cyoungmann@gmail.com	Engage PT	as cogeneration and biochar. Mill is trying to be the best it can. Major recycler of old
		Carr roungmann				cardboard. Mill is good partner
						Current payment arrangement unduly burdens all other businesses and ratepayers as well as
4	10/26/2020	Gretchen Brewers	PT Air Watchers	ptawdirector@zoho.com	email	the City. New lease should be written with a fee structure that is equitable, encourages
						resource conservation and reflects the actual value of the water.
						Questions that need to be answered: is the mill a net economic gain to this community and
5	10/26/2020	Niles Powell		4meagain99@gmail.com	email	do the people who live here want the mill? Mill use of water pollution has penative effect on
°	10/20/2020	Niles I Owell		Hiteagan 55 (a ginan com	Cirian	community and eco-system
6	11/7/2020	Kathu Buan		kathura76@mas.com	amail	The mill stench is a 10+, not under control as promised
0	11/1/2020	Natity Nyati		katiyin olemac.com	eman	Increasing monthly normante to replace pipeline is going to uppet residents. Mill needs to
7	1/17/0001	Free Deet		fra - 35 4 @ ii		increasing monthly payments to replace pipeline is going to upset residents. Will needs to
1	1/1//2021	Fran Post		Tran254@gmail.com	email	significantly increase their financial contribution. Mill contract needs strong incentives for
						them to conserve water.
8	6/29/2021	Scott Freeman		sfreeman991@gmail.com	Engage PT	Supports PTPC need for water but would like to build in incentives for use reduction by mill.
	0/20/2021				Lingugo I I	Use water savings to support family farms and increase flows for salmon runs.
						Finding ways to incentivize water conservation is key to ensuring adequate water for all in a
						water scarce future. Historically the mill has been an important partner in providing for and
						maintaining the City's water infrastructure but the existing arrangement represents a subsidy
9	7/1/2021	Peter Guerrero	Sierra Club	peter.guerrer@washington.sierraclub.org	email	by all City residents and the City needs to negocitate a better deal going forward. Pricing and
						credit incentives could encourage mill to undertake upgrades. Residents and businesses
						could be given credit on water bills for water savings improvements that result in
						documented reduction in monthly water use.
						Mill contract should be made in the best interest of the local citizenry. Leases have
						disperpentionately placed responsibility for maintenance and system improvements onto
						the City. Future size of evolution and the city for the mill Millie exception and excitate and
						the City. Extra size of system solely benefits the million will solel and material the material termination of the material size of the
10	7/18/2021	Niles Powell		4meagain99@gmail.com	Engage PT	contribution is a miniscule fraction of the value of the water and water services they receive.
						No incentives existed in leases for water conservation, habitat protection or wastewater
						reduction. These issues hopefully addressed in new lease so they are adequate and
						enforceable. Mill financial contributions do not take into consideration cost of damgage to
						soil, air, water and marine eco-system.
						Would expansion plans for Lords Lake Reservoir provide sufficient water for both city and
						industrial purposes with forecast population increase and hot, dry summers predicted with
						alimate shange? It would be interesting to forecast commercial and residential irrigation
11	7/30/2021	Cindy Jayne	Local 20/20 Climate Prep group	cindyj911@yahoo.com	email	climate change? It would be interesting to forecast commercial and residential imigation
						consumption with predicted growth and climate change, would sea level rise drive demand
						for more water and now would that impact forecasted water use. High greenhouse gas
						scenario should also be used for planing purposes. Some citations need to be corrected.
						A new lease should be written with a fee structure that is equitable to all other businesses
						and water customers: that encourages resource conservation: that reflects the actual value
						of the water and the increased infrastructure that are needed beyond the City's requirements
10	7/21/2021	Kathu Buan		kathurn76@mac.com	in	to accommodate the mill I do not want my taxes to pay for the mill's water. I want my taxes
12	1131/2021	Ralliy Ryall		Kathymyol@mac.com	eman	to accommodate the mill. Too not want my taxes to pay for the mill swater. I want my taxes
						to pay for my water and other vital infrastructure to mitigate climate change impacts and to
						keep us sustainable. This would include addressing grey water use, and other pieces to
						provide and protect clean water to the city.
						Concern regarding health effects of emissions plume. It seems to me that residents must be
						essentially subsidizing the cost of millions of gallons water for a company that regularly
1						saturates the town in toxic fumes and outputs toxic effluent into the bay. The town of Port
						Townsend must use the water contract as an ongoing bargaining chip that is regularly
13	7/31/2021	Jess Hoffmann		jesse@jhdesignsolutions.com	email	renegotiated because it's the only leverage the community has to influence real change in
1						their operations. The city has the opportunity to assume that advantage and pass it on to
						the citizens of Port Townsend while ensuring that every part of the community. including the
						industrial sector, aligns to a vision that protects the health of the environment and
						generations of citizens moving forward
r						
						Maintain and protect the Big Quilcene water right under the watershed management
						agreement with the U.S. Forest Service. Maintain City control over the Port Townsend water
						system and supply in the context of any private partnership agreement to preclude transfer.
14	7/31/2021	Joe Breskin	Olympic Environmental Council	joe.breskin@gmail.com	Engage PT	Maintain all water supply for domestic use within the WRIA and not beyond to help provide
						stable funding for the OGWS maintenance. City should plan for enevitable emergence of
						aditional wholesale water customers and prefare the Mill to fine a way to make a lot more
						paper using a lot less water. Prevent privatization of the City's water utility and water export.
						A set of the
L.						Another alternative is a moratorium on construction in Port Townsend. It would be a
15	8/14/2021	Hai Henson		nainenson47@gmail.com	email	mancial disaster to force the Ppaper Mill to leave the area due to water. Define what is the

#### C. Stakeholder Notifications (Letter issued June 4, 2021)

The City of Port Townsend places a high value on coordinating with stakeholders and the public prior to making substantial decisions. The City is currently in the process of negotiating a renewal of the public private partnership with the Port Townsend Paper Mill for sustainable and reliable water delivery for the next 40 plus years. The partnership began in 1928 with the completion of construction of a 29 mile pipeline between the Olympic Mountains (Big Quilcene River) and the City. Today, the water transmission infrastructure is aging and the current partnership agreement between the City and the Paper Mill is in need of updating. This letter is intended to provide notification of this effort and to share historical and technical information concerning the Olympic Gravity Water System (OGWS) and future plans to a sustain reliable water supply for the future.

The City and Paper Mill have been researching and collecting data over the past year. This information is integrated into a series of technical documents (white papers). The following white papers are available for download on the City's Engage PT webpage at <a href="https://www.cityofpt.us/engagept">www.cityofpt.us/engagept</a> under infrastructure or directly at <a href="https://cityofpt.us/engagept/page/water-supply-mill-agreement">https://cityofpt.us/engagept/page/water-supply-mill-agreement</a>. The intent of this research and analysis is understand the future water system needs for the City of Port Townsend and Port Townsend Paper Mill.

The City invites review of the information posted on the website and requests feedback as follows:

1. As a stakeholder, would you or your agency like to be kept informed as the process continues?

2. Would you or your agency like to meet with City Staff to discuss this effort in further detail?

3. Are there stakeholders that you would recommend contacting not included in the contact list attached?

4. Please feel free to respond with any written comments by July 14, 2021. The City values your feedback and will consider all comments received.

The next steps for the City involves the process of negotiating a public private partnership with the Port Townsend Paper Mill based on the best data available and given the mutual goals of sustaining a water supply for both parties. The City anticipates completing the process in the fall of 2021.

Contact	Letter Sent Date	Date Response Received	No Response	Kept Notified	Request Mtg	Other
Jamestown S'Klallam Tribe	6/4/21					
Port Gamble S'Klallam Tribe	6/4/21					
Lower Elwha Klallam Tribe	6/4/21					
Jefferson County PUD (Coinciding right of ways, possible partner)	6/4/21					
Hood Canal Coordinating Council	6/4/21					
Local 2020	6/4/21	7/30/21				
Sierra Club	6/4/21	7/1/21				

PT Air Watchers	6/4/21	10/25/20		
Jefferson County (ODT right of way, permitting, and general health of region)	6/4/21			
National Marine Fisheries Service	6/4/21			
North Olympic Development Council	6/4/21			
North Olympic Salmon Coalition	6/4/21			
Olympic Environmental Council	6/4/21	7/31/21		
Peninsula Trails Coalition	6/4/21			
Rayonier Timber (Former Pope Resources)	6/4/21			
US Fish and Wildlife Service (junior water right holder, downstream hatchery)	6/4/21			
US Forest Service (Watershed management and use permit)	6/4/21			
Washington Department of Health (domestic water supply)	6/4/21			
Washington Department of Ecology (water rights, instream flows, dam safety)	6/4/21			
Washington Department of Fish and	6/4/21			

Wildlife (instream flows and fisheries)				
Washington Department of Natural Resources (Landowner and permitting)	6/4/21			
Congressman Kilmer	6/4/21			

#### D. Stakeholder Meeting Summaries

• Local 2020 Zoom Presentation - October 26, 2020

Cindy Jayne addressed impacts of climate change on weather patterns and precipitation. The City illustrated stress test that resulted from 2015 low snowpack year.

• PT – Air Watchers – November 6, 2020

Meeting with Gretchen Brewer and Tamar Lowell

Concern was shared over payment for water to ensure that the PTPC was paying their fair share. Information was shared concerning history and water use.

• USFS – Meeting on January 12, 2021.

Notified of negotiation and process. No specific comments. USFS has reduced resources and has limited resources to address specific watershed requests around road closures, target shooting, wood stealing, and security.

• Meeting with Jefferson County – Feb. 3, 2021

Ian and Steve King met with Monte Reinders, John Fleming, and Eric Kuzma to discuss Olympic Discovery Trail options around City Lake. The purpose for the meeting was to look for options for ODT trail alignment. Follow up meeting on site expected.

• Meeting with Jefferson County – Feb 13.

Steve King met with John Fleming on site to review various alternatives for routing the ODT that would also work for the pipeline. The preferred alignment is to follow the power lines to the base of the hill, or route down Anderson Lake Road to the spur powerline alignment where there is an existing roadbed and concrete box culvert crossing Woodman Gulch.

# Olympic Gravity Water System (OGWS) Planning and Environmental White Paper August 17, 2021

# Preface

The City of Port Townsend and the Port Townsend Paper Mill have a historical partnership of supplying water to the Quimper Peninsula, City of Port Townsend, and the Port Townsend Paper Mill dating back to 1928. The City and Port Townsend Paper Company are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System in the late 1920's, the development of an agreement between the City of Port Townsend (City) and Port Townsend Paper Company (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, eight technical white papers break down information into manageable segments. In the following specific white paper categories, the City and PTPC have worked together to develop these white papers to provide information for consideration during the negotiation of the agreement.

- 1. Assets: Understanding each entities assets and capacities that support investment.
- 2. Stakeholders: The public as well as many governmental organizations may be potentially interested stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to plan for and include in planning for the future.
- 4. Operations: Operational requirements, efficiencies, cost, and reliability as well as distinguishing between capital and ordinary maintenance is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and should be informed by a value engineering study for system reliability and to reduce costs.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiations and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the City of Port Townsend City Council and the Port Townsend Paper Mill Board of Directors.

The following white paper addresses environmental and planning considerations for the Olympic Gravity Water System looking forward for the next 20 to 40 years with the recognition that investments will be made with 100 years in mind.

# Introduction

Port Townsend is located in the northern portion of the Quimper Peninsula, an area with no perennial streams and an average rainfall of less than approximately 20 inches per year. Port Townsend's water system evolved from a series of springs and wells to a mountain stream gravity fed water system in 1905. Construction of the National Paper Products Company paper mill beginning in 1927 led to the development of additional water rights on the Big and Little Quilcene Rivers, construction of two diversions, two reservoirs, and 30 miles of transmission pipeline to supply the water demand.

Approximately 10 to 14 million gallons per day (mgd) is transferred from the Quilcene watersheds to the northeast corner of the Quimper Peninsula. The gravity-operated water transmission system delivers water to most customers without pumping, minimizing energy consumption. After use, treated wastewater from the City of Port Townsend is discharged to the Straits of Juan de Fuca and treated mill effluent is discharged to Port Townsend Bay.

As with every source of water for human use, environmental impacts are an important to consider when developing a course of action for the future. The environmental considerations addressed in this white paper include the following:

- 1. The legal and regulatory framework defining environmental compliance requirements to comply with the laws of the United States, State, County, and City of Port Townsend.
- 2. Climate Change The impacts of climate change to water supply and sea level rise.
- 3. Carbon footprint of the system.
- 4. A water supply analysis with projections for future demands.
- 5. A Conservation analysis examining planned conservation measures as well as conservation opportunities.
- 6. Water Re-use analysis examining opportunities and challenges associated with developing a water re-use system.
- 7. Other Environmental Considerations are shared.

The intent of this whitepaper is to document and share all of the environmental considerations considered with this agreement in pursuit of a sustainable water supply for the future. Environmental considerations such as Mill odors and emissions, which are regulated by other agencies are not addressed in this paper.

# Legal and Regulatory Framework

A number of key environmental and regulatory laws provide overarching guidance and rules for the OGWS to operate within. The Clean Water Act provides the primary guidance to the Forest Service's water quality protection programs as well as wastewater discharge. The City of Port Townsend source water protection program is guided by the Safe Drinking Water Act. Regulations to implement these laws have been promulgated by the Environmental Protection Agency (EPA), and delegated to state agencies to administer. In the state of Washington, the Clean Water Act was delegated to Department of Ecology (DOE) and the Safe Drinking Water Act was delegated to Department of Health (DOH). Other laws also are also part of the City's purview to follow such as the Endangered Species Act and regulations specific to Washington State and Jefferson County. These laws and rules become pertinent

depending on the activities. As an example, construction activity requires securing a number of permits and approvals, while operations involved programmatic compliance with laws and permits.

### Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972. Under the CWA, EPA has implemented pollution control programs such as setting wastewater discharge standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters without a valid permit.

In an effort to implement the Clean Water Act, EPA advised the USFS to cooperate with state agencies and municipalities in the development of municipal watershed management plans. These plans allow the Forest Service, the affected municipalities, and state agencies responsible for public water supply standards to assess the impact of proposed management activities on the watershed resources, and to provide means for the Forest Service, municipality and state regulator to cooperatively monitor the watershed.

### Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires a number of actions to protect drinking water and its sources—rivers, lakes, springs, and ground water. SDWA authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. EPA, states, and water systems then work together to make sure that these standards are met.

Utilities are further required to implement watershed control programs in order to protect the source of their water supply from contamination. These programs are based on land ownership or written agreements to insure control of activities within the municipal watershed.

#### Source Water Protection Program

Source water protection is the primary way to reduce the risk of contamination or decline in production. In most circumstances source water protection requires a coordinated effort of regulatory agencies, landowners, and the public to achieve protection. Droughts, contamination, climate change, growth demands, and limited allocation of water rights all emphasize the need to be proactive about protecting source water quality and quantity to protect public health.

The state Department of Health Office of Drinking Water (ODW) has been assigned primacy for the federal drinking water program in Washington State. Planning requirements (WAC 246-290) require all Group A systems using surface water as a source of supply to develop watershed control programs.

The mountain watersheds which supply the Olympic Gravity Water System (OGWS) with high quality surface water are located on public owned land, over 95% of which is managed by the United States Forest Service (USFS) with the remainder by the National Park Service. A cooperative relationship

between the City and the Forest Service is guided by the Memorandum of Understanding, statute law, and the Forest Service's Land and Resource Management Plan (LMP).

The Forest Service manages national forest lands according to a multiple use mandate which is based on achieving an acceptable balance between beneficial uses. The Olympic National Forest currently provides significant protection of water quality values within the Municipal Watershed, according to Standards and Guidelines contained in the 1990 Land and Resource Management Plan (Forest Plan). Municipal Watershed Standards and Guidelines further refine the protection afforded the watershed, and the Sensitive Areas within it. The primary goal is to provide high quality water over the long term and when conflicts exist between watershed management and other resources, the conflict should be resolved in favor of the watershed resource.

A Memorandum of Understanding (MOU) signed May 3, 1993, by City of Port Townsend and the USFS-Olympic National Forest provides watershed protection as well as a commitment to implement the Cooperative Watershed Protection Program. Supplementary agreements between the City of Port Townsend and the Olympic National Forest can be developed under the terms of the MOU to provide means for equitable sharing of responsibilities and other aspects of implementing the watershed control program. The last agreement with the Forest Service was entered into in 2009. This Special Use Permit set for minimum instream flows for the Big Quilcene River as well as outlined programmatic operations of the OGWS as it impacts Forest Service lands.

#### Endangered Species Act

There are a variety of threatened and endangered species residing within municipal watershed or in adjoining habitat. Section 7 of the Endangered Species Act (ESA) of 1973 (as amended), directs federal departments and agencies to ensure that actions authorized, funded, and/or conducted by them are not likely to jeopardize the continued existence of any federally proposed or listed species, or result in destruction or adverse modification of critical habitat for such species. In addition, federal agencies must consult with the National Oceanic and Atmospheric Administration (NOAA) Fisheries on all activities, or proposed activities, authorized, funded or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH), as designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1996. Other ESA-listed species including the marbled murrelet and northern spotted owl require consultation with the US Fish and Wildlife Service. Section 7(a)(2) requires that Federal agencies avoid jeopardizing the continued existence of listed species. The ESA likewise requires that Federal agencies refrain from adversely modifying designated critical habitat.

## National Environmental Policy Act

Section 101 of NEPA sets forth a national policy "to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." <u>42</u> <u>U.S.C. 4331(a)</u>. Section 102 of NEPA establishes procedural requirements, applying that national policy to proposals for major Federal actions significantly affecting the quality of the human environment by requiring Federal agencies to prepare a detailed statement on: (1) the environmental impact of the proposed action; (2) any adverse effects that cannot be avoided; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man's environment and the maintenance and

enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources that would be involved in the proposed action. <u>42 U.S.C. 4332(2)(C)</u>.

Forest Service proposals are subject to the NEPA requirements when all of the following apply:

(1) The Forest Service has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated (see 40 CFR 1508.23);

(2) The proposed action is subject to Forest Service control and responsibility (see 40 CFR 1508.18);

(3) The proposed action would cause effects on the natural and physical environment and the relationship of people with that environment (see 40 CFR 1508.14); and

(4) The proposed action is not statutorily exempt from the requirements of section 102(2)(C) of the NEPA (42 U.S.C. 4332(2)(C)).

#### **Tribal Consultation**

Working with the tribes is an important element of being inclusive and respectful of the people and history of this place. The outreach associated with this effort is addressed in the Stakeholder and Public Engagement whitepaper. The Jamestown S'Klallam, Port Gamble S'Klallam, and Lower Elwha Klallam tribes are indigenous people to the Quilcene watershed and the Quimper Peninsula, the City of Port Townsend and along the pipeline. Tribal consultation is included as a key component of any permitting under NEPA is the requirement for Tribal Consultation. The City also consults with the Tribes outside of NEPA recognizing the importance of honoring indigenous people, heritage, and land.

#### State Environmental Policy Act

The State Environmental Policy Act (SEPA) process identifies and analyzes environmental impacts associated with governmental decisions. These decisions may be related to issuing permits for private projects, constructing public facilities, or adopting regulations, policies, and plans. The SEPA review process helps agency decision-makers, applicants, and the public understand how the entire proposal will affect the environment. SEPA can be used to modify or deny a proposal to avoid, reduce, or compensate for probable impacts.

The agency proposing a project is the default lead SEPA agency. However, lead agency status may be transferred if all agencies with a jurisdiction agree. Any number of agencies can agree to share lead agency status, with one agency designated as "nominal lead agency." The agencies should develop an agreement defining the duties and responsibilities of each agency, how to deal with differing opinions, etc.

A SEPA review was completed for the City's 2019 Water System Plan (WSP) update. The elements of the water supply system and current City/Mill agreement are addressed in the current WSP. It is anticipated that the new agreement will be consistent with the 2019 WSP; however, if it is not, the City will amend the 2019 WSP and associated SEPA to incorporate changes.

#### County and State Regulations

Since the majority of the OGWS system lies outside of the City limits, Jefferson and State regulations will typically apply to work on the water system.

# Climate Change

Climate change is projected to alter environmental conditions across the region. Consequences for the Port Townsend water system are expected to include variations in water supply, water quality, watershed health and potential damage to infrastructure. Cumulative effects of climate change and increased likelihood of disturbances (fire, insects, tree disease), is expected to lead to transformation in the current watershed vegetation landscape. Interaction between multiple disturbances, such as insect or disease outbreaks and wildfires, could amplify impacts within the watershed.

Statewide average spring snowpack is projected to decline 38 to 46% by mid-century and 56 to 70% by the 2080s (relative to 1970–1999) under low and moderate greenhouse gas scenarios and reductions of up to 80% (likely range from 50 to 90%) are expected under the high emissions scenario (Intergovernmental Panel on Climate Change Special Report on the Ocean and Cryosphere in a Changing Climate, 2019). Warmer winters, less snow and a greater proportion of winter precipitation falling as rain are projected to shift the timing of peak spring streamflow to earlier in the year, increasing the risk of wintertime flooding and decreasing summer stream flows. Lower flows in the late summer and early fall will necessitate increased reliance on stored water along with other conservation measures in order to meet industrial demand in particular.



Mount Crag (648) Washington SNOTEL Site - 3960 ftReporting Frequency: Daily; Date Range: 2014-10-01 to 2015-09-3(

2015 Precipitation and Snowpack



Drawdown of Lords Lake (2015)

The greatest risk related to climate change is a decrease in summer and fall flows in the Big and Little Quilcene rivers. In 2015, a year of low water supply was encountered due to low snowpack. This forced curtailment of a portion of the Paper Mill's operations. Lords Lake was drawn down to a point where the necessary flow rate could not be maintained. Since that time, several operational changes have bene implemented. However, with climate change, years like 2015 are expected to increase in frequency. As a result, the most effective way to address this likelihood is to increase storage capacity in order to capture water during high runoff periods and store it until needed during dry periods of the year. The Capital White Paper includes a plan to increase the storage capacity of the Lords Lake Reservoir by raising the east and north dams. This modification was explored in 2001 to increase Lords Lake Capacity by 50% and 100%. The cost of this modification is included in the Capital Improvement Plan. Further analysis is necessary to determine the sizing of any future expansion.

The OGWS infrastructure is located above areas expected to be inundated as a result of sea level rise during the next 100 years. However, an increased risk of stream flooding has the potential to damage portions of the system. Wells located within or adjacent to the City's service area may be affected by seawater intrusion with increasing sea levels. Unusable wells would probably lead to demand for City water service. The amount of groundwater currently being consumed within the local area is not known. A few large irrigation wells such as at the golf course or small farms would potentially create most of the potential demand. Maximum summertime demand from the golf course irrigation well is about 4% of total daily demand and would likely be more than all nearby affected residential wells combined.

# Carbon Footprint

The gravity water delivery system avoids the expense and environmental impact of pumping water. The gravity system uses much less energy compared to systems requiring pumping. However, the dispersed location of the facilities requires daily commuting in order to operate and maintain the system. In addition, there are carbon emissions for the drinking water treatment, distribution, and wastewater treatment. Carbon emissions for the annual operation of the water transmission system have not been calculated as of yet. Information below is based on the City of Port Townsend & Jefferson County 2011 Climate Action Plan.

### City of Port Townsend - Emissions Inventory

The operational carbon footprint of the overall system is not expected to increase looking forward. The carbon impact will replacement of the pipeline will be consistent with construction activity to replace 30 inch pipeline. The positive impact of the watershed being managed by the forest service for older timber is also noted. Reduction in electric power emissions is related to the switch to Bonneville Power Administration electricity.

City of Port Townsend Water/Sewage Greenhouse Gas Emissions in tons of CO2e (Climate Action Plan 2011)

	Back cast	Base Year	Forecas	ast 2020 2030 2050			
	1990	2005	2012	2020	2030	2050	
Assuming current practices	570	802	907	1045	1225	1876	
Target	570	802	802	657	476	114	

#### Jefferson County, Washington 2018 Inventory of Greenhouse Gas Emissions & Facility Reporting

City of Port Townsend - 2nd IPCC Assessment		2005		2018			
Inventory	Fuel Type	Usage	CO2e MT	Usage	CO2e MT	% Change Usage	% Change CO2e
Water &	Electricity (kWh)	1,509,249	729	1,456,368	17	-3.5%	-98%
Wastewater	Propane (gallons)	274	2	6,060	34.2	2,112%	1710%
Total			730		36.1		

## Port Townsend Paper Corporation - Emissions Inventory

PTPC estimated that the 2005 mill-wide direct greenhouse gas emissions were about 153,000 carbon dioxide equivalent tons. Since then, PTPC has worked to reduce greenhouse gas (GHG) emissions by reducing the use of fossil fuels. As a result of efficiency improvements and use of renewable carbon neutral biomass, GHG emissions have been reduced by over 50%. In 2018, the Port Townsend Paper Corporation (PTPC)'s emissions generated 66,331 metric tons of CO2e, see table below. As noted in the 2018 Inventory of Greenhouse Gas Emissions for the Industrial Sector, due to the convention of considering burning of biomass biogenic in nature (EPA and DOE have stated that burning of renewable, sustainably managed biomass is considered carbon-neutral), the 106,537 tons of dry wood used as an energy source is considered to have released only 5% as much CO2e (from CH4 and N2O) as was released from all the other industrial fuels.

Inventory	Fuel Type	Usage	Units	CO2e MT	% Total
Industrial Energy PTPC	Electricity	163,321,000	kWh	1,911	3%
Industrial Energy PTPC	Propane	724,014	MMBtu	38,427	58%
Industrial Energy PTPC	Fuel Oil	2,215,290	Gallons	22,702	34%
Industrial Energy PTPC	Wood	106,537	BDT	3,292	5%
Industrial Energy PTPC Total				66,332	100%

## Port Townsend Paper Corporation - Emissions Summary for 2018

Utilizing the IPCC 2nd Assessment factors for both 2005 and 2018, the PTPC emissions decreased 52% from 2005. PTPC has been working to reduce greenhouse gas emissions by reducing the use of fossil fuels and has made a variety of efficiency improvements since 2005.

PTPC 2005		005	5 2018			
Fuel Type	Usage	CO2e MT	Usage	CO2e MT	% Change Usage	% Change CO2e
Electricity (KWh)	141,600,000	6,249	163,321,000	1,911	15%	-69%
Propane (Gallons)	161,978	912	724,014	38,425	347%	4113%
Fuel Oil (Gallons)	11,410,000	116,905	2,215,290	22,706	-81%	-81%
Wood (BDT)	428,575	13,012	106,537	3,234	-75%	-75%
Totals		137,078		66,276		-52%

PORT TOWNSEND PAPER CORPORATION - COMPARISON OF 2018 TO 2005

The Port Townsend Paper Company has an operational incentive to reduce energy consumption to reduce input costs. In addition, the PTPC has increased it use of recycled cardboard significantly. It is anticipated that as the Mill is upgraded the amount of carbon footprint impact per ton of product produced will continue to decline.

## Water supply

The City has a water right for the continuous diversion of 30 cubic feet per second (cfs) from the Big Quilcene River. There is no Washington State mandated minimum instream flow requirement associated with the water right, however, there is a 27 cfs minimum instream flow requirement conditioned by the US Forest Service Special Use Permit of 2009. The Little Quilcene River water right is for 9.56 cfs, with a minimum instream flow requirement of 6 cfs. Both the Little and Big Quilcene rivers diversion facilities are located within the Olympic National Forest.

Projected alterations of streamflow magnitude and timing within the municipal watershed have the potential to disrupt the water supply. Hydrologic impacts due to shifting from a mixed rain/snow-dominant to rain-dominate condition are expected to result in less snow and more rain, increased winter flows, and reduced late-summer flows. Earlier spring snowmelt and peak flows means that more water will run off when the City's reservoirs are already full. With the loss of snowpack water storage and lower summer stream flows, there will be an increased dependence upon water stored in Lords Lake and City Lake. Mitigation for a reduced water supply could include implementation of conservation/efficiency measures or expansion of storage capacity to capture the winter and spring runoff.

While municipal water demand could readily be satisfied for the foreseeable future by existing lake reservoir capacity, industrial demand will drive future storage requirements. As an alternative to surface water the City could develop a groundwater or reverse osmosis water supply. Ground water recharge within Port Townsend area would be insufficient for current industrial demand and likely for municipal demand as well. Reverse osmosis costs would rule out that option for supplying the Mill. Options for water supply are addressed in the Assets White Paper.

### Water consumption

Consumption by the City averages around 1 million gallons per day (mgd), varying from a low of 700,000 gallons per day in the winter to a high of over 2 mgd in the summer. Municipal water production is measured by the flow meters at the Water Treatment Facility. City consumption is tracked by monthly customer meter readings. The current 3-year rolling average for unaccounted water is 7.7%. Estimated future population and demand for the City's 10, and 20-year planning horizons are presented in the table below using 1.12% annual compounded growth for the City and 0.62% for the service area outside the city limits.

Population and Demand	2016	2026	2036
Population	10,478	11,673	13,006
Average Daily Demand	0.928	1.01	1.13
Maximum Daily Demand	1.877	2.12	2.38
Peak Hourly Demand	2.215	2.51	2.80

Mill average daily water use is 10-12 million gallons of untreated water but may swing from less than 7 mgd to more than 14 mgd throughout the day depending on processes operating. For the period of June 2019 through May 2020, the PTPC used an average of 10.79 million gallons per day or 12,122 Acreft over the year. For the same period, the City used 1.01 million gallons per day or 1,136 Acre-ft of the year.

Prior to the startup of the City's water filtration plant, the Mill received treated water that was chlorinated at City Lake for both process and potable requirements. Disinfection was eliminated at City Lake with the new treatment facility. The change in water treatment caused the mill to spend \$420,000 to connect to the City's distribution system. The Mill's potable water consumption, averaging 3,750 gpd, is metered and paid for as a commercial account. Water for the Mill's paper and pulp making process is untreated, supplied from the transmission line by the Port Townsend city limits. The Mill has since added supplemental chlorine to their process water to prevent biological growth in the process systems. PTPC planning projections are for zero growth going forward. While water use has remained relatively flat over the past 20 years, the amount of paper produced with that water has increased as illustrated below. Through technology, the Mill anticipates continued increase in production for the same water use.



Historical Production of Paper per 1,000 Gallons of Water Used

Projecting forward City and Mill consumption, the estimated maximum flow and average flows/volumes are provided in the following table:

Maximum Daily Demand (MGD)						
	Current	2030	2040			
City	2.12	2.38	2.66			
Mill	Mill 14		14			
Average Daily Demand (MGD)						
City	1.01	1.13	1.27			
Mill	11	11	11			

These flows and resulting volume estimates are considerably less than the system was originally designed to deliver. With the exception of some pressure delivery limitations to the Water Treatment Facility (described in the Operations and Capital white papers), the system could deliver substantial greater volumes of water subject to the water supply in the watershed.

#### Wholesale Water Sales Potential

A consideration for the future of the public on the Quimper Peninsula is the wholesale delivery of water to other service providers. Given the high cost of Capital and the exceptional quality of the water, this option is explored here as a strategy to increase the customer base, offsetting the cost per customer for water system operations. However, additional sales may be limited by water availability during the dry months. If the Jefferson County PUD, the Port Townsend Paper Company, and the City of Port Townsend, desire to expand the water system use, significant research would be necessary to validate and formalize the following analysis. As a matter of determining whether or the not to provide for this option in the future, the following number illustrate what the demand would look like if the Tri-Area was served by the OGWS. As of 2018, the Quimper water system had 3462 connections and other nearby private systems including Port Ludlow and Cape George another 2200 connections. An expanded service area could also result in larger communities subsidizing the smaller dispersed service areas.

Projected Water Demand (mgd)	2020	2030	2040
City of Port Townsend Water Syst	em		
Equivalent Res. Units (ERUs)	8,290	9,276	10,379
Average Daily Demand (ADD)	1.01	1.13	1.27
Max. Daily Demand (MDD)	2.12	2.38	2.66
PUD Quimper Water System			
ERUs	5,588	6,807	7,884
ADD	0.887	1.080	1.251
MDD	1.987	2.421	2.804
Total Projected Demand			
ERUs	13,878	16,083	18,263
ADD	1.898	2.212	2.517
MDD	4.111	4.797	5.463

As illustrated in the above table, the water use for potable use would nearly double from that of the City of Port Townsend projected use. With the Port Townsend Paper Mill in operation, expanding water use to the Quimper Peninsula Tri-Area would at least require upsizing of the 24 inch pipe section at City Lake as well as increasing the capacity of the Lords Lake.

#### Cost of water (Wholesale)

The delivery points for water is the terminus of the OGWS at the intersection of Mill Road and S 8<sup>th</sup> Street. The cost of water at the delivery points for the Mill and the City is the cost of operations and maintenance as well as capital investment in the OGWS infrastructure. There is a minimal permit cost for operating the water system facilities on the National Forest is negligible and there is no charge for at the source. Refer to Operations and Capital white papers for additional information on the cost of operations and capital. These costs will be incorporated into a financial analysis to establish a per million gallon cost for water at the delivery points. If the Tri-area were to purchase wholesale water at the point of delivery (Four Corners), the value of the water would be determined consistent with the costs to the City and Port Townsend Paper Company.

#### Source Water Quality

Water quality from the Quilcene Rivers is exceptional and, until 2017, was one of the few permitted unfiltered surface water supplies. There are no contributions of point source pollution within the municipal watershed. Naturally occurring nonpoint source pollution in the National Forest watershed from erosion of steep slopes, streambanks and road surfaces are the primary contributors to suspended sediment. Elevated turbidity is typically the result of heavy rain or rain on snow, which are generally short-term duration events. A moderate amount of recreational use of the watershed has the potential to introduce pathogens directly into water or into the animal community.

#### Fish bearing streams

While the diversions are upstream of natural anadromous fish barriers, the reivers provide water supply to the lower sections of both rivers which both have habitat for a variety of salmonids including ESA threatened listed Hood Canal summer-run chum and steelhead. For the 2009 Special Use Permits renewal, Environmental and Biological Assessments were developed in cooperation with the US Forest Service, National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS). NMFS concluded that reissuing the City's Permits would not jeopardize, or adversely modify or destroy designated critical habitats for the Hood Canal summer-run chum salmon. USFS Special Use Permits include requirements to maintain minimum instream flows to protect the fisheries as described above.

# Conservation (Excluding Water-Recycling)

Both the City and Port Townsend Paper implement conservation measures. The Mills conservation measures have resulted in greater productivity for the equivalent water used. The City has Water Use Efficiency (WUE) Goals adopted during the most recent public forum. They include the following demand and supply side goals:

#### Demand Side Goal

• Reduce city-wide per capita daily consumption 3 percent below the 2013-2017 average over a 6-year period.

Supply Side Goal

• Maintain the 3-year rolling average water distribution system leakage below 6.5 percent.

At the end of the 10-year planning period (2026), if met, the demand water use efficiency goal would account for an average city-wide savings of 52,243 gpd. At the end of the 20-year planning period (2036), the goal would account for an average savings of 53,546 gpd and if achieved, the net water savings over the 20-year planning period will be in excess of 347 million gallons.

#### Conservation Response Measures

The Port Townsend City Council passed Ordinance 3132 Exhibit A Drought Contingency Response Plan on August 3, 2015. The updated drought response plan is divided into three stages. Each stage has its own level of activity and triggering condition. Action timing may be adjusted earlier than specified if the Lords Lake reservoir drawdown occurs sooner or is more rapid than predicted.

Construction of the City's water treatment plant has alleviated most reservoir turbidity concerns, which would allow the Mill to potentially draw more water from Lords Lake and City Lake. The extent to which

the mill would be permitted to draw City Lake down would depend on the time of the year and ability of the City to meet expected demand. Aggressive water recycling is built into the mill process, allowing each gallon to be used up to 7 times before the effluent is treated. During low water supply periods cooling towers are used to further reuse process cooling water.

#### Irrigation Water Consumption

Irrigation in northwest Washington occurs primarily between May and September. In order to determine the impact of irrigation consumption on the water system the peak average daily demand is converted to an Equivalent Residential Unit (ERU), a unit of measure for system capacity in units of single-family residences, which was calculated as 122 gallons per ERU. Dividing the July peak average daily demand by 122 equates to 1256 ERUs. Water system sources, treatment, storage, and delivery systems must be sized to serve the demand or offset by utilizing another source of water.

			Commercial ar	d Residential	Irrigation Cons	umption (gallo	ons)		
	2015	2016	2017	2018	2019	2020	Average	Average Daily Demand	ERU
Jan	101,000	44,000	15,000	65,000	109,000	65,000	66,500	2,145	18
Feb	89,000	54,000	92,000	29,000	116,000	44,000	70,667	2,524	21
Mar	210,000	119,000	97,000	88,000	215,000	121,000	141,667	4,570	37
Apr	452,000	516,000	288,000	122,000	459,000	1,088,000	487,500	16,250	133
May	1,993,000	1,981,000	982,000	1,779,000	2,029,000	1,296,000	1,676,667	54,086	443
Jun	3,936,000	1,806,000	2,533,000	2,944,000	3,193,000	1,086,000	2,583,000	86,100	706
Jul	3,248,000	2,535,000	3,529,000	3,284,000	3,522,000	1,794,000	2,985,333	96,301	789
Aug	2,170,000	2,269,000	3,444,000	3,376,000	3,348,000	2,693,000	2,883,333	93,011	762
Sep	1,130,000	1,745,000	1,925,000	1,200,000	928,000	1,672,000	1,433,333	47,778	392
Oct	661,000	157,000	408,000	420,000	278,000	341,000	377,500	12,177	100
Nov	138,000	43,000	191,000	159,000	163,000	N/A	138,800	4,627	38
Dec	54,000	48,000	152,000	122,000	127,000	N/A	100,600	3,245	27
Total	14,182,000	11,317,000	13,656,000	13,588,000	4,487,000	10,200,000	12,905,000		
			Golf C	ourse Irrigatio	n Consumptior	ı (gallons)			
	2015	2016	2017	2018	2019	2020	Average	Average Daily Demand	ERU
Jan	14,000	-	-	-	-	-	2,333	75	1
Feb	-	-	-	-	-	-	-	-	-
Mar	14,000	155,000	-	8,000	323,000	341,000	140,167	4,522	37
Apr	341,000	1,217,000	18,000	612,000	336,000	865,000	564,833	18,828	154
May	1,805,000	988,000	1,717,000	1,638,000	1,266,000	898,000	1,385,333	44,688	366
Jun	2,808,000	1,916,000	2,671,000	1,653,000	1,268,000	696,000	1,835,333	61,178	501
Jul	1,165,000	2,478,000	2,417,000	1,949,000	1,474,000	1,725,000	1,868,000	60,258	494
Aug	801 000		2 647 000	1 45 4 000	1 411 000	1 058 000	1,490,833	18 001	394
	801,000	1,604,000	2,617,000	1,454,000	1,411,000	1,038,000	2) 100)000	40,091	554
Sep	527,000	1,604,000 476,000	1,282,000	406,000	925,000	1,143,000	793,167	26,439	217
Sep Oct	527,000 91,000	1,604,000 476,000 258,000	2,617,000 1,282,000 316,000	406,000 403,000	925,000 758,000	1,143,000 590,000	793,167	26,439 12,989	217 106

Dec	-	-	-	-	-	N/A	-	-	-
Total	7,646,000	9,129,000	11,047,000	8,154,000	7,761,000	7,316,000	8,508,833		

The current system limiting factor is the Water Treatment Facility's designed 2.95 mgd (2,049 gpm) capacity, which limits the system to 12,052 ERUs, or an additional 4,448 ERUs over the existing demand. A booster pump to transfer water from the low zone to high zone eliminates the apparent high zone limiting factor. Thus, irrigation represents a potential deferment of the treatment plant expansion if an alternate water source such as the golf course well or wastewater reuse is developed.

Water System Limiting Factors	System Capacity ERUs	Existing Demand ERUs	Available ERUs
Installed Source Capacity	20,325	7,604	12,721
Treatment Capacity	12,052	7,604	4,448
Instantaneous Water Rights	20,324	7,604	12,720
Annual Water Rights	209,28	7,604	20,167
Storage Capacity (High Zone)	2,275	1,141	1,134
Storage Capacity (Low Zone)	17,991	6,463	11,528

# Water Re-Use (Mill and City)

Water re-use provides the opportunity to reduce demands on the system by utilizing wastewater that is currently being discharged to Puget Sound. The greatest advantage of water-reuse is generally realized when multiple values are achieved. For example, the both the Mill and the City have National Pollutant Discharge Permits for their treated effluent. Those permits have discharge requirements that become more stringent over time. As an example, the City is facing nutrient removal requirements for the municipal wastewater treatment plant thereby making water re-use as one of many potential options for addressing new requirements. Additionally, water-reuse is valuable to the OGWS as a way to off-set Maximum Day Demands and Maximum Month Demands from a flow standpoint and to maintain higher streamflows. From a volume standpoint, water re-use may assist in offsetting storage requirements for the system to account for the impacts of Climate Change.

There are several potential re-use options are available based on current water re-use regulations. The feasibility from a cost standpoint of water re-use is highly depended on the reclamation standards required for each type of use and whether or not filtration is required governed by the Department of Health and Department of Ecology (RCW Chapter 90.46). The following uses with treatment requirements are permitted under WAC 173-219-390.

Beneficial Use	Reclaimed Water Class	Additional Requirements
	Requirements	
	Indoor Use	
(1) Commercial or industrial	Class A	Residents must not have access
facilities, buildings, apartments,		to the plumbing system for
condominiums, hotels, and		repairs or modifications. Where

#### **Table 3: Use-Based Performance Standards**

motels (toilet/urinal flushing or		the residents have access to the						
launary).		modifications no use of						
		reclaimed water is permitted.						
Commercial, Industrial, and Institutional Uses <sup>1</sup>								
(2) Commercial, industrial, and	Class A							
institutional uses (including								
public water features) with								
public contact.								
(3) Commercial, industrial, and	Class B	Must minimize adverse impacts						
institutional uses with		to the environment and						
environmental contact.	Class P	dependent beneficial uses.						
(4) Commercial, Industrial, and	Class B	Contact limited to qualified						
		Little potential for health						
		impacts.						
	Land Application or Irrigation <sup>1</sup>	· ·						
(5) Landscape irrigation with	Class A							
direct or indirect public access.								
(6) Landscape irrigation with	Class B	Contact limited to qualified						
restricted access and contact.		personnel or used at times of						
		no, or very limited public						
(7) Irrigation of food group	Class A							
(7) Inigation of 1000 crops (unless otherwise specified)	Class A							
(8) Frost protection of orchard	Class B	Must not apply within 15 days						
crops.		of harvest.						
		<ul> <li>50-foot setback from public</li> </ul>						
		access.						
(9) Irrigation of nonfood crops.	Class B	50-foot setback from public						
		access.						
(10) Irrigation of orchards or	Class B	<ul> <li>50-foot setback from public</li> </ul>						
vineyards.		access.						
		Class B irrigation water must						
		not come in contact with the						
	Church D	fruit within 15 days of harvest.						
(11) Irrigation of process food	Class B	50-foot setback from public						
(12) Irrigation of trees fodder	Class B	50-foot setback from public						
fiber. or seed crops in pastures		access.						
not accessed by milking								
animals.								
(13) Irrigation of trees, fodder,	Class A							
fiber, or seed crops in pastures								
accessed by milking animals.								
	Release to Wetlands							
(14) Category I wetlands.	No reclaimed water use							

(15) Category II wetlands with special characteristics.	No reclaimed water use	On a case-by-case basis, Class A reclaimed water may be used, if it can be demonstrated that no existing significant wetlands functions will be decreased and a net environmental benefit can be demonstrated as required in WAC <u>173-219-210</u> (2)(h)(vi).
(16) Category II wetlands without special characteristics.2	Class A	Unless it can be demonstrated that no existing significant wetlands functions will be decreased, and overall net environmental benefits will result from the release of reclaimed water must not exceed on average annual basis: • 20 mg/L BOD, 20 mg/L TSS, 3 mg/L TKN, and 1 mg/L phosphorous. • Annual hydraulic load ≤2 cm/day.
(17) Category III or IV wetlands.2	Class A	Unless it can be demonstrated that no existing significant wetlands functions will be decreased, and overall net environmental benefits will result from the release of reclaimed water must not exceed on average annual basis: • 20 mg/L BOD, 20 mg/L TSS, 3 mg/L N TKN, and 1 mg/L phosphorous. • Annual hydraulic load ≤3 cm/day.
(18) Constructed treatment or beneficial use wetlands with public access.	Class A	Reclaimed water that does not meet the class A or B reclaimed water standards may be beneficially used for discharge into constructed treatment wetlands where the department of ecology, in consultation with the department of health, has specifically authorized such use at such lower standards, as provided for in RCW <u>90.46.090<sup>(2)</sup></u> .

(19) Constructed treatment or beneficial use wetlands with no public access.	Class A or B	Reclaimed water that does not meet the class A or B reclaimed water standards may be beneficially used for discharge into constructed treatment wetlands where the department of ecology, in consultation with the department of health, has specifically authorized such use at such lower standards, as provided for in RCW <u>90.46.090<sup>(2)</sup></u> .
	Surface Water Augmentation	
(20) Surface water augmentation (including direct via impoundments, rivers, reservoirs, or lakes and indirect via groundwater or bank infiltration).	Class A or B	Criteria established on a case- by-case basis to protect existing beneficial uses (recreational, environmental, or other). Must meet applicable requirements of:
		<ul> <li>Chapter <u>173-201A</u> WAC (surface water standards).</li> <li>WAC <u>246-290-310</u> (drinking water maximum contaminant levels).</li> </ul>
	Groundwater Recharge	
(21) Indirect groundwater recharge (surface percolation, subsurface percolation, or vadose wells).	Class A or B	Criteria established on a case- by-case basis. Must meet applicable requirements of:
		<ul> <li>Chapter <u>173-200</u> WAC (groundwater standards). F</li> <li>Chapter <u>173-218</u> WAC when using a UIC well (underground injection control program).</li> <li>WAC <u>246-290-310</u> (drinking water maximum contaminant levels in finished reclaimed water or at alternative point of compliance).</li> <li>Minimum physical setback of 200 feet, and sanitary control area requirements, whichever is greater, around water supply wells as outlined in WAC <u>246- 290-135</u>.</li> </ul>
(22) Direct groundwater recharge (aquifer recharge).	Class A	Criteria established on a case- by-case basis.

		Must meet applicable requirements of: • Chapter <u>173-200</u> WAC (groundwater standards). • Chapter <u>173-218</u> WAC (UIC program). • WAC <u>246-290-310</u> (drinking water maximum contaminant levels in finished reclaimed water product or at alternative point of compliance). • Minimum physical setback of 200 feet, and sanitary control zone area requirements, whichever is greater, around water supply wells as outlined in WAC <u>246-290-135</u> .
(23) Recovery of reclaimed water stored in an aquifer	Class A	reclaimed water from an
(aquifer recovery).		aquifer must be demonstrated
		using the criteria presented in
		the engineering report. They
		groundwater quality, the
		surrounding environment, or
		water rights holders.
	Direct Potable Reuse	·
(24) Direct potable reuse.	Class A+	Class A+ treatment criteria will
		be established on a case-by-
		notable reuse is not a beneficial
		use of reclaimed water unless
		and until the group A potable
		water purveyor or reclaimed
		water generator has applied for
		and received a waiver from the
		State board of nealth under $WAC 246-290-060(4)$
		WAC <u>246-290-060(</u> 4).

1. Class A reclaimed water may be used with no additional requirements.

2. For depressional wetlands, maximum increase of 10 cm above the natural average monthly water level.

An average of 286 million gallons of municipal wastewater is treated annually. Analysis of the re-use at the Mill 10 years ago determined it would be prohibitively expensive and require extensive changes to the Mill water system. It is estimated 74 million gallons of reclaimed water could potentially be utilized, mostly for irrigation purposes within the city. However, the majority of the property considered for reclaimed water is not currently irrigated, thus, a more realistic total for water use would be on the order of 10-12 MG/year. Water re-use for irrigation could offset summer peaking demands for the City by approximately 0.5 MGD with an adequate distribution system to access the School District, Fort

Worden, Golf Course, Port, Farms, and City Parks. Also, given climate change, irrigation demands are expected to increase.

In 2017 the total net present value cost for the water reclamation system (additional treatment, storage, pumping and distribution piping) was \$16,887,000. Assuming reclaimed water use totals 12 MG/year, the total value per gallon treated over a 20-year period equates to approximately \$0.04 per gallon. The current monthly service charge for water based on the summer irrigation rate is \$0.0062 per gallon. Reuse of treated wastewater does not appear to be economically feasible at this time, particularly that demand for reclaimed water is low and would be seasonally operated.

As technology improves cost efficiency of wastewater re-use and public acceptance and regulations change, it is anticipated that the City will explore application of water re-use in the next 50 years.

#### Wastewater Treatment

Despite the high quality of treatment produced by the City's Wastewater Treatment Plant (WWTP), considerable modifications would need to be made to make the water meet re-use standards. For the purpose of this whitepaper, the current discharge information for the WWTP is provided. Port Townsend's WWTP is designed for a maximum monthly flow of 2.05 mgd and an average annual daily flow of 1.44 mgd. Current maximum monthly and average annual flows are 0.872 mgd and 0.786 mgd respectively, however flows have reached 4 mgd for short periods of time during exceptionally heavy rainstorms.

Treatment effectiveness has exceeded the following criteria:

• BOD designed Influent Loading Max. Month: 3754 lbs./day – Currently operating at 2718 lbs/day or about 72% of maximum loading. Treatment plants are required to develop upgrade plans at 85% of capacity.

<u>Permit</u>	Effluent Discharge Limit	Discharged to Straits	
BOD	30 mg/l Ave. Month	45 mg/l Ave. weekly	4.7 mg/l
T.S.S.	30 mg/l Ave. Month	45 mg/l Ave. weekly	2.9 mg/l

• T.S.S. designed Influent Loading Max. Month: 4568 lbs./day – Current loading is 2686 lbs/day.

Excessive levels of nutrients from human sources, such as nitrogen and carbon, are negatively impacting water quality in Puget Sound. High nutrient loading, of which wastewater is a significant factor, provides fertilizer for algae and aquatic plants. Decomposition of algae and plants consumes oxygen that marine animals need to survive.

Due to low average influent wastewater volume, treatment by the Port Townsend wastewater plant provides partial nitrogen removal prior to discharge to the Straits of Juan de Fuca. While contributing to the overall Puget Sound loading, high tidal exchange within the Straits dilutes the effluent more readily than in the shallower bays and inlets.

In 2019, the DOE discussed options for controlling nutrient pollution from treatment plants. After receiving public input on a preliminary determination, the DOE decided to move forward with a Nutrients General Permit because it was determined to be the best tool for reducing excess nutrients

from treatment plants that discharge directly to Puget Sound. The exact permit conditions are still to be determined. The City will be issued a new NPDES individual permit after the General Permit has been issued requiring the City to comply with new nutrient standards. The full impact of these requirements on the city wastewater system is yet to be determined.

Water reuse is also considered in the Assets white paper briefly under the consideration of water supply alternatives. The conclusion concerning water re-use is that it only addresses a portion of the water demands and the current economics does not make it a viable solution during this current planning period.

# Other Environmental Considerations

## City of Port Townsend Environmental Sustainability

Steps the City has taken toward developing environmental sustainability include:

- Golf course well
  - The City filed a water-right application for an irrigation well at the Port Townsend Golf Course with the Washington State Department of Ecology on June 3, 2002. A well was drilled and the water right G2-30059 permit approved in 2019 for the maximum instantaneous allocation of 150 gallons per minute and a maximum annual withdrawal of 51 acre-feet to irrigate 35 acres of the City-owned golf course.
  - The well will allow the City to irrigate the golf course with groundwater rather than surface-water from the Big and Little Quilcene Rivers. Use of groundwater sourced from a basin that drains directly to the marine environment will reduce demand from the rivers when surface-water is limited. The well would also be used as an emergency water supply if the municipal water system's single source of supply is inoperative or if a significant portion of the municipal distribution system is damaged.
- Leak monitoring and repair
  - The current 3-year rolling average water distribution system leakage is 7.7%. The City of Port Townsend's ongoing supply side WUE measures include ensuring that all accounts are metered, repairing broken meters, and identifying and repairing leaks. An ongoing acoustic leak detection program surveys several miles of pipeline per year.
- Xeriscape LS
  - When possible, the City practices xeriscaping of public spaces and parks to reduce the need for continued irrigation.
- Excess water use rate charges promote conservation
  - Port Townsend's utility billing adds an incremental charge for each 1,000 gallons of water consumption. In addition, the wastewater charge, which is based on water consumption, increases if use is 3,000 gallons or more.
- Plumbing Codes
  - The federal government enacted national standards in the U.S. Energy Policy Act of 1992 (EPAct 1992). This comprehensive legislation set minimum efficiency standards for all toilets, showers, urinals, and faucets manufactured in the United States after 1994.

### Port Townsend Paper Corporation Environmental Sustainability

Steps the PTPC has taken toward developing environmental sustainability include:

- Significant greenhouse gas reductions.
- Increased recycling of waste paper, currently 800 tons of cardboard per day.
- Increased water reuse during shortages through use of rental cooling towers.
- Fiber all sourced through Sustainable Forestry Initiative (SFI) & Forest Stewardship Council (FSC) certified suppliers programs, which provide third-party certification that wood and pulp suppliers support and practice responsible forest management principles.

## References

- 1. Cooperative Watershed Protection Program, April 1, 1994
- 2. Memorandum of Understanding Between the City of Port Townsend and U.S. Department of Agriculture Forest Service Olympic Nation Forest, May 3, 1993
- 3. 2009 Special Use Permit with the US Forest Service
- 4. Climate Action Plan Port Townsend/Jefferson County, Washington November 14, 2011
- 5. Jefferson County Washington 2018 Inventory of Greenhouse Gas Emissions
- 6. City of Port Townsend 2018 ENERGY USE DATA-WATER WASTEWATER AND STORMWATER.xlsx
- Shifting Snowlines and Shorelines: The Intergovernmental Panel on Climate Change's Special Report on the Ocean and Cryosphere and Implications for Washington State (2020)

# Olympic Gravity Water System (OGWS) Operations White Paper

June 7, 2021

# Preface

The City of Port Townsend and the Port Townsend Paper Mill have a historical partnership of supplying water to the Quimper Peninsula, City of Port Townsend, and the Port Townsend Paper Mill dating back to 1928. The City and Port Townsend Paper Company are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System in the late 1920's, the development of an agreement between the City of Port Townsend (City) and Port Townsend Paper Company (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, eight technical white papers topic areas break down information into manageable segments. In the following specific white paper categories, the City and PTPC have worked together to develop these white papers for potential items to consider during the negotiation of the agreement.

- 1. Assets: Understanding each entities assets and capacities that support investment.
- 2. Stakeholders: The public, private property owners, and many agencies are stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to plan for and include planning for the future.
- 4. Operations: Operational requirements, efficiencies and goals, cost, and reliability as well as determining the line between capital and ordinary wear and tear is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and need to be informed by a value engineering study for system reliability.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiations and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the City of Port Townsend City Council and the Port Townsend Paper Mill Board of Directors.

The following white paper addresses the operations of the Olympic Gravity Water System.

# Introduction

The OGWS originating from Snow Creek, which began operation in 1905, was decaying and having difficulty supporting the water needs of the community by the mid-1920s. The Port Townsend community actively competed to be the site of the new Crown Zellerbach kraft paper mill to help revive the city's economic fortunes and renovate the water system. As part of the process the City acquired water rights on the Big and Little Quilcene Rivers and the voters approved issuing municipal bonds to pay for the construction of a dam and pipeline from the Big Quilcene River. Port Townsend has maintained ownership the OGWS facilities and water rights but leased the operation and maintenance of the source water collection and transmission system to the National Paper Products Company. In addition to lease payments, the mill and its various owners have continued to assume responsibility for the operation of the OGWS since its completion. Sections of wood stave pipeline installed in 1928 were replaced between the 1950s and 1972 with welded steel pipe. Construction of the Little Quilcene diversion and Lords Lake reservoir in 1955/1956 added a new source of supply and 500 million gallons of storage to the water system.

With more than 29 miles of pipeline that varies in age from 39 to 93 years, there are substantial costs associated with the annual operation and maintenance as well as funding the eventual replacement of the pipeline and associated facilities. Looking forward, a number of scenarios are available for continuing with the future operation of the system as outlined in the Legal white paper.

# Background

The original lease between the City of Port Townsend and the National Paper Products Company was for a term of 30 years starting in 1928 for a total sum of \$460,000. This lease was succeeded in 1944 by a transfer to the Crown Zellerbach Corporation. It included a \$15,000 per year rental for a period of 10 years beginning in 1958 with the requirement that the City would immediately undertake replacement of deteriorating sections of the pipeline when the lease took effect. In 1956 the lease was renewed for a period of 30 years with a total payment of \$3,267,042.17, which was used to pay for the waterline replacement and improvements. The 1956 lease was modified in 1983 extending it to March 15, 2020 and assigning it to the Port Townsend Paper Corporation with substantially no change to the 1956 terms, except for increasing the City share of the water from 4 to 5 million gallons per day. There has been a short term extension of the current lease while the new contract is being negotiated.

Per the contract, it has been PTPC's responsibility to fully pay for the maintenance and repair of the waterworks and to keep it in good and reasonable state of repair at all times, excepting reasonable wear and tears, deterioration, and obsolescence. PTPC currently employs three individuals to operate and maintain the water system and perform caretaking duties at the Big Quilcene Diversion and City Lake. Repairs and maintenance requiring excavation or specialized services such as the cathodic survey are contracted by PTPC or occasionally provided by City staff.

## Water consumption

In 2020 an average of 10.3 million gallons of water from the Big Quilcene River and 2.8 million gallons from the Little Quilcene River was diverted daily. Water flow is also monitored as it goes into and out of City Lake. Consumption by the City averages around 1 million gallons per day (mgd), varying from a low of 700,000 gallons per day in the winter to a high of just over 2 mgd in the summer. Mill average daily water use is 10-12 million gallons of untreated water but may swing from less than 7 mgd to more than 14 mgd throughout the day depending on processes operating.

Not only is water demand important for consideration for future capital investments, but it creates operations considerations as well. For example, higher water demand by the Mill coinciding with high demand by the city affects water pressure and production capability at the City's water filtration facility. This may be caused by the pressure loss due to excessive velocity in an approximate 6,100-foot section of 24" diameter transmission line north of City Lake, which may require replacement with a larger diameter pipeline.

Maximum Daily Demand								
Current 2030 2040								
City	2.12	2.38	2.66					
Mill	14	14	14					
Average Daily Demand								
City	1.01	1.13	1.27					
Mill	11	11	11					

The estimated flows split between the City and the Mill is projected as follows:

## Historical Cost of O&M and Staffing

Operating and maintaining the OGWS has been performed by the Mill consistent with the lease terms. For more 30 years staffing for routine operation and maintenance of OGWS has been conducted by three persons along with the occasional summer help. Manual operation of flow control valves and screen cleaning and extensive hand operated clearing and brushing of the pipeline right of way will continue to dictate staffing levels with at least three full time employees (FTEs) expected for minimum staffing. As the sole source of water to the City and mill and the consequences of supply interruptions, having qualified personnel such as pipefitters readily available (4-8 hour response time) to repair the pipeline is critically important. Automation benefits, particularly valve operation and screen cleaning and improved security could potentially eliminate the need for fulltime caretakers at the Big Quilcene Diversion and City Lake.

Recent cost of operations and maintenance have been approximately \$416,000 per year the last four years.

Cost Category		2016		2017		2018	12.	2019	2020 (estimate	)
		3	Cit	y Lake H	lou	se				
Repair Labor	\$	-	\$	(171)	\$	1252	\$	87.8	\$ -	
Contract Maintenance	\$	23	\$	176	\$	520	\$	523	\$ -	
Repair <mark>M</mark> aterials	\$	305	\$	1.000	\$	852	\$	572	\$ -	
Misc Supplies and Expenses	\$	9,170	\$	5,406	\$	5,182	\$	3,484	\$ 4,75	8
		Big	Qui	il Divers	ion	House				
Repair Labor	\$	1	\$	1.00	\$		\$		\$ -	
Contract Maintenance	\$	-	\$	1 543	\$	21,425	\$	143	\$ -	
Repair Materials	\$	497	\$		\$	8	\$	1,509	\$ 11,01	4
Misc Supplies and Expenses	\$	7,577	\$	4,103	\$	3,230	\$	2,031	\$ 1,50	0
		Fr	esł	Water	Sys	tem				
Repair Labor	\$	1	\$		\$	1571	\$	1.74	\$ -	
Contract Maintenance	\$	22,266	\$	11,521	\$	19,144	\$	14,972		
Repair <mark>M</mark> aterials	\$	12,102	\$	51	\$	13,439	\$	16,806		
Misc Supplies and Expenses	\$	11,098	\$	67,709	\$	82,008	\$:	139,215	\$ 59,52	3
Leases	\$	19,595	\$	21,498	\$	20,523	\$	20,824	\$ 6,94	1
Fuel	\$	17,520	\$	10,066	\$	1.00	\$		\$ -	
Cathodic Protection	\$	21,823	\$	3,267	\$	1,752	\$	2,898	\$ 3,49	8
Telephone	\$	2,448	\$	6,649	\$	3,801	\$	3,083	\$ 3,66	0
			1	abor Co	sts					
Salaries/Benefits	\$2	38, <mark>9</mark> 62	\$	303,941	\$	240,374	\$2	251,918	\$ 267,63	7
Sub Total Annual Cost	\$3	63,363	\$4	434,387	\$	410,886	\$4	456,740	\$ 358,53	1

Various City staff manage permits, conduct watershed patrols and ensure compliance with water supply regulations, which requires about 0.5 FTE or approximately \$75,000 per year including equipment. In addition, the City spends around \$27,000 annually for OGWS operations, including payments to the Natural Resources Conservation Service for the SNOTEL site maintenance, US Geological Survey for stream flow gaging maintenance, DOE Dam Safety fees and USFS Special Use Permit fees.

Annual City of Port Townsend OGWS Maintenance Cost					
NRCS SNOTEL Maintenance	\$7,000				
USGS Streamflow Gaging	\$13,500				
DOE Dam Safety	\$1,300				
USFS Permit Fees	\$5,000				

Thus, the historical total cost of the Mill and City combined to operate and maintain the system has been approximately \$518,000 per year. An option of having the City run the system in its entirety was evaluated and estimated at \$763,000 per year beginning in 2021. From a financial standpoint, the cost of the PTPC to continue to operate and maintain the system is appropriate.

Looking forward the costs of operations and maintenance is expected to increase to achieve the maintenance obligations specified below.

# Standard of care

The standard of care is commonly determined by the action or inaction a reasonable, professional person with similar training would take in a similar situation under similar conditions. In some cases, a professional organization defines the standard. Other times, it's determined by the typical behavior of professionals in the industry.

### Standards of Maintenance and Repair

Maintenance standards will be part of the contract negotiations. Discussions should include the following items:

- Transmission pipeline
  - Maintenance of right of way annual clearing and brushing. Major brushing (every 7 years). The difficulty in reaching some of the vegetation may require contracting for the use of mechanical brushing equipment.
    - One of the priorities is to remove the large trees growing over and next to some sections of pipeline.
    - Clearing is necessary to maintain access for inspection and repairs.
    - Identify on a GIS map the landowner or easement holder responsibility for maintaining the right of way.
    - The PTPC has a cost sharing agreement with the Jefferson PUD for the maintenance of powerline rights of way that serve the mill. Where there is an overlap of the pipeline easement with the transmission line there is an associated benefit for the rights of way clearing and brushing.
  - Encroachment enforcement and gate coordination. As the easement owner, the City is responsible for addressing the necessary enforcement actions.
  - Right of way staking and monument protection.
  - Air relief valves and drain valves annual inspection and operational and exercising check.
  - Maintenance of air relief/hydrant valve boxes. Eventual replacement of wood boxes with more secure concrete boxes with locking lids.
  - Coordination with logging and construction operations. Underground utility locates as necessary.
  - Culverts Periodic condition assessment with an annual inspection and check after major storms. Clean and replace as required to maintain proper function.
  - Flow meter maintenance and calibration Flow meters to be repaired and replaced as necessary. Meter readings to be reported daily to the City. Calibration should be checked annually.
  - Valves annual inspection and operational and exercise check.
  - Cathodic protection system annual inspection and operational check and follow up repairs.
  - Leak repairs if necessary, temporary until pipeline shut down then permanent to approximate lifespan of pipeline with restoration of corrosion protection.
- Diversions
  - Valves annual inspection and operational check.
  - USGS staff gage maintenance USGS service visits 3-4 times per year with annual funding requirement.
  - o Big Quilcene diversion buildings (Houses and outbuildings) and grounds maintenance -

- Painting, roofing, fencing, electrical, septic, and general maintenance and repairs as required.
- Roads pothole filling and brushing as required.
- Lords Lake
  - Dam maintenance and monitoring daily inspection; monthly piezometer and seepage monitoring; clearing, brushing and hole filling as required.
  - Annual debris removal from lake.
  - Spillway weekly inspection and cleaning as required.
  - Valves annual inspection and operational check.
  - Fence monthly inspection and repairs as required.
  - Survey monuments survey on 5-year cycle.
- City Lake
  - Valves annual inspection and operational check.
  - Fence monthly inspection and repairs as required.
  - Buildings and grounds Fencing, electrical, septic, roofing, painting, and repairs as required.

#### Maintenance vs. Capital Improvement

Maintenance costs are expenses for routine actions that keep assets in their original condition; these typically fall under maintenance in the operating budget. On the other hand, capital expenditures/ improvements are investments made to increase the value of the asset and benefit the community.

Generally speaking, both routine and preventative maintenance are classified as such if they are performed to restore the asset's physical condition and/or operation to a specified standard, prevent further deterioration, replace or substitute a component at the end of its "useful life," serve as an immediate but temporary repair, or assess ongoing maintenance requirements.

A capital improvement is performed to boost an asset's condition beyond its original or current state. Capital improvements increase an asset's useful function or service capacity, perform a required extension of "useful life," enhance the quality of services, reduce future operating costs, or upgrade essential parts of the asset.

"Useful life" refers to its lifespan – the length of time that a system or piece of equipment is expected to serve its original purpose. Asset components (like its structural, mechanical, and electrical systems) – as well as the asset as a whole – have their own unique useful lives, which can span a wide range of timeframes. Useful life can be affected by a variety of factors, such as wear and tear, environmental effects, obsolescence (technical or commercial), revised compliance and safety regulations, and more. It may or may not correspond with the item's actual physical life or economic life.

Categorizing an expenditure as either maintenance or as a capital expenditure or improvement is a decision that needs to be made each time any type of maintenance, repair or renovation is performed. To get it right, consider the value of the asset, the intended goal of the work to be performed, the scope of work, the actual result and its impact on the asset's value, depreciation, and equity return.

PTPC accounting definitions for capital include threshold of \$5,000 for a new item with life of 5 years or more. However, \$10,000 would generally be a reasonable cutoff for defining maintenance level projects. Leak repair by definition would not qualify as capital unless it requires sectioning and replacing

pipe. Historically, some leak repairs can cost well in excess of \$50,000 depending on whether the repair is done with the water remaining on or not. These leak repairs have been performed by the PTPC in order to prevent shutting the system down. The City defines capital as equipment purchases of \$5,000 in one year and projects costing \$15,000 with a 5 year pay back. For the purpose of the OGWS, an expenditure of \$10,000 with a life of 5 years or more may be a good definition excluding leak repairs.

#### **Deferred Maintenance**

Unless brushing work is contracted or handled by the PUD, the level of maintenance is dictated by what can be accomplished by the existing staff using pickup trucks, a small tractor with a loader and brush hog, and various manual and powered hand tools. Much of the spring and summer is spent weed eating but does not undertake areas of the pipeline right of way that have been overgrown with larger trees and shrubs. More mechanized brushing equipment would free up time for maintenance of the mechanical infrastructure. There is also value in the pipeline maintenance crew having access to a backhoe and dump truck to assist with everything from culvert maintenance to leak repairs.

## Lords Lake operation

Lords Lake, containing approximately 500 million gallons of water, is typically maintained at full pool level of 34'-6". Drawdown of the reservoir occurs during periods of low stream flow or high turbidity. The diversion system on the Little Quilcene River is operated to supply water to the lake continuously except during turbid river conditions or when stream flows are less than 6 cfs. A 30-inch butterfly valve in the transmission line downstream of the Lords Lake junction allows reservoir filling from the Big Quilcene River by closing the valve. All valves for the reservoir and transmission line are manually operated. The Mill has installed generator for operating lighting and allowing use of a drill motor to operate the outlet gates.

With permission from the Washington State Department of Ecology office of Dam Safety, the reservoir level has occasionally been raised between 1 foot (~25 million gallons) and 2.5 feet (~60 million gallons) during the summer by installing stop logs in the north dam spillway to augment storage for expected drought conditions. Due to the east dam seismic safety concerns, future raising of the lake level is less likely to be approved unless improvements are made to the dam.

Operators perform a daily inspection of the reservoir. Besides routine maintenance and monitoring, dam piezometers and seepage are measured at least monthly.

## River diversions and stream flows

Port Townsend is a cooperator with the U.S. Geological Survey (USGS) for stream flow monitoring on both the Big and Little Quilcene Rivers immediately below the diversions. The stream gages are also used to ensure minimum instream flow requirements are maintained. Stream flow recording on the Big Quilcene River is satellite linked, providing continuous real-time data. The Little Quilcene River staff gage is read once per day by the mill employees during their daily rounds. Maintenance of the stream gages is provided by the USGS through a cost sharing agreement with the City.

The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) and City are cooperators for the Mt. Crag Snow Telemetry (SNOTEL) site on the ridgeline between the Big Quilcene River and Dosewallips River watersheds. SNOTEL monitors snowpack, precipitation, and temperature to assist with water supply forecasts from the melting winter snowpack. Limited access requires the USDA to use a helicopter for the yearly maintenance of the site, adding to the subscription maintenance fees.
# Water supply disruption emergencies

- Big Quilcene Diversion
  - The Big Quilcene River is the only reliable source for most of the year to provide an average of 12-14 mgd for typical City and mill operations. Repair urgency for a failure of the diversion or pipeline between the Big Quilcene Diversion and Lords Lake will depend on the volume stored in Lords Lake and City Lake as well as stream flows in the Little Quilcene River. Lords Lake at full capacity will provide approximately 40 days of normal demand and with continued Little Quilcene diversions that could be extended to 70 days.
- Little Quilcene Diversion
  - Little Quilcene River diversions provide up to 6 mgd most of the year for filling and providing freshwater turnover for Lords Lake. Diversions are often restricted between July and October due to low stream flows. Refilling of Lords Lake after the summer drawdown occurs between October and January. Lords Lake can also be augmented by water from the Big Quilcene River via the outlet connection with the transmission pipeline.
- Transmission line between Lords Lake and City Lake
  - Interruption of the pipeline between Lords Lake and City Lake still leaves City Lake storage available, which is usually kept at a full 140,000,000 gallons. City Lake reservoir will provide several days of supply for both City and mill consumption or, for a lengthy transmission line outage, could provide 3-4 months of supply if reserved for municipal use only.
- Transmission line between City Lake and town
  - Major transmission line leaks require shutting off water at City Lake to prevent damage to surrounding properties and State Highway 20, while smaller leaks may be repaired with a repair band clamp or slowed enough to repair when the mill is shut down for other maintenance. A waterline shutdown requires the mill to cease operations, preferably with sufficient lead time to conduct an orderly shutdown, and typically disrupts operations for 24 hours. Municipal water availability will be limited to whatever treated water is in storage at the time, typically 5-6 million gallons, which is generally sufficient for 3-4 days of supply.
- Seasonal Water shortages
  - The City of Port Townsend reserves water in City Lake and/or Lords Lake with the goal to have City Lake at least half full (22' 6" – 70MG) on November 30th. The Paper Mill will cease production and limit water use to that essential for health and safety (an estimated 1-2 mgd) when Lords Lake is empty or if the volume of water reserved in City Lake for municipal use is reached.

### **Emergency Repairs**

- Small scale repairs
  - Pipeline repairs between the diversions and City Lake are typically dealt with by shutting down the Big Quilcene diversion and/or Lords Lake and replacing the broken air release valve or welding over the leak.
  - Smaller leaks between City Lake and town may be stopped with a repair band or slowed down sufficiently to either weld the leak during a scheduled mill shutdown or may need a repair clamp, which is considered a permanent repair.

- If the leak can be repaired with a clamp a company specializing in that type of work will have to measure and fabricate the clamp, which requires several days and costs around \$50,000. Installation of repair clamps has been paid for by the Mill to avoid the cost of a shutdown.
- Repair excavation services are typically contracted with a local construction company and paid for by the mill.
- Large uncontrolled leaks between City Lake and town that threaten adjacent properties will usually require a shutdown of the water supply.
  - A shutdown will have financial consequences to the Mill and leaves City customers relying on the volume of water stored in the 1 MG standpipe and 5 MG reservoir until service can be restored.
  - If possible, water shutoff should occur after the Mill has had time to accomplish an orderly shutdown of their operations to minimize the consequences.
  - Most leaks have been able to be resolved with welding the crack or hole. Pipeline crewmembers have often included pipefitters qualified to conduct welding repairs.
- A value engineering study will help to prepare for future emergencies and determine the quantity of spare materials to maintain in storage. Spare materials to have on hand should include:
  - Sections of pipe in sizes 36", 30", 28", 24" and 20" diameter.
  - Air relief valves.
  - Repair bands in sizes 30", 28", 24" and 20".

In the past that has been agreed to by the City and Mill that the Mill would shut down if the volume in the reservoirs reached a certain point. The minimum agreed Mill draw down level has varied depending on time of year and quantity of water remaining in the reservoirs.

- If pipeline failure is upstream of City lake, there is approximately 9 days of available water storage under normal operations. Evaluation of repair time is necessary to determine if Mill shutdown is necessary to maintain municipal water service.
- During an extended water outage the amount necessary to be reserved for City use will depend on the expected duration of the outage and water availability outlook. Since construction of the water treatment facility there is more possibility of drawing City Lake further down as turbidity is not a concern.

## Lords Lake Dam Maintenance

Lords Lake reservoir is an enlargement of a natural lake created by two earthfill dams. Classified as high downstream hazard dams due to the potential for loss of human life and/or property damage if the dams were to fail, the DOE Office of Dam Safety conducts routine inspections every five years.

As the owner, Port Townsend is required to evaluate the safety of the dams and all appurtenant works and to make modifications, as become necessary, to reasonably secure safety to life and property. This includes conducting an annual surficial inspection and maintenance of records of findings and actions taken to correct problem conditions. The annual surficial inspections may be conducted by the owner or by agent(s) designated by the owner, or by a professional engineer. Copies of the annual inspection checklist and other finding documents must be submitted to the DOE within thirty days following the completion. While the dams have been found to be fairly well maintained structures and the North Dam is considered stable, the East Dam has been assessed to have inadequate seismic stability due to liquefaction potential of the lower portion of the embankment during the design earthquake. To assess dam stability, survey monuments are required to be installed along the dam crests and monitored at least every five years. Installation of the monuments is scheduled for 2021. The 2020 DOE inspection also requires retaining the services of an engineering consultant to develop alternatives to improve the stability of the East Dam under seismic loading conditions to ensure the dam meets the minimum stability requirements as per the dam safety guidelines. Conducting the engineering evaluation is planned for 2022.

The City is required to develop and maintain an Operations and Maintenance manual and Emergency Action Plan (EAP). The O&M outlines responsibilities along with monitoring and maintenance requirements of the dams and reservoir facilities. The EAP documents procedures for responding to unusual or emergency situations. Both the O&M manual and EAP must be updated within 180 days after a periodic inspection has been completed by the DOE. Regular upkeep of the dams and spillway clearance are necessary to safely operate the reservoir.

## Easement right-of-way maintenance

Most of the transmission pipeline is located on private property with a typical 30-foot easement granting access for maintenance of the line. Clearing and brushing are necessary for access and to prevent roots or falling debris from potentially damaging the pipeline. Encroachment on the easement with fences and buildings hinders access in some of the more developed areas and could lead to unintentional damage to the pipeline. Most of the right of way crosses commercial timberland. Logging operators need to be informed of the pipeline location and ensure proper cover of the pipeline for their activities. Monitoring Forest Practice applications is the principal method of tracking proposed logging activities. Development of private properties along the transmission line requires that the City be notified by Jefferson County for potential encroachments.

## USFS road maintenance

Road maintenance within the National Forest is primarily a Forest Service responsibility. As the permittee, the City is responsible for the diversions and pipeline access roads commensurate with related use. The road management plan between the City and Forest Service and calculation of provided services is updated annually. Using limited equipment and funding for road maintenance, Mill employees assist with some pothole filling, roadside brushing and culvert clearing along the transmission line right of way. Storm damage and diversion repair work has occasionally provided additional funds for major road maintenance projects.

## **Cathodic Protection**

Cathodic protection (CP) inspection of the transmission line is conducted annually by contractors specializing in corrosion protection and is paid for by PTPC. Previous surveys have determined that the pipeline is not adequately protected at most locations tested and influence from the CP system ends on the upstream section of the pipeline near Lords Lake. The OGWS pipeline needs additional rectifiers/anode beds installed to establish adequate protection in areas with little or no corrosion protection. However, prior to upgrading the CP system, an electrical short connecting the transmission line to the Mill piping needs to be located and removed.

## Fencing Repairs

Fencing around critical water system infrastructure is necessary to provide a measure of security, particularly considering the level of staffing. Forested areas around the reservoirs create an ongoing maintenance problem with trees damaging and making it more difficult to monitor the condition of the fencing. The fencing is also often compromised by intruders seeking access to the reservoirs. Small repairs are handled by the pipeline crew on as needed basis while larger repairs are contracted out by the mill. Most repairs have been considered an annual maintenance expense. Windstorms which damage large sections of fencing have been considered "an act of God" under the current contract.

## Security

Pipeline crew members visit the diversions and reservoirs at least once per day. However, the reservoirs are an attractive nuisance, and it is an ongoing problem to repair damage from vandalism. Trespassing at Lords Lake is a particular problem due to its isolation and lack of a fulltime caretaker. Additional remote monitoring and stepped-up prosecution is needed to curtail the problem.

Desire for a public access trail along the pipeline right of way and through City owned property at City Lake would create additional security problems. Protection of the municipal water supply would require hardening access points to the pipeline such as valve boxes, installing better fencing/barriers and having more intrusion detection measures around City Lake. In addition to the capital cost for installation, there would be higher ongoing annual costs to maintain these security measures.

Both diversions and Lords Lake facility controls are manually actuated requiring physical access to operate these parts of the water system. City Lake operation is SCADA controlled, necessitating additional cyber security measures to prevent malicious activities that could threaten operation of the system. The City of Port Townsend implements SCADA security measures and permits Mill pipeline crew members limited online access for monitoring purposes. Operations should include a periodic review of physical and cyber security requirements.

## Permitting

Operation of the OGWS is contingent on the US Forest Service Special Use Permit approval for the diversion facilities on the Big Quilcene River, Little Quilcene River, and portions of the transmission pipeline that are located on Forest Service property. The National Forest is administered for various renewable resources including water but must consider the sustainability of other resources including wildlife. Current FS permitting for the Big Quilcene diversion pipeline mandates the maintenance of an instream flow of 27 cfs below the diversion if naturally available. Balancing of the relative values of the various resources may dictate future permit conditions, such as changes to the maintenance of minimum instream flows. The three Special Use Permits issued to the City by the Forest Service in 2009 expire on 12/31/2029. Discussion for the renewal process should be started with the FS 2-3 years prior. The 2009 renewal process cost approximately \$400,000 for various studies and reviews.

## Watershed Protection

In coordination with other local, State and Federal agencies, Port Townsend monitors and manages activities to prevent or minimize threats to source water quality. As the OGWS operator, PTPC monitors activities and water quality trends daily, particularly around the critical headwork facilities, transmission pipeline and reservoirs. Staffing shortages and budget cuts at the Forest Service have reduced watershed monitoring by the Federal government. In order to maintain a minimum level of monitoring

and control, entities such as the City will have to increase watershed patrols or develop alternative cost sharing agreements.

## **Operational Changes Analysis**

### Transmission pipeline operational deficiencies:

During certain times of the year or when demand of both the City and the Paper Mill are at their highest, the inlet pressure to the City's Water Treatment Facility declines below the threshold required for plant operation. In order to achieve the 4.5 mgd maximum treated water capacity of the treatment plant, the plant's inlet PRV must be set to 65 psi or higher. If the inlet for the PRV is operating at less than 10 psi pressure differential the PRV ceases functioning and the outlet pressure matches the inlet pressure until the 10-psi pressure differential and valve operating water cover are regained, which is often 10-20 minutes. If flows in the transmission line exceed 14 mgd, pressure declines below 65 psi at the raw water inlet to the treatment plant as a result of friction loss in the pipeline near City Lake. The following plots illustrate the scenarios of when pressure loss is a problem. The effect of this pressure loss can be an automatic shutdown of the city's treatment facility. This is particularly problematic in the summertime when city demand is higher and mill cooling water consumption rises due to the warmer feed water.

Reducing the treatment plant PRV pressure setting acts to partially stabilize plant operation at a lower flow set point. However, this may not be sufficient to produce treated water for higher demand days or boost flow during a fire or waterline break to prevent loss of distribution system pressure. Even at lower pressure settings large fluctuations in mill consumption can still trip the plant offline.

Finished water reservoir storage allows for some variation in water production. Declining storage will result in a reduction of distribution system pressure and compromise emergency storage requirements. Throttling the plant production back or shutting it down overnight reduces the chances that a manual reset is required but this is when refilling the reservoirs typically occurs in conjunction with reduced water demand. Future City growth or resumption of water service to the Tri Area will aggravate the pressure issue at the treatment plant.

The Paper Mill hog fuel boiler requires flushing every 2-4 hours with a flush volume of approximately 1000 gpm for 5-10 minutes. These periodic flushes are the likely cause of the short-term increase in pipeline flow that results in pressure drops at the treatment plant. The following figure illustrates volatility in flow rates throughout the day.





The following table illustrates min and max flows as pressures on a 5 min increment basis.

	June	July	August	September	October	November	December	January	February	March	April	May
Instantaneous Data (5	min. Samples)											
Ave Pressure	183.67	182.89	187.38	189.94	206.51	209.65	191.92	190.32	192.18	191.73	188.89	188.79
Min Pressure	160.80	158.22	130.68	165.25	115.50	67.51	157.23	150.60	150.82	154.23	160.50	157.76
Max Pressure	220.72	213.26	215.61	216.54	241.58	237.23	217.78	218.03	226.84	225.68	216.40	217.67
Ave Flow	11.79	11.73	10.88	11.00	7.81	8.32	11.27	11.59	11.38	11.27	11.42	11.08
Min Flow	6.25	8.11	6.21	7.52	(0.02)	2.07	7.71	7.44	4.53	5.82	7.90	6.65
Max Flow	15.15	15.71	14.27	13.85	14.24	13.40	15.69	16.79	15.32	16.15	14.93	15.25

The following table illustrates min and max flows and pressures on an hourly basis

	June	July	August	September	October	November	December	January	February	March	April	May
1-hr Data												
Median Pressure	182.59	181.54	188.09	189.86	194.50	208.09	191.44	190.67	191.96	190.91	187.73	187.89
Min Pressure	167.73	159.56	157.94	168.28	168.96	71.80	163.08	166.89	161.08	171.32	171.63	171.30
Max Pressure	216.88	211.20	209.32	211.83	239.30	234.79	212.37	217.78	222.94	222.65	212.70	214.51
Median Flow	11.94	11.91	10.96	10.98	10.71	8.92	11.40	11.51	11.42	11.45	11.57	11.20
Min Flow	6.72	8.46	6.63	8.05	(0.02)	2.38	8.42	7.94	4.71	6.19	8.31	7.55
Max Flow	14.14	14.22	13.25	13.50	13.23	12.06	14.51	14.96	13.73	13.75	13.39	13.24

#### The following table illustrates min and max flows as pressures on a daily basis

	June	July	August	September	October	November	December	January	February	March	April	May
/erage Day Data												
Median Pressure (psig)	182.82	181.89	187.90	190.59	191.92	206.80	190.39	191.11	191.58	190.81	187.68	188.30
Min Pressure	177.37	173.54	172.21	178.65	183.88	177.30	177.23	178.73	185.46	184.07	182.46	180.98
Max Pressure	201.95	197.18	200.08	201.10	238.17	232.26	205.86	205.43	205.31	212.35	204.90	203.86
Mill Average Flow (MGE	11.77	11.73	10.90	10.98	7.96	8.20	11.23	11.60	11.37	11.27	11.43	11.06
Mill Median Flow (MGD	11.86	11.94	11.02	10.89	10.95	9.06	11.47	11.50	11.40	11.46	11.58	11.16
Mill Min Flow	9.31	10.07	7.70	9.61	(0.00)	2.37	9.22	9.82	10.01	8.24	9.43	9.09
Mill Max Flow	12.62	12.68	12.20	11.98	11.84	10.16	13.20	13.49	12.13	12.29	12.24	12.04
Mill Volume (MG)	353.0	363.7	337.9	329.5	246.8	245.9	348.0	359.7	329.8	349.5	342.9	343.0
City Average Flow (MGE	1.40	1.49	1.52	1.09	0.86	0.80	0.76	0.75	0.74	0.78	0.91	1.03
City Median Flow (MGD	1.36	1.50	1.46	1.05	0.85	0.83	0.75	0.74	0.75	0.75	0.89	1.02
City Min Flow	1.06	1.06	1.09	0.72	0.62	0.58	0.61	0.24	0.57	0.74	0.74	0.77
City Max Flow	1.75	1.98	2.18	1.58	1.01	1.00	0.97	1.44	0.86	0.86	1.16	1.67
City Volume (MG)	42.1	46.2	47.2	32.6	26.6	24.1	23.4	23.2	21.5	24.1	27.2	31.9
Combined Average Flov	13.17	13.22	12.42	12.07	8.82	9.00	11.98	12.35	12.11	12.05	12.34	12.09
Combined Median Flow	13.22	13.44	12.48	11.93	11.80	9.89	12.22	12.24	12.15	12.21	12.48	12.18
Combined Volume (MG	395.1	409.9	385.1	362.1	273.3	270.0	371.5	383.0	351.3	373.6	370.1	374.9
Annual Volume Mill	3,950	MG	12,122.08	Acre-ft								
Annual Volume City	370	MG	1,135.81	Acre-ft								
Annual Volume Combin	4,320	MG	13,257.89	Acre-ft								

The above analysis for June 2019 through May 2020 illustrates the how the min and max conditions greatly average out over a 24-hour period compared to instantaneous conditions.

The illustrations below are a representation of the both the City and Mill plant operational schematics respectively for reference.



Several potential solutions have been identified to help remedy the treatment plant pressure operational deficiency.

1. Create increased storage at the PTPC for batch flushing operations. This would require minimum 15-20,000 gallon sized tank, high-capacity pump, and associated piping. Cost for this option needs further study.

- 2. Upsize the 6,100 foot section of 24" steel downstream of the City Lake screens. Possible opportunity to include pipeline replacement with ODT trail construction grants. Cost estimate of \$4.7 million in today's dollars.
- 3. Throttle flows at the Mill with a back pressure sustaining valve. Throttling flows may not be a viable solution without an operational change within the Mil. and would require an engineering study with substantial capital outlays.
- 4. Add a booster pump at the headworks of the Water Treatment Facility. Cost for this option needs further study.

The operational pressure issue requires ensuring that future upgrades at the Mill take into account water availability from the standpoint of pipeline capacity.

### Pipeline Reliability

As discussed in the assets white paper, reliability is the key requirement for the Mill. The Mill cannot afford more than a 10-minute disruption to flow without having to shut down the boilers. Restarting the boilers is a 24-hour process. At the current production rate of the Mill, this would result in 1,100 tons of lost production over a 24-hour period. Production startup normally begins 24 hours after the pipeline is operational again. The lost opportunity in terms of expenses and lost revenues for being down is \$600,000 per day in today's market.

### Cathodic System

The cathodic protection system requires an annual inspection and testing to ensure all of the components are functioning property. This work includes a visual inspection of equipment, recording rectifier electrical measurements and measuring structure-to-soil potential at representative test locations for the purpose of evaluating the level of cathodic protection being received. This contracted service costs \$8000.

### Lords Lake Dam Earthquake Retrofit

The Lords Lake East Dam is considered to be in poor condition based on the dam not meeting the current minimum stability requirements under seismic loading. This condition assessment is in line with the system used by the National Inventory of Dams to classify dams with a dam safety deficiency recognized for loading conditions which may realistically occur, and remedial action is necessary. The Washington State Department of Dam Safety is requiring that an engineer develop alternatives to improve the stability of the East Dam under seismic loading conditions to ensure the dam meets the minimum stability requirements as per the dam safety guidelines; and, to reduce earthquake-induced embankment deformations to minimize the risks of an uncontrolled release of the reservoir contents. The engineering evaluation is planned for 2022.

### **Operational Efficiencies**

Manual control of the water system, equipment shortfalls, and lack of automated monitoring capability has led to excessive time spent in hands-on operation and commuting between facilities. Capital improvements that would provide time and possible future cost savings include:

- Automated control valves at the Big Quilcene Diversion, Little Quilcene Diversion, and Lords Lake. This would allow an operator to remotely make adjustments and avoid having to commute between facilities.
- Telemetry for remote monitoring of the Little Quilcene River stream flow.

- Telemetry for Big and Little Quilcene diversion meter monitoring.
- Remote security system monitoring of diversions, Lords Lake and City Lake facilities.
- Automated screen cleaning of Big and Little Quilcene diversions.
- Brush mower for clearing of rights-of-way and Lords Lake dams.

### Projected Operations and Maintenance Costs

Based on standard of care identified in this white paper, a projected annual operations and maintenance is provided. This budget assumes continued operations and maintenance being provided by the PTPC with the City providing oversight, regulatory compliance, financial management and watershed management.

OGWS Projected Operations and N	Maintenance Proforma	
Description	Annual Cost	Subtotal
Description	Annual Cost	JUDIOLAI
PTPC Costs for Operations		\$415,700
Labor (3 FTEs)	\$ 275,00	)
Care taker housing	\$ 12,00	2
Equipment & Supplies	\$ 72,00	0
Leases	\$ 21,00	0
Fuel	\$ 15,00	0
Phones	\$ 3,70	0
Contract maintenance	\$ 17,00	0
Increased Cost to meet Standard of Care		\$ 40,000
Brushing	\$ 10,00	כ
Roads	\$ 10,00	0
Valve Boxes	\$ 5,00	0
Culverts	\$ 5,00	0
Security	\$ 5,00	כ
Cathodic Surveys	\$ 5,00	0
Emergency Repairs		\$ 60,000
Supplies	\$ 30,000	0
Hired Labor	\$ 30,00	0
City Watershed Management		\$102,000
Labor	\$ 70,00	0
Supplies/Equipment	\$ 5,00	2
Permits and Environmental Monitoring	\$ 27,00	0
City Administration/Fees	\$ 200,000	\$ \$ 200,000
	Total	\$817,700

The total operations and maintenance cost per year going forward is estimated at \$818,000 in 2021 dollars. Typically, O&M costs are indexed to inflation when analyzing utility rates. The operational costs provided here will be inserted into a financial model to help establish the cost of water when combined in the capital investments projected in the Capital Plan.

## Conclusion

This white paper demonstrates that costs for O&M looking forward are expected to increase based on a standard of care and work necessary to support long-term investment in the system. This white paper assumes the PTPC will continue to operate the system and the City will continue to provide oversight and watershed management based on the ability for the Mill to operate the system more cost effectively and, most importantly, based on the Mill's need for reliability to offset lost opportunity costs due to Mill down time. In a new partnership agreement, collaboration will be the key especially with the inclusion of large capital replacement projects. The costs for both parties will need to be monitored and evaluated throughout the term of the agreement.

## References

- 1. 2009 Big Quilcene Special Use Permit
- 2. 2009 Big Quilcene Residence Special Use Permit
- 3. 2009 Little Quilcene Special Use Permit
- 4. Mill Pressure and Flow Data Spreadsheets
- 5. Lords Lake Level and Diversions Multi-Year Summary 1992-2020
- 6. Olympic Gravity Water System Operating Manual (3-31-20)

# Olympic Gravity Water System Capital Analysis White Paper

### October 13, 2021

## Preface

The City of Port Townsend and Port Townsend Paper Mill have a historical partnership of supplying water to the Quimper Peninsula, City of Port Townsend, and the Port Townsend Paper Mill dating back to 1928. The City and Port Townsend Paper Company are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System in the late 1920's, the development of an agreement between the City of Port Townsend (City) and Port Townsend Paper Company (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, eight technical white papers break down information into manageable segments. In the following specific white paper categories, the City and PTPC have worked together to develop these white papers to provide information for consideration during the negotiation of the agreement.

- 1. Assets: Understanding each entities assets and capacities that support investment decisions.
- 2. Stakeholders: The public as well as many governmental organizations may be potentially interested stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to include in planning for the future.
- 4. Operations: Operational requirements, efficiencies, cost, and reliability as well as distinguishing between capital and ordinary maintenance is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and should be informed by a value engineering study for system reliability and to reduce costs.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiations and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the City of Port Townsend City Council and the Port Townsend Paper Mill Board of Directors.

The following white paper addresses an analysis of capital needs, costs and timing for the next 20, 40, as well as projecting forward 100 years. It is anticipated that an agreement with the Mill will have a time frame on the order of 40 years.

## Introduction

The OGWS system is a capital intensive system with a total estimate value of \$200 to \$300 Million if it were to all be constructed from scratch today. The City of Port Townsend struggled with maintaining a reliable water supply at the turn of the century. The investments made in 1927 and 1928 are providing tremendous benefit for the community today. This benefit is manifested in the cost of water essentially being the cost to operate the system. Under the current lease agreement, there are no obligations for capital and the Mill covers the cost of operations. However, the City and PTPC have significant investment needs in the relatively near future to sustain this water system. If the partnership begins saving funds, the system can be replaced without massive debt issuance. This white paper identifies a number of capital needs have been identified including several related to replacement of existing infrastructure. An analysis of the following capital components is included:

- 1. Historical capital investment and asset studies.
- 2. Inventory and condition assessment of assets, providing a synopsis of system components and capital replacement needs.
- 3. Identification of failure risk potential, providing a summary of risks.
- 4. Capital Investments to support operational efficiencies includes capital needs to improve operations and save annual O&M costs.
- 5. Capital investment needs driven by regulatory agencies, providing capital estimates for needs to comply with permits.
- 6. Capital investment for system capacity, identifies capacity improvements.
- 7. Capital improvement plan, providing a summary of planned investments over time.
- 8. Unanticipated capital needs identify possible capital reserve necessary for unforeseen needs.

Utilizing the information provided in this white paper with a value engineering approach to balancing operational costs, reliability, and sustainability results a recommended capital investment program.

# History of Capital Investment and Past Studies

Construction of the Big Quilcene diversion and transmission pipeline was completed in 1928 for the cost of \$750,000 or \$11,400,000 in today's dollars. Replacement of the wooden pipeline sections and construction of the Little Quilcene diversion and Lords Lake reservoir cost around \$2,200,000 or \$21,700,000 in today's dollars. The table below details some of the capital improvements undertaken since the construction of the OGWS.

	Veen	Design	Dollar Value	Dollar Value	
	rear	Life	e e	e e	
Asset Desc.	Constructed	If Avail.	\$Install YR\$	\$ 2021 <b>\$</b>	Notes
Big Quilcene	1928				
Diversion					
<b>Big Quilcene Diversion</b>	1952				Construction of
Upgrades					sluiceway
Big Quilcene	1986				Construction of
Diversion Upgrades					concrete apron
Big Quilcene	1994	100			Generator oil tank
Diversion Upgrades					containment
Big Quilcene	1995	75			Rotating screen
Diversion Upgrades					building
					replacement

Big Quilcene	2018	30-40	\$2,319,698	\$2,549,591	Repair of timber crib
Diversion Upgrades					structure and apron
Little Quilcene	1955				
Diversion					
Little Quilcene	1995	100	\$500,000	\$1,134,075	Replacement of
Diversion					timber crib diversion
Reconstruction					
Lords Lake Reservoir					
City Lake Reservoir					
City Lake Outlet	2012/2013	100	\$4,354,076	\$5,601,877	Outlet pipe and flow
Repair					control replacement
Transmission Pipeline	1928				
Transmission Pipeline	1945	100			Replacement of
Replacement					wood stave pipeline
Transmission Pipeline	1955-1972				Replacement of
Replacement					wood stave pipeline
Transmission Line	1986				Snow Creek pipeline
Upgrades					crossing
					replacement
Transmission Line	1994	100	\$59,320	\$138,852	Lords Lake inlet
Upgrades					pipeline extension
Transmission Line	1995				Little Quilcene River
Upgrades					bridge replacement
Transmission Line	2015		\$83,242	\$100,558	Andrews Creek
Upgrades					crossing support
					replacement
Transmission Line	2015		\$32,072	\$38,743	Snow Creek bank
Repair					stabilization
Transmission Line	2015		\$228,252	\$275,735	Big Quilcene storm
Repair					damage road repairs
Big Quilcene House	1941	100			
Big Quilcene House	2013	40	\$11,697	\$15,049	Roof replacement
Upgrades			4		
Big Quilcene House	2018		\$21,425	\$23,548	111
Upgrades			405000		
Big Quilcene House	2020	10	\$3500?		Generator
Opgrades		100			replacement
	2012	100			
City Lake House	2013		\$3000?		Electrical rewiring
Upgrades					
City Lake House	2013	40			Roof replacement
Upgrades					
City Lake House	2014	40	\$12,762	\$15,910	Insulation and siding
Upgrades			400	<b>1a c</b> = : -	replacement
SCADA	2013	7	Ş28,380	\$36,513	Big Quilcene SCADA
			4	4	system
SCADA Upgrade	2020	10	\$7,848	\$8,099	Changing service for
					mill connection

Water system studies related to the condition and capital improvements since 1990 are noted below.

		Dollar Value	Dollar Value	
		@	@	
Study	Year	\$Study YR\$	\$ 2021 <b>\$</b>	Notes
Lords Lake Dam	1990/91	\$42,515.18		
Seismic Study				
Special Use Permit	1998-2009	\$373,463.17		
Renewal				
AGI Geological	1999	\$14,000		
Hazards Analysis of				
OGWS Pipeline				
RW Beck OGWS	2000			
Estimated				
Replacement Cost				
Study				
CDM Engineering	2001			
Evaluation and				
Preliminary Cost				
Estimate				
Increased Reservoir				
Capacity				
Lords Lake				
HDR Pipeline	2016			
Replacement Opinion				
of Cost				
HDR OGWS Hydraulic	2016	\$9,950		
Analysis				
Norton Corrosion	2018	\$21,909		
Close-interval				
Cathodic Protection				
Survey				

While not all costs are available and translatable to current year dollars, the reality of constructing this system today from scratch would be a major undertaking. Just the replacement of the pipeline and major component that need attention in the next 75 years is valued at \$160 million in current year dollars. This estimate does not include the cost that were incurred when the system was built of buying right of way, developing the reservoirs or the recent work on the system. Without getting into these details, it is easy to approximate a total system value of well over \$200 million in today's dollars in order to build the system from scratch.

## Inventory and Condition Assessment

The OGWS consists three main asset categories. These categories include the gravity pipeline, two diversions, and two reservoirs. The following section provides an inventory and condition assessment of each of the assets. This information will be used to develop an investment strategy (Capital Improvement Plan) to facilitate continued reliable operations of the system as a whole.

### Pipeline and Appurtenances

The OGWS Pipeline consists of approximately 29 miles of welded steel pipe. The table in the following section identifies the length of pipeline and its installation date. The length specified in this table represent horizontal projected length. The actual length is longer due to vertical changes in the profile of the pipeline. The actual length of pipe installed may be as much as 5 to 10 percent longer to account for the vertical changes in the

pipeline as shown in the profile schematic below. The pipeline also includes a number of appurtenances that are important to consider. They include 30 feet of right of way, roads, gates, culverts, survey markers, air valves, blow off valves, valve boxes, mainline valves, and cathodic protection systems.



Exaggerated Vertical Profile (HDR 2016)

### Right of Way, Roads, and Culverts

Access and maintenance of the typical 30-foot easement is an ongoing challenge for the miles of transmission pipeline. Clearing and brushing are also necessary to prevent vegetation from damaging the pipeline. Encroachment within the easement by fences and buildings hinders access in some of the more developed areas and could lead to unintentional damage to the pipeline. Available equipment for the maintenance of the easements is hand operated tools and a small tractor. The extent of ground to cover will likely require hiring a contractor specializing brushing on a regular basis, possibly every seven years, to keep up with the clearing. Larger trees growing on top of the pipe will require more specialized equipment and experience to safely remove. Additional needs include addressing the gates and access, road maintenance, culvert replacement as well as installing survey monuments that have been destroyed. The partnership needs to devote more resources to keeping in touch with property owners to prevent future encroachments.



Trees Growing Alongside Pipeline

Culverts within the National Forest, State lands and County roadway are maintained by contractors, County Public Works and/or pipeline crew. Many of these culverts have been replaced in recent years. Culverts in other areas of the transmission are generally older and maintained less frequently by the pipeline crew. Some of the culverts have been lost in the undergrowth and lack of access restricts maintenance of others. The pipeline crew has limited equipment, mostly hand tools, to maintain the culverts and clear storm debris. One such strategy for culvert replacement is to evaluate culverts for replacement coincident with logging operations, a wildfire, or other activity that increases the risk for washout. Culverts that feed large drainage areas and have periodic flowing water, should be evaluated and replaced if in poor condition or cleaned if they are blocked to reduce the risk of a washout exposing the pipeline

Finally, many of the easements cross Rayonier Timber property. The easements have very little enforcement power in preference of the pipeline in terms of use of the property creating a potential conflict for responsibility to protect the pipeline during landowner logging and maintenance operations. Strategies for securing more permanent and reliable protection of the pipeline could include land swaps/purchases or improving the protection of the pipeline by renegotiating the easements. Easements also are also coincident with the transmission lines owned by BPA and Jefferson County PUD. The priority of easements for these areas and maintenance program should be established in partnership with Jefferson County PUD for mutual benefit of the organizations and rate payers. Five year prior to pipeline replacement easements should be reevaluated and adjusted as necessary. Installation of crossings and parallel utilities are expected to increase over time driving the need to solidify agreements and roles and responsibilities.

Capital costs for each of these elements of easement and land management are estimated as follows:

Easement survey marking Vegetation Clearing to catchup Road Maintenance/gates Culvert Replacement Land swaps or easement rights purchases opportunity permits \$50,000 once in 20 years.
\$75,000 every 10 years
\$25,000 every 10 years
\$25,000 replacing up to 5 culverts every 5 years
\$200,000 prior to pipeline replacement/as

#### Air valves and Boxes

There are approximately 106 air valve boxes along the length of the pipeline constructed of pressure treated 2X material. The wooden boxes are in various states of repair and require around 40 hours of maintenance each year. Vehicles have periodically driven into the boxes shearing off the air valve resulting in water blasting from the transmission line. To provide protection from accidental damage and vandalism the wood air valve boxes should be replaced with locking lid concrete boxes. The estimated cost to upgrade 25 air valve boxes is \$125,000 in 2021 dollars.

Many of the air valve boxes are filled with soil which allows the bi-metallic connections of the valves to affect the structure-to-soil potentials. The soil should be removed from inside these boxes to allow for the use of the 100 mV criterion for cathodic protection.



Air Valve Box

### Blow-offs

Numerous pipeline blow-offs are inoperative. Generally located at the bottom of the pipeline, they are usually buried and inaccessible for maintenance. The blow-offs would be used to drain the pipeline and flush sediment from the low spots. At this point, there is no need to invest capital in these valves as they are seldom used and would be addressed during pipe replacement.

### Steel Pipe Risk Assessment

The 30-mile pipeline is by far the largest individual asset in the OGWS system. As such, a considerable scope of this capital white paper dedicated to the pipeline. The analysis of the pipeline begins with a risk factor analysis concerning an inventory of the pipeline and it's age. The location survey developed in 2020 provides information concerning the pipelines location relative to geography, critical areas, and impacts to surrounding properties. The following risk factor analysis is intended to provide a high level relative rating of each section of pipeline based on age reflecting factors that result in higher consequences and/or higher likelihood of a pipeline failure. In brief, these risk factor categories are described and weighted as follows.

- **Cathodic Protection:** Corrosion impacts to the pipeline are likely higher in areas with partial or no cathodic protection making leaks more likely.
- The **pipeline age** is a risk is described in great detail in this white paper as it relates to quality of material. The longer the pipe is in the ground the more time corrosion can impact its integrity.
- **Pressure zones** identifies where areas of high pressure exist making a leak more likely and the resulting damage greater.
- **Surrounding infrastructure** is a category that identifies higher risk when a pipeline break would impact infrastructure such as HWY 20 or 101, or surrounding homes, powerlines, etc.
- **System redundancy** identifies how a pipeline break would impact reliability. This is described in the operations paper as:
  - A break between the Big Quilcene diversion and Lords Lake has the least impact due to the ability to continue to obtain water from Lords Lake.
  - A break between Lords Lake and City Lake requires Mill shutdown, but the City can continue to operate drawing on the City Lake reservoir.
  - A break between City Lake and town is the greatest risk to reliability which would require an immediate system shutdown for the Mill and the City would only have approximately 3 days of water supply.
- Previous break history identifies areas where there is a history of pipeline leaks.
- **Critical Areas** are areas identified by Jefferson County as requiring special conditions in terms of environmental impacts. These areas include wetlands, unstable and steep slopes, geologically hazards, erosion hazards, etc. Critical areas present not only risk to the pipeline, but also make repairs and replacement more challenging and costly.
- Accessibility to Repair identifies those areas that are inaccessible as having greater risk. In order to fix a pipeline break, these areas would require extra work in order to access the break with heavy equipment.

The following key provides 0-3 rating for each of these categories.

Risk Factor	Score
Cathodic Protection	
No Cathodic	3
Partial Cathodic	2
Full Cathodic	1
Pipe Age	
1928	3
1940s – 1950s	2
1960s – 1970s	1
Pressure Zone	
>200 psi	3
150-200 psi	2
100-150 psi	1
<100 psi	0
Surrounding Infrastructure	
State Highways	3
Airport	3
Mountain Roads	1
County Roads	2
Homes	2
Electric Transmission Lines	3
System Redundancy	
Big Quilcene - Lords Lake	1
Lords Lake - City Lake	2
City Lake – Town	3
Previous Break/Leak History	
3 or more breaks in 20 years	3
2 or less in 20 years	2
No break history	1
Critical Area (Jeff. Co.)	
3 or more overlapping critical areas	3
2 critical areas	2
1 critical area	1
0 critical areas	0
Accessibility to Repair	
Steep slopes/no roads/wetlands	3
Trails that need improvement/crossing	2
highway	
Easy access	1

Averaging the scores for each segment of pipe, this table provides valuable information to help the partnership prioritize making of investments over the next 50 years. The table illustrates that the 1928 sections of pipe rate the highest in terms of risk not only because of age, but due to the other risk categories as well.

	Average	Risk	Score	1.22	1.22	1.33	1.44	1.78	1.33	1.56	1.56	2.56	1.89	1.67	1.44	1.33	1.33	1.44	1.78	1.78	2.00	2.44	2.22	1.44	1.44	
	Impacts to	Other	Infrastructure	T	1	1	1	1	1	1	1	3	3	1	1	1	1	2	3	3	5	8	2	2	1	
		Accessibility	to Repair	τ	1	1	1	1	1	2	2	3	3	2	2	2	τ	τ	T	2	8	τ	2	τ	1	
	Redundancy	of Water	Supply	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	1	
ors		Wet	soils	1	1	1	2	3	1	1	1	3	1	1	1	1	1	1	1	1	1	3	1	1	1	
isk Fact	High	Pressure	Zone	0	0	2	2	2	1	2	2	3	3	3	2	2	2	3	3	2	2	3	3	1	1	
ents and <b>R</b>	Previous	Break/Leak	History	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	1	
eline Segm	Critical Areas Land Slide,	Steep	Slopes etc.	2	2	1	1	2	1	1	1	3	2	1	1	0	0	1	1	1	3	τ	τ	0	2	
/S Pipe		Pipe	Age	1	1	1	1	2	2	2	2	3	1	3	2	2	2	1	2	2	1	3	3	1	2	
NDO		Cathodic	Protection	3	3	3	3	3	2	2	2	2	1	1	1	1	2	1	1	1	1	2	3	3	3	
		Length	(miles)	0.69	1.98	2.27	2.82	2.55	2.07	0.89	0.81	1.59	0.09	0.47	0.4	0.49	1.04	1.4	0.34	1.16	0.8	5.7	0.4	1.14	1.49	30.59
		Thickness	(inches)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.375	0.25	0.25	0.25	0.25	0.25	0.25	0.1875	0.25	0.25	ż	0.25	
		Diameter	(inches)	36	30	30	30	30	30	30	30	24	24	24	28	30	28	30	30	24	30	30	20	24	20	
		Install	Date	1965	1963	1961	1960	1958	1958	1954	1957	1928	1967	1928	1957	1957	1957	1964	1952	1952	1972	1928	1928	1998	1956	
		Pipeline	Segment	A	В	С	D	ш	ч	Ð	н	_	ſ	К	J	Μ	N	0	Р	Q	R	S	T	N	Х	Total

#### Steel Pipe Investigation and Preliminary Condition Assessment

Except for a few stream crossings, the transmission pipeline is buried from a few inches to several feet below ground making it difficult to accurately assess its condition. Only a few areas have been excavated to examine the pipeline or to repair leaks since it has been installed. Jacob's Engineering was hired to provide advice on steel pipeline evaluation, rehabilitation, and replacement recognizing that pipeline replacement is the major cost factor looking forward. The following information is provided in light of key points provide by Jacob's Engineering pipeline specialists. These points include:

- Replacement of the pipeline with steel or ductile iron is the appropriate strategy as opposed to slip lining. This is based on the need to keep the pipeline functional, high pressure of the pipeline, loss of pipeline capacity, and costs. Slip lining technology either needs to sufficiently advance or would only be viable if water demands were to decrease significantly or possibly in small sections of difficult to access pipeline.
- Useful remaining life is a critical need to establish for budgeting and planning purposes. Life of the pipeline is approaching its expected end with approximately 1/3 of the pipeline 93 years old and the remaining pipeline between 49-76 years old.
- Recommendations include improvements to the cathodic protection system to maximize pipeline life.
- A comprehensive analysis of pipeline condition and continued monitoring is recommended to inform decision making in order to balance risks, reliability, while maximizing pipeline longevity.

Information provide by Jacobs, suggests that the partnership is in a good position to proactively create an investment program for the pipeline using the remaining life to save funds for a systematic replacement program that addresses needs before it becomes a necessary response to an increasing number of pipeline failures.

It is recommended to begin with a comprehensive pipeline evaluation, which includes a condition assessment followed by a remaining useful life analysis. The condition assessment program for the OGWS pipeline includes collecting information on the condition of exterior and interior pipe surfaces. A tiered condition assessment approach would start with lower-cost, non-disruptive technologies, and methods to identify suspected risk factors. Potentially followed by higher-cost, more-invasive investigations that could be implemented in a step-wise approach to target specific higher risk areas identified in the first phase. This will help establish the useful life of the entire pipeline and allow the partnership to plan for its eventual replacement. The estimated cost to conduct the evaluation is \$500,000, with a target completion date by 2023 in coordination with cathodic system upgrades as described in the Cathodic Section below.

#### Pipeline Design

The longevity of the pipeline is based not only on its condition, but is impacted by the type of pipe, age of pipe (era), and it's design pressure rating. The risk table above illustrates the pipe age. Pipe age provides an indicator of the technology in steel pipe fabrication at the time of installation. In general, steel pipe technology, welding, and coating systems have advanced over the years. Welded steel pipe was a new technology in the 1920s when used for the construction of the 1928 steel sections of the OGWS. The pipe has longitudinal welds from the factory in 36' lengths with pieces welded together in the field using butt welds and potentially strap and lap welds. It is likely that the pipe was only welded from the exterior. Steel pipe prior to 1930 had a tensile strength of approximately 50,000 psi with a yield strength of 30,000 psi. The

coatings were a bituminous or asphalt tar type coating. Both steel quality and coatings improved after the 30s and WWII with coal tar enamel coatings and slightly higher strength steel (36,000 psi on average yield strength). Based on observations without design drawings or specifications, it appears that the 1928 sections of the OGWS are consistent with the history of steel pipeline technology applied for water systems. The following table provides an estimate of pressure capacity of the existing 1928 sections of pipeline based on AWWA M11, C200 which specifies that the pipe pressure zones shall be designed for a maximum of 50% of yield at working pressure and 75% of yield at the maximum pressure. This table back calculates these two pressure capacities based on known wall thickness of the pipeline assuming the pipe yield strength is 30,000 psi. It should also be noted that lab tests of pipe material of this era have shown yield stress in the neighborhood of 25,000 psi.

Pipe Diameter (in)	Wall Thickness (in)	Allowable Working Pressure (50% Yield) (psi)	Transient Pressure (75% Yield) (psi)
30	0.125	125	188
30	0.1875	188	281
30	0.25	250	375
24	0.125	156	234
24	0.1875	234	352
24	0.25	313	469
24	0.375	469	703

With working, transient, and field-test pressures known, the pipe wall thickness is determined using Eq 4-1:

$$t = \frac{pD_o}{2s}$$
 (Eq 4-1)

Where:

t = pipe wall thickness for the internal pressure, in.

p = internal pressure, psi

Do = outside diameter of steel pipe cylinder (not including coatings), in.

s = allowable design stress, psi

Based on static pressures of the 1928 section of the pipeline ranging from approximately 200 to 450 psi, there is not much safety factor in the 0.25 inch wall thickness sections of the 1928 pipeline. This is particularly important when considering wall thickness loss due to corrosion of the steel. The above table illustrates that wall thickness in high pressure locations is critical for the integrity of the pipeline and is a reasonable predictor of when leaks may start developing as corrosion continues. In particular there is a question of whether or not the butt welds are the limiting factor for the pipeline given that they were not likely coated from the interior of the pipe. This information also illustrates the importance of following careful operation procedures to prevent pressure surges (transients). Most leaks that have occurred so far have been a weld failure in the winter when the water is coldest. These failures could be further induced by steel contraction putting additional stress on the welds.

Given the design factors and leak history, more attention has been given to the 1928 pipeline sections than the sections installed in the 1950s through the 1970s.

#### Thickness and Visual Condition Assessment

During the past few years, the pipeline has only had a few limited evaluations. PTPC staff have used an ultrasonic steel thickness measuring instrument to assess pipeline thickness when it has been exposed. Additionally, there has been visual inspections of the coating and welds at pipeline excavations. The following photographs and chart provide a summary of this data.



Thickness Measurement



Waterline Live Repair in 2003



*!928 Section at the Airport Illustrating Coating Loss – Photo Summer of 2020* 



1928 Section at the Airport Illustrating Longitudinal weld and Coating – Photo Summer of 2020



1928 Section Near the Elks – 30-inch Diam. With ¼" Wall – Thickness Measurements 4-22-19



1928 Section Near Bayview – 30-inch Diam. With ¼" Wall – Thickness Measurements 4/22/19



1928 Section Between Les Schwab and Mill Road – 20-inch Diam. ¼" Wall – Thickness Measurements 4/19/19

Between 2019 and 2020 steel thickness measurements have been taken at 64 points along the transmission pipeline. Most measurements were taken at the top of the pipeline next to an air valve. Some of the measurements appear to be in excess of the original pipeline thickness, which is either due to problems with the measurement, coatings, welds, or rust nodules. The loss of pipeline thickness is most notable in the 1928 sections of the pipeline as record in the chart below.



Illustrating thickness condition versus age of pipeline

Most recently the pipeline was exposed at two locations in Section S for pipeline thickness measurements and at one location in Section T to replace a small section of pipe with pin hole corrosion leaks. These investigations included measuring thickness around the full circumference of the pipe. Soil samples were collected at the Section T location to assess the corrosion potential of the soils and determine if they may have been the cause of the leaks. Jacob's Engineering provided the following criteria for soil conditions.

- Soil Resistivity Less than 2,000 ohm-cm is considered very corrosive, less than 10,000 ohm-cm is considered moderately corrosive, 10,000 to 30,000 is generally considered mildly corrosive. Corrosion is unlikely at resistivity values greater than 30,000 ohm-cm
- pH Less than 6.5 is considered moderately corrosive; less than 5.5 is considered severely corrosive.
- Chlorides of concern at concentrations greater than 100 ppm.
- Sulfates any concentration can be a concern in wet soils (particularly wet, heavy clays) since sulfates support a certain type of corrosive bacteria.

In Section T at the connect with Section U the Amtest test results indicate the soil can be considered moderately to mildly corrosive. The soil resistivity indicates mildly corrosive conditions, while the pH indicates moderately corrosive conditions. The chloride and sulfate concentrations are both low, and these constituents are not considered a corrosive factor in this situation. Jacobs Engineering also assessed that bacterial induced corrosion was occurring inside a newer pipeline coupling where there was an absence of water flow.

The following photographs illustrate conditions at this particular location near the valve that separates the OGWS from the City Ductile Iron CT Pipeline.



1928 Section of Pipeline at City CT Connection – 20" Mitered bend approx. 10 feet from valve. Illustrates weld condition and coatings failure on exterior of pipe (LT) and interior weld corrosion and small coating failures on inside of pipe (RT).



1928 Section of Pipeline at City CT Connection – 20" underside of pipe 10 feet from valve. Illustrates pitting in steel measure at approximately 0.09 inches.

The general condition of the pipe appears to be consistent with the soil corrosivity tests. The general exterior condition of the exposed pipe did not appear to have significant metal loss, except for significant pitting and pipe penetration at the flange coupling adapter. As previously discussed, it is possible that the corrosion at the location was due to a site specific condition, such as microbial induced corrosion (MIC) or stray current. Some corrosion was also observed along the bottom of the pipe. Metal loss due to corrosion is often more concentrated on the bottom of a metal pipe due to higher probability of contact with groundwater, bedding conditions, and oxygen differential cells.

#### Cathodic Protection Systems

The OGWS pipeline needs additional rectifiers/anode beds installed to establish adequate protection in areas with little or no corrosion protection. A number of studies have been performed and cost estimates have been obtained to address this need. The following section provides a summary of these improvements.

#### Mill Continuity

The OWGS piping is electrically shorted to the Mill piping. There are two underground vaults at the turbine pump house, one on each side of the building, with isolation kits and bond wires inside the vaults. All isolation flange kits tested 100% effective. Until recently bond wires connected the mainline and bypass piping from one side of the building to the other, effectively shorting the mainline to the Mill piping. However, the piping remains shorted after all bond wires were disconnected. This testing indicates an electrical short still exists between the OGWS and Mill piping. The combination of piping at the mill is a large drain on the impressed current for transmission line protection.

#### Elks Area

Structure-to-soil potential data from the survey indicates the pipeline is not adequately protected at the majority of locations tested based on the impressed current -850 mV criterion for corrosion protection. The OGWS pipeline needs additional rectifiers/anode beds installed to establish adequate protection in areas with little or no protection. Previous surveys have indicated that the new rectifier would likely be in the vicinity of

the Elks Club. A full corrosion protection survey should be completed after the pipeline has been electrically isolated from the Mill piping. The new data can then be used to determine protection levels across the pipeline and confirm the location requirement for an additional rectifier(s).

#### City Lake and Airport

The City Lake and Airport cathodic protection systems do not appear to have anode junction boxes for testing. This should be corrected to determine if the anodes are consumed or if there are connection issues in the circuit.

#### Pipeline between Big Quilcene Diversion and Snow creek

Impressed DC current drops off between Snow Creek and Andrews Creek after the southernmost rectifier at Crocker Lake. Cathodic protection between Snow Creek and the Big Quilcene diversion relies upon a limited number of galvanic sacrificial anodes along the pipeline.

The estimated cost to upgrade and repair the cathodic protection system is \$145,000 in 2021 dollars as described below. These investments need to occur sooner than later and are suggested for 2022.

A new impressed current cathodic protection (CP) system has been recommended for installation in the vicinity of the Elks Club where protection is currently lacking. There are two types of recommended systems depending on budget and ability to excavate:

• **\$90,000- \$110,000** Anode Deepwell – Estimate includes the driller for the well (subcontractor), rectifier, anodes, anode components/hardware, junction box, installation support by construction foreman and all mob/demob costs, etc. for installation but does not include costs for trenching or power.

**\$25,000-\$35,000** Anode Distributed Bed – Estimate includes one pre-installation onsite visit for design measurements, a rectifier, anodes, anode components/hardware, construction foreman and all mobilization/demobilization costs, etc. for installation. Ideally, a distributed ground bed will be installed perpendicular to the pipeline and ~200 ft away. This allows for better distribution of the CP current. However, if installation is restricted to the right of way, it may require installing the ground bed horizontally along the pipeline.

#### Pipeline Investment Needs Summary

Based on the information available at this time the recommendation for the purposes of this analysis is to assume a 100 year life for the 1928 sections of pipeline. The newer sections of the pipeline may have a useful life beyond 100 years, but likely not more than 125 years. This assumption assumes that cathodic protection is actively working to protect the pipe as much as possible. Cathodic protection should be upgraded as soon as possible, or it will become less effective as the coatings and pipeline continue to deteriorate. At a minimum, a tier 2 evaluation of the pipeline condition and ongoing evaluations of the pipeline condition is recommended.

See OGWS CIP spreadsheet for OGWS pipeline capital improvement project funding for 1928 and 1952-1972 pipeline replacement.

### Diversions

#### **Big Quilcene Diversion**

Overall, the Diversion Facility is in good condition and functioning well. Structural repairs in 2018 corrected known deficiencies and are expected to provide a projected 30-40 years of service life to the diversion. The

manual chores of screen cleaning and valve operation are concerns that should be addressed in future improvements.

The caretaker house and outbuilding are in only fair condition. The rotating screen house was totally rebuilt 20 or so years ago but the other buildings are 70-90 years old. The house roof has been replaced recently but due to the building's small size, would not provide a suitable residence for most families. If the caretaker function is continued at the Big Quilcene diversion the house and outbuildings should be replaced within the next 20 years.

The estimated cost for replacement of the Big Quilcene Diversion is \$6,462,967 in 2021 dollars. The project should be planned to be initiated in 25 years to begin NFS permitting process that will likely take 5-10 years. The estimated cost for replacement of the house and outbuildings is \$450,000 which should be planned for in 15 years.

#### Little Quilcene Diversion

Major reconstruction of the Little Quilcene River diversion occurred in 1995. Only minor repairs to the concrete structure from debris erosion and maintenance of the building structure are expected in the foreseeable future.

The estimate cost for capital improvements for this diversion is \$50,000 in 2021 dollars and is planned for 30 years in the future.

### Reservoirs

#### Lords Lake

The Lords Lake North Dam and East Dam are well maintained and operated according to the Washington State Department of Ecology Dam Safety Office. The condition assessment of the Lords Lake North Dam is considered to be Satisfactory. This condition assessment is in line with the system used by the National Inventory of Dams (USACE, 2008) to classify dams with no existing or potential dam safety deficiencies recognized.

The Lords Lake East Dam is considered to be in Poor condition. This condition assessment is in line with the system used by the National Inventory of Dams to classify dams with a dam safety deficiency recognized for loading conditions which may realistically occur, and remedial action is necessary. This assessment is based on the East Dam not meeting the minimum stability requirements under seismic loading.

The Washington Department of Ecology Office of Dam Safety is requiring the City to have an engineering consultant develop alternatives to improve the stability of the East Dam under seismic loading conditions to ensure the dam meets the minimum stability requirements as per the dam safety guidelines; and, to reduce earthquake-induced embankment deformations to minimize the risks of an uncontrolled release of the reservoir contents. The estimated cost of the engineering study is \$250,000 and improvements \$4 million.

Security at Lords Lake is an ongoing concern due to its remote location and limited staff visits. The lake is an attractive nuisance primarily due to fishing, even though it is closed to public access. Vandalism of the fence around the lake is frequent problem. Incorporating remote monitoring/alarms and stepped-up prosecution could reduce the trespassing and damage.

The estimated cost for security improvements at Lords Lake is \$10,000 for cameras and replacement of half the fencing in 20 years at \$100,000.

### City Lake

Recent improvements to City Lake outlet piping replaced much of the infrastructure between the lake and screen room. However, drain lines from the caretaker's yard to Discovery Bay and screen chamber piping date back to 1928. In addition, the City Lake bypass line was installed in 1954 and inlet piping in 1964. The screen room will eventually have to be replaced as the concrete basins are eroding from cleaning. Incorporating automated screen cleaning should be considered when upgrading or replacing the screen room. The caretaker house is in only fair condition. Due to the building's small size it would not provide a suitable residence for most families. If the caretaker function is continued at City Lake the house and outbuildings should be replaced within the next 20 years.

The estimate cost for capital improvements for the City Lake house, screen chamber and outbuildings is \$650,000 in 2021 dollars and is planned to occur in 15 years. Fence repairs at City Lake are estimated at \$100,000 during the next 20 years

### **Equipment Needs**

Additional equipment such a dump truck, backhoe and articulating brush cutter would allow the pipeline crew members to accomplish more maintenance along the pipeline, saving time and equipping them to undertake larger jobs. The PTPC has funded all equipment purchases for the OGWS maintenance in the past.

The estimate capital cost for equipment is \$90,000 in 2021 dollars and is planned to occur in five years.

### Spare Part Needs for Reliability

PTPC maintains a variety parts on hand to expedite pipeline repairs. The materials listed below provide coverage to deal with the common types of pipeline leakage. WAWARN organizations could also be a potential source of replacement parts in an emergency. A large scale system failure from an event like an earthquake would require Federal and State assistance.

OGWS	Transmission Line Spare Parts								
Number	Item								
3	1/0 Bonding wires								
1	1" Air valve								
8	20" Backing flange								
14	24" Backing flange								
6	28" Backing flange								
28	30" Backing flange								
3	36" Backing flange								
6	24" Romac coupler (complete)								
4	30" Romac coupler (complete)								
14	30" Romac coupler (middle)								
3	24" X 30" Romac reducer								
1	20" Repair band								
1	30" Repair band								

2	30" X 40' Pipe section
2	36" X 4' Pipe spool
2	Wax tape corrosion protection kits

Most emergency excavation requests have been handled by PTPC contracting with local construction firms. The City of Port Townsend has heavy equipment such as backhoes and dump trucks that could also be used in an emergency.

Purchasing an additional 80 feet each of 24" and 30" steel pipeline would improve the ability to respond to pipeline failures. Spare piping should be stored under cover to preserve the coatings. The estimated cost for purchasing 160' of new pipe is \$22,000 and should be purchased in 2023 after a condition assessment is completed.

# Summary of Capital Investments to Offset Operational Costs

Manual control of the water system, equipment shortfalls, and lack of automated monitoring capability has led to excessive time spent in hands-on operation and commuting between facilities. Capital improvements that would provide time and possible future cost savings include:

- Automated control valves at the Big Quilcene Diversion, Little Quilcene Diversion, and Lords Lake. This would allow an operator to remotely make adjustments and avoid having to commute between facilities.
- Telemetry for remote monitoring of the Little Quilcene River stream flow.
- Telemetry for Big and Little Quilcene diversion meter monitoring.
- Remote security system monitoring of diversions, Lords Lake and City Lake facilities.
- Automated screen cleaning of Big and Little Quilcene diversions.
- Clearing large trees from rights-of-way and improvements in vegetation management.
- Establishing a clear marking of the right of way and a systematic vegetation control program.

# Summary Capital Investments Driven by Regulatory Agencies and Environmental Factors

The Washington Department of Ecology Office of Dam Safety is requiring the City to conduct an engineering evaluation to develop alternatives to improve the stability of the East Dam as described above. The City is planning to contract with an engineer in 2022 for this study at an estimated cost of \$250,000.

Future reconstruction of the Big Quilcene River diversion is likely to trigger a requirement for resident fish passage around the diversion as was required for the Little Quilcene diversion reconstruction.

### Lords Lake Expansion

Climate change is predicted to reduce watershed snowpack and summertime stream flows. Reservoir storage and/or conservation will be required to meet industrial demand for the predicted change in stream flow timing. Historically water withdrawals from Lords Lake began between late August to early October and, without significant rainfall, could continue for two and a half months before Lords Lake was empty. Fall rains that typically replenished stream flows by mid-October provided an adequate buffer in reservoir storage. Increasingly the historical precipitation patterns have shifted and it has been necessary to draw down Lords Lake earlier leaving less of a buffer. One possible solution would be to expand the capacity of Lords Lake. A study in 2001 examined a couple of alternatives including doubling the size of the reservoir for approximately \$5 million at that time, which would be an estimated \$9.3 today.

Increasing the capacity of Lords Lake would incorporate necessary stability improvements for the east dam, potentially making the expansion more cost effective. An evaluation of the expansion size should be one of the first steps. As part of the dam improvements, consideration should be made for the modification of the transmission line connection to Lords Lake. Changing the lake outlet configuration could allow simultaneous filling of Lords Lake and City Lake. A future Little Quilcene diversion Lords Lake bypass line may be needed as well.

The cost estimate for the Lords Lake east dam retrofit will be determined with an engineering study in 2022 as required by the Department of Ecology. For the purposes of this capital white paper the estimated cost is \$4,000,000. Cost to retrofit this dam could be offset by FEMA hazard mitigation grants. If the partnership decides to combine retrofit of the east dam with raising the height for future capacity improvements the cost is estimated at \$6,000,000 in 2021 dollars.

## Capital Investment for Current System Capacity Improvements

The OGWS does not need substantial capacity improvements to address anticipated system growth. However, there are some capacity improvements to address current deficiencies. The following section identifies these improvements that will improve the operations of the system. Some of these improvements could also support the addition of the Tri-Area Customer base.

- During certain times of the year or when demand of both the City and the Paper Mill are at their highest, the inlet pressure to the City's Water Treatment Facility declines below the threshold required for plant operation. If pressure drops below the treatment plant PRV setpoint the valve ceases to work for a period of time until after pressure is restored. Loss of pressure in the transmission line at flows above 14 mgd restricts plant production and may trigger the filters to shut down. The following solutions can address this operational and capacity restriction.
  - Change flushing flow rate into the Mill to decrease 5-10 minute demand spikes.
  - Add a reservoir tank to support Mill flushing operations.
  - Replace 6,100 feet of 24-inch sections of steel pipeline north of City Lake Screens coincident with the Olympic Discovery Trail development. The pipe replacement in 2021 dollars is estimated at \$4.7m. Much if not all of the costs could be offset by grants for the Olympic Discovery Trail development. The City is in the process of requesting grant funding for a portion of a \$24 million to build the section of the ODT between Anderson Lake and Discovery Bay which includes purchase of Rayonier Timber property and installation of a new pipeline to be placed under the trail.
  - Install a booster pump at the inlet to the Port Townsend Water Treatment Facility at an estimated cost of \$450,000.
- OGWS transmission pipeline connection at Lords Lake does not allow the simultaneous filling of City Lake and Lords Lake. When the valve is only partially closed downstream of Lords Lake to create backpressure on the line to direct water to Lords Lake and City Lake, there is cavitation in the pipeline downstream of the valve. Installation of flow control valves at the appropriate locations in the pipeline can provide the operators with the ability to fill both reservoirs at the same time and to run the system at a level of higher efficiency. The cost in 2021 dollars is estimated at \$2,500,000 for this work.

# Capital Needs for Growth or to Address Water Supply

Growth in water demand was analyzed in the Planning and Environmental White Paper. Based on this analysis, there are no capital investment needs to expand the current OGWS system to accommodate growth for either the PTPC or the City of Port Townsend. The only exception to this conclusion would be if the City was to add wholesale water delivery to the Tri-Area. The addition of the Tri-Area would require system analysis to determine if the transmission system could handle the increased maximum day demand as future storage requirements.

Alternatively, as described in the Assets white paper, if PTPC were to leave the partnership, the system could easily accommodate the Tri-Area demand. Additionally, if conservation by the PTPC and the City result in reduced Maximum Day Demand, this could also result in adding the Tri-Area to the system without the need for capital expansion. The following description of the City and Tri-Area illustrate the total water demand if they were added without considering conservation.

With a growing population Port Townsend municipal water use is anticipated to increase at 1.12% compounded rate through 2039, while PTPC's water demand is not expected to increase in their current planning horizon. At the City's full build out, including PTPC industrial demand, water consumption is projected to be around 17 mgd. Available water resources are in excess of 20 mgd, however, the maximum flow possible in the transmission system is approximately 20 mgd. The difference between system capacity and projected use could be marketed to other water purveyors to help offset OGWS capital and operation costs as outlined in the Planning and Environmental White Paper. Most of the Quimper Water System was previously served with surface water from the OGWS and, with the necessary water treatment, could be served again. In order for this to happen Section Q of the transmission pipeline north of City Lake will have to be addressed to resolve ongoing pressure problems at the Port Townsend Water Treatment Facility, which would be exacerbated by the additional Tri-Area water demand. Lords Lake reservoir expansion may also be required to compensate for the lack of water availability during the dry months

Projected Water Demand (mgd)	2020	2030	2040
City of Port Townsend Water System			
ERUs	8,290	9,276	10,379
ADD	1.01	1.13	1.27
MDD	2.12	2.38	2.66
PUD Quimper Water System			
ERUs	5,588	6,807	7,884
ADD	0.887	1.080	1.251
MDD	1.987	2.421	2.804
Total Projected Demand			
ERUs	13,878	16,083	18,263
ADD	1.898	2.212	2.517
MDD	4.111	4.797	5.463

For the purposes of this white paper, no capital investments for system growth are planned. The partners anticipate that if the Tri-Area were added to the OGWS system by brining on the PUD as a third partner, a re-evaluation of system improvements would be necessary as part of a partnership negotiations between the PUD and City and PTPC.
# **Reserves and Unanticipated Capital**

Reserves for unanticipated capital repairs or unforeseen conditions impacting the cost of capital are required. These reserves also will be necessary for the issuance of debt. Determination of the appropriate reserve level will be determined based on the following factors.

- Annual Operation Cost 90 days of operations
- Emergency repairs and unanticipated capital \$1,000,000
- Reserves required for adequate bond rating To be determined

Reserves are typically allowed to be nested and reserves typically required for bonding are greater than operational and emergency reserves. In addition, typically net annual revenue needs to be 1.25 times the sum of all debt payments to meet bond coverage factors. This section of the whitepaper will be addressed with the assistance of bond counsel and is subject to change.

### Capital Improvement Program

The Capital Improvement Plan provides a working blueprint for sustaining and improving the OGWS infrastructure. It is a dynamic planning and fiscal management tool used to coordinate the location, timing, and financing of capital improvements over a multi-year period. As a working document it will be reviewed and updated regularly to reflect changing needs, priorities, and funding opportunities.

An estimated \$161 million in current value infrastructure and other capital assets will need to be refurbished or replaced within the next 40 years, which includes setting aside funds beginning in 2037 to be held in reserve to implement a 125 year replacement schedule for the transmission pipeline installed between 1952 and 1972. This capital improvement program estimates an investment of \$64 million in the next 20 years. The cost and replacement schedule are provided in the OGWS CIP tables below. The following tables include cost for 24" pipe replacement and expansion of Lords Lake which are capacity improvements.

OG	WS Capital Improvement Projects																
		Infla	tion Rate	3.29	6												
		Curr	ent value														
	Project		2021	2022		2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033
Pipe	eline and Appurtenances																
	Easement survey marking	\$	50,000														
	Vegetation clearing - contracted	\$	75,000		\$	79,877								\$ 99,581			
	Road maintenance	\$	25,000												\$ 34,256		
	Culvert replacement (5 culverts per 5 years)	\$	25,000						\$	29,264					\$ 34,256		
	Land swaps - easement right purchases (2051)	\$	200,000									\$ 249,338	;				
	Air Valves and Boxes (25)	\$	125,000						\$	146,322							
	Cathodic Protection	\$	145,000	\$ 149,640													
	Condition assessment	\$	500,000		\$	532,512											
	Steel Pipe Replacement (1928 sections)	\$	35,149,976									\$ 43,821,064					
	Steel Pipe Replacement Sinking Fund (all other sections)	\$	99,969,551														
Dive	ersions																
	Big Quilcene Diversion Replacement (2058)	\$	6,462,967														
	Big Quilcene Diversion House and Buildings (Year?)	\$	450,000														
	Little Quilcene Diversion Rehabilitation (2051)	\$	50,000														
Rese	ervoirs																
	Lords Lake Security Cameras	\$	10,000		\$	10,650											
	Lords Lake Fencing Replacement	\$	100,000														
	City Lake Fencing	\$	100,000														
	City Lake House and Outbuildings (Year?)	\$	650,000														
Faui	inment																
Lyui	Tractor Mower Backhoe?	ć	90.000						ć	105 352							
		Ŷ	50,000						Ŷ	105,552							
Spar	re Parts																
	Pipe (4 sections 24")	\$	13,570		\$	14,452											
	Pipe (4 sections 30")	\$	7,300		\$	7,775											
Regi	ulatory Capital Needs																
	Lords Lake East Dam Engineering Assessment	\$	250,000	\$ 258,000													
	Lords Lake East Dam Rehabilitation	\$	4,000,000					\$ 4,537,104									
Cap	ital Needs Operations and Current Capacity Improvements																
	Lords Lake Expansion (in addition to east dam rehab)	\$	5,300,000					\$ 6,011,663									
	Lords Lake Pipeline Improvements	\$	2,500,000					\$ 2,835,690									
					_												
Сар	ital Needs for Growth (Including adding Tri - Area)																
I	Section Q 24" Pipeline Replacement and Upsizing	\$	4,680,417												\$ 6,413,299		
I													_				
Rese	erves and Unanticipated Capital	-			-												
	Periodic Investment into Emergency Reserve	-										\$ 2,053,942					
Tota		Ś	160 928 781	\$ 407 640	Ś	645 266	Ś -	\$ 13 384 458	Ś	280 938	Ś _	\$ 46 124 343	Ś -	\$ 99 581	\$ 6 481 811	Ś -	Ś -

OGWS Capital Improvement Projects											
	Inflation Rate										
	Current value										
Project	2021	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043-2062 in 2043\$
Pipeline and Appurtenances											
Easement survey marking	\$ 50,00	0								\$ 96,882	
Vegetation clearing - contracted	\$ 75,00	0			\$ 124,147						\$ 449,921
Road maintenance	\$ 25,00	0							\$ 46,939		
Culvert replacement (5 culverts per 5 years)	\$ 25,00	0		\$ 40,099					\$ 46,939		\$ 99,982
Land swaps - easement right purchases (2051)	\$ 200,00	0									
Air Valves and Boxes (25)	\$ 125,00	0									
Cathodic Protection	\$ 145,00	0									
Condition assessment	\$ 500,00	0									
Steel Pipe Replacement (1928 sections)	\$ 35,149,97	6									
Steel Pipe Replacement Sinking Fund (all other sections)	\$ 99,969,55	1			\$ 1,365,581	\$ 1,365,581	\$ 2,009,620	\$ 2,009,620	\$ 2,902,175	\$ 5,070,578	\$ 234,631,849
Diversions											
Big Quilcene Diversion Replacement (2058)	\$ 6,462,96	7									\$ 12,923,654
Big Quilcene Diversion House and Buildings (Year?)	\$ 450,00	0		\$ 721,785							
Little Quilcene Diversion Rehabilitation (2051)	\$ 50,00	0									\$ 99,982
Reservoirs											
Lords Lake Security Cameras	\$ 10.00	0									
Lords Lake Fencing Replacement	\$ 100.00	0							\$ 187,756		
City Lake Fencing	\$ 100,00	0							\$ 187,756		
City Lake House and Outbuildings (Year?)	\$ 650,00	0		\$ 1,042,579					φ <u>1</u> 07)750		
Equipment											
Tractor, Mower, Backhoe?	\$ 90,00	0									
Spare Parts											
Dine (A sections 2/1")	\$ 13.57	n									
Pine (4 sections 20")	\$ 13,37	0									
	÷ 7,30	0									
Regulatory Capital Needs											
Lords Lake East Dam Engineering Assessment	\$ 250,00	0									
Lords Lake East Dam Rehabilitation	\$ 4,000,00	0									
Capital Needs Operations and Current Capacity Improvements											
Lords Lake Expansion (in addition to east dam rehab)	\$ 5,300,00	0									
Lords Lake Pipeline Improvements	\$ 2,500,00	0									
Canital Needs for Growth (Including adding Tri - Area)											
Section O 2/1" Pineline Replacement and Unsizing	\$ 4,680,41	7									
Section Q 24 Pipeline Replacement and opsizing	\$ 4,000,41	,									
Reserves and Unanticipated Capital											
Periodic Investment into Emergency Reserve											
Totals	\$ 160,928,78	1\$-	\$ -	\$ 1,804,463	\$ 1,489,728	\$ 1,365,581	\$ 2,009,620	\$ 2,009,620	\$ 3,371,565	\$ 5,167,460	\$ 248,205,388

The CIP was updated on 10/13/21 to remove 24" steel pipe replacement and raising of Lords Lake Dam. The annual replacement installments shown for 2037 and beyond was also removed. The 1928 replacement costs were allocated over five years to account for design and engineering ahead of replacement. These changes were made as a result of negotiations with the Mill given no capacity expansion..

OGWS Capital Improvement Projects																	
	Infla	ation Rate		3.2%													
	Cur	rent value															
Project		2021		2022		2023	2024	2025		2026	2027		2028	2029	2030	2031	2032
Pipeline and Appurtenances																	
Easement survey marking	\$	50,000															
Vegetation clearing - contracted	\$	75,000			\$	79,877									\$ 99,581		
Road maintenance	\$	25,000														\$ 34,256	
Culvert replacement (5 culverts per 5 years)	\$	25,000							\$	29,264						\$ 34,256	
Land swaps - easement right purchases (2051)	\$	200,000										\$	249,338				
Air Valves and Boxes (25)	\$	125,000							\$	146,322							
Cathodic Protection	\$	145,000	\$	149,640													
Condition assessment	\$	500,000			\$	532,512											
Steel Pipe Replacement (1928) Phase 1 (High Pressure Sections)	\$	21,965,168							\$	800,000	\$ 800,000	\$	800,000	\$ 800,000	\$ 24,915,507		
Steel Pipe Replacement (1928) Phase 2	\$	13,184,808															
Steel Pipe Replacement Sinking Fund (all other sections)	\$	99,969,551															
Diversions																	
Big Quilcene Diversion Replacement (2058)	\$	6,462,967															
Big Quilcene Diversion House and Buildings (2036)	\$	450,000															
Little Quilcene Diversion Rehabilitation (2051)	\$	50,000															
Reservoirs	_																
Lords Lake Security Cameras	\$	10,000			\$	10,650											
Lords Lake Fencing Replacement	\$	100,000															
City Lake Fencing	Ś	100.000															
City Lake House and Outbuildings (Year?)	\$	650,000										_					
Eaujoment																	
Tractor, Mower, Backhoe?	\$	90,000							\$	105,352							
		,															
Spare Parts												_					
Pipe (4 sections 24")	\$	13,570			\$	14,452						_					
Pipe (4 sections 30")	\$	7,300			\$	7,775											
Regulatory Capital Needs																	
Lords Lake East Dam Engineering Assessment	\$	250,000	\$	258,000													
Lords Lake East Dam Rehabilitation	\$	4,000,000			\$	200,000	\$ 200,000	\$ 4,083,394				_					
Capital Needs Operations and Current Capacity Improvements																	
Lords Lake Expansion (in addition to east dam rehab)	\$	5,300,000			1												
Lords Lake Pipeline Improvements	\$	2,500,000						\$ 2,835,690									
Capital Needs for Growth (Including adding Tri - Area)																	
Section Q 24" Pipeline Replacement and Upsizing	ć	4 680 417															
	د ب	4,000,417															
Description and Upperficients of Carital																	
Reserves and Unanticipated Capital			-		-				1			+					
Periodic Investment into Emergency Reserve																	
Totals	\$	160,928,781	\$	407,640	\$	845,266	\$ 200,000	\$ 6,919,084	\$	1,080,938	\$ 800,000	\$	1,049,338	\$ 800,000	\$ 25,015,088	\$ 68,512	\$ -

OGWS Capital Improvement Projects															
	Infla	tion Rate													
	Curr	ent value													
Project		2021	2033	2034	2035		2036	2037	2038	2039	2040	2041	2042	2043	-2062 in 2043\$
Pipeline and Appurtenances															
Easement survey marking	\$	50,000											\$ 96,882		
Vegetation clearing - contracted	\$	75,000						\$ 124,147						\$	449,921
Road maintenance	\$	25,000										\$ 46,939			
Culvert replacement (5 culverts per 5 years)	\$	25,000				\$	40,099					\$ 46,939		\$	99,982
Land swaps - easement right purchases (2051)	\$	200,000													
Air Valves and Boxes (25)	\$	125,000													
Cathodic Protection	\$	145,000													
Condition assessment	\$	500,000													
Steel Pipe Replacement (1928) Phase 1 (High Pressure Sections)	\$	21,965,168													
Steel Pipe Replacement (1928) Phase 2	\$	13,184,808		\$ 600,000	\$ 600,000	\$	600,000	\$ 600,000	\$ 18,423,294						
Steel Pipe Replacement Sinking Fund (all other sections)	\$	99,969,551												\$	234,631,849
Diversions	-														
Big Quilcene Diversion Replacement (2058)	Ś	6.462.967												Ś	12.923.654
Big Quilcene Diversion House and Buildings (2036)	Ś	450.000		\$ 36.000	\$ 36.000	Ś	606.300								
Little Quilcene Diversion Rehabilitation (2051)	\$	50,000		,	,	1 ·	,							\$	99,982
Reservoirs															
Lords Lake Security Cameras	\$	10,000													
Lords Lake Fencing Replacement	\$	100,000										\$ 187,756			
City Lake Fencing	\$	100,000										\$ 187,756			
City Lake House and Outbuildings (Year?)	\$	650,000		\$ 50,000	\$ 50,000	\$	882,182								
Equipment															
Tractor, Mower, Backhoe?	\$	90,000													
Spare Parts															
Pipe (4 sections 24")	\$	13,570													
Pipe (4 sections 30")	\$	7,300													
Regulatory Capital Needs															
Lords Lake Fast Dam Engineering Assessment	Ś	250 000													
Lords Lake East Dam Rehabilitation	Ś	4 000 000													
	Ŷ	1,000,000													
Capital Needs Operations and Current Capacity Improvements															
Lords Lake Expansion (in addition to east dam rehab)	\$	5,300,000													
Lords Lake Pipeline Improvements	\$	2,500,000													
Capital Needs for Growth (Including adding Tri - Area)	<i>.</i>	4 600 447													
Section Q 24" Pipeline Replacement and Upsizing	Ş	4,680,417													
Reserves and Linanticipated Capital	_														
Periodic Investment into Emergency Reserve	-														
Totals	\$	160,928,781	\$-	\$ 686,000	\$ 686,000	\$	2,128,581	\$ 724,147	\$ 18,423,294	\$-	\$ -	\$ 469,390	\$ 96,882	\$	248,205,388

OGWS Pipeline	Replacem	ent Capital Ir	nprovement Pro	ject Funding (1	1952-1	1972 Pipeline	)																					
		Inflation Rate		3.2	%		53																					
		Current Value	Repl. Date																									
Pipeline Segment	Install Date	2021		2037		2038	2039		2040	2041		2042		2043		2044		2045		2046		2047	2048		2049	2050		2051
A	1965	\$ 3,646,00	7 2090	\$ -	\$ -	\$		\$-	67	\$ -	\$-		\$-		\$-		\$-		\$ -		\$-		\$ -		\$ -	\$ 8	01,045	801,045
В	1963	\$ 9,210,66	3 2088	\$ -	\$-	\$	÷ -	\$-	5	\$ -	\$-		\$-		\$-		\$ -		\$ -		\$-		\$ 1,9	00,075	\$ 1,900,075	\$ 1,9	00,075	1,900,075
С	1961	\$ 10,571,55	0 2086	\$ -	\$-	\$	÷ -	\$-	5	\$ -	\$-		\$-		\$-		\$ -		\$	2,047,665	\$	2,047,665	\$ 2,0	47,665	\$ 2,047,665	\$ 2,0	17,665	2,047,665
D	1960	\$ 13,132,90	8 2085	\$ -	\$-	\$		\$-	5	\$ -	\$ -		\$-		\$-		\$	2,464,913	\$	2,464,913	\$	2,464,913	\$ 2,4	64,913	\$ 2,464,913	\$ 2,4	64,913	2,464,913
E	1958	\$ 11,854,87	3 2083	\$ -	\$ -	\$	5 -	\$-	4	\$ -	\$-		\$	2,089,191	\$	2,089,191	\$	2,089,191	\$	2,089,191	\$	2,089,191	\$ 2,0	89,191	\$ 2,089,191	\$ 2,0	39,191	2,089,191
F	1958	\$ 9,661,06	1 2083	\$ -	\$ -	\$	5 -	\$-	4	\$ -	\$-		\$	1,702,574	\$	1,702,574	\$	1,702,574	\$	1,702,574	\$	1,702,574	\$ 1,3	02,574	\$ 1,702,574	\$ 1,7	02,574	1,702,574
G	1954	\$ 4,145,23	9 2079	\$ -	\$ -	\$	644,039	\$	644,039	\$ 644,039	\$	644,039	\$	644,039	\$	644,039	\$	644,039	\$	644,039	\$	644,039	\$ 6	44,039	\$ 644,039	\$ 6	14,039	644,039
н	1957	\$ 3,790,03	4 2082	\$ -	\$-	\$	÷ -	\$-	5	\$ -	\$	647,209	\$	647,209	\$	647,209	\$	647,209	\$	647,209	\$	647,209	\$ 6	47,209	\$ 647,209	\$ 6	17,209	647,209
J	1967	\$ 362,85	3 2092	\$ -	\$-	\$	÷ -	\$-	\$	\$-	\$ -		\$-		\$-		\$-		\$ -		\$-		\$ -		\$ -	\$ -	\$	÷ -
L	1957	\$ 1,768,69	5 2082	\$ -	\$-	\$	- ·	\$-		\$-	\$	302,033	\$	302,033	\$	302,033	\$	302,033	\$	302,033	\$	302,033	\$ 3	02,033	\$ 302,033	\$ 3	02,033	302,033
M	1957	\$ 2,291,64	8 2082	\$ -	\$-	\$	÷ -	\$-	\$	\$ -	\$	391,336	\$	391,336	\$	391,336	\$	391,336	\$	391,336	\$	391,336	\$ 3	91,336	\$ 391,336	\$ 3	91,336	391,336
N	1957	\$ 4,847,71	8 2082	\$ -	\$-	\$		\$-	\$	\$ -	\$	827,826	\$	827,826	\$	827,826	\$	827,826	\$	827,826	\$	827,826	\$ 8	27,826	\$ 827,826	\$ 8	27,826	827,826
0	1964	\$ 6,522,38	4 2089	\$ -	\$ -	\$		\$-	5	\$ -	\$ -		\$-		\$ -		\$-		\$ -		\$-		\$ -		\$ 1,388,564	\$ 1,3	38,564	1,388,564
P	1952	\$ 4,680,41	7 2077	\$ 682,79	1\$	682,791 \$	682,791	\$	682,791	\$ 682,791	\$	682,791	\$	682,791	\$	682,791	\$	682,791	\$	682,791	\$	682,791	\$ 6	82,791	\$ 682,791	\$ 6	32,791	682,791
Q	1952	\$ 4,680,41	7 2077	\$ 682,79	1\$	682,791 \$	682,791	\$	682,791	\$ 682,791	\$	682,791	\$	682,791	\$	682,791	\$	682,791	\$	682,791	\$	682,791	\$ 6	82,791	\$ 682,791	\$ 6	32,791	682,791
R	1972	\$ 3,409,06	0 2097	\$ -	\$-	\$		\$-		\$-	\$-		\$-		\$-		\$-		\$ -		\$-		\$-		\$ -	\$ -	~,	- ·
х	1956	\$ 5,394,02	5 2081	\$ -	\$ -	\$	5 -	\$-	4	\$ 892,555	\$	892,555	\$	892,555	\$	892,555	\$	892,555	\$	892,555	\$	892,555	\$ 8	92,555	\$ 892,555	\$ 8	92,555	892,555
Total		\$ 99,969,55	1	\$ 1.365.58	1 \$	1.365.581 \$	2.009.620	Ś	2.009.620	\$ 2,902,175	Ś	5.070.578	Ś	8,862,344	Ś	8.862.344	Ś	11.327.256	Ś	13.374.922	Ś	13.374.922	\$ 15.3	74.996	\$ 16.663.560	\$ 17.4	64.604	17.464.604

OGWS Pipeline	Replacem	ent Capital Im	provement Pro	ject Funding (195	2-1972 Pipeline)									
		Inflation Rate												
		Current Value	Repl. Date											
<b>Pipeline Segment</b>	Install Date	2021		2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062
А	1965	\$ 3,646,007	2090	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045	\$ 801,045
В	1963	\$ 9,210,663	2088	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075	\$ 1,900,075
С	1961	\$ 10,571,550	2086	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665	\$ 2,047,665
D	1960	\$ 13,132,908	2085	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913	\$ 2,464,913
E	1958	\$ 11,854,873	2083	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191	\$ 2,089,191
F	1958	\$ 9,661,061	2083	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574	\$ 1,702,574
G	1954	\$ 4,145,239	2079	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039	\$ 644,039
н	1957	\$ 3,790,034	2082	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209	\$ 647,209
J	1967	\$ 362,853	2092	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904	\$ 84,904
L	1957	\$ 1,768,695	2082	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033	\$ 302,033
М	1957	\$ 2,291,648	2082	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336	\$ 391,336
N	1957	\$ 4,847,718	2082	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826	\$ 827,826
0	1964	\$ 6,522,384	2089	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564	\$ 1,388,564
Р	1952	\$ 4,680,417	2077	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791
Q	1952	\$ 4,680,417	2077	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791	\$ 682,791
R	1972	\$ 3,409,060	2097	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 933,752	\$ 933,752	\$ 933,752	\$ 933,752	\$ 933,752	\$ 933,752
Х	1956	\$ 5,394,025	2081	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555	\$ 892,555
Total		\$ 99,969,551		\$ 17,549,508	\$ 17,549,508	\$ 17,549,508	\$ 17,549,508	\$ 17,549,508	\$ 18,483,260	\$ 18,483,260	\$ 18,483,260	\$ 18,483,260	\$ 18,483,260	\$ 18,483,260



# Conclusion

The Capital White paper takes a pragmatic look at capital investment needs to support continued operation of the system for the next 100 years with a focus on the next 40 years. Furthermore, additional details are addressed in the planning horizon of 20 years in order to facilitate expeditious and financially responsible planning. Capital needs will undoubtedly change over time and thus continuous review and assessment of the system is required to make timing adjustments over time. The capital program in this white paper is as realistic as possible based on the best information available at this time, neither conservative nor aggressive. Economic conditions, availability of grants, and the actual condition of the pipeline will have an impact on the capital program.

This capital program will be inserted into a utility rate model to create a sustainable estimate for revenues necessary to support the investments to be included.

## References

- 1. Pipeline Replacement Matrix spreadsheet
- 2. Estimated Cost of Potential, Future Desalination Water Treatment Plant, Jacobs April 13, 2021
- 3. OGWS Section S Wall Thickness Testing 4/22/19
- 4. OGWS Section T Wall Thickness Testing 4/19/19
- 5. Soils Analysis Re: AmTest Data email 4/13/2021
- 6. Big Quilcene River Diversion Dam Structural Condition Assessment, HDR 12/7/2016
- 7. Olympic Gravity Water System Pipeline Replacement Opinion of Cost, HDR 10/11/2016
- 8. OGWS Opinion of Cost Attachments A & B, HRD 2015
- 9. Hydraulic Analysis TM, HDR 2010
- 10. OGWS Hydraulic Grade Profile, HDR 2010
- 11. Olympic Gravity Water System Estimated Replacement Cost Draft Report, RW Beck 4/20/2000
- 12. Engineering Evaluation and Preliminary Cost Estimate Increased Reservoir Capacity Lords Lake CDM 3/15/2001
- 13. 2020 DOE Dam Safety Letter Lords Lake
- 14. Technical Memorandum: Impact of Key Factors on Planning the Eventual Systematic Replacement of the OGWS Pipeline, Jacobs April 27, 2021
- 15. OGWS Capital Improvement Projects

# **Olympic Gravity Water System Funding and Resources White Paper**

### October 16, 2021

### <u>Preface</u>

The City of Port Townsend and the Port Townsend Paper Mill have a partnership history of supplying water to the Quimper Peninsula, City of Port Townsend, and Paper Mill dating back to 1928. The City of Port Townsend (City) and Port Townsend Paper Corporation (PTPC) are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System (OGWS) in the late 1920's, the development of an agreement between the City and PTPC (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, seven technical white papers break down information into manageable segments. In the following specific topic area categories, the City and PTPC have worked together to develop these white papers for potential items to consider during the negotiation of the agreement.

- 1. Assets: Understanding each entity's assets and capacities that support investment.
- 2. Stakeholders: The public, private property owners, and many agencies are stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to plan for into the future.
- 4. Operations: Operational requirements, efficiencies and goals, cost, and reliability as well as determining the line between capital and ordinary wear and tear is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and need to be informed by a value engineering study for system reliability.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal Considerations: Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiation and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the Port Townsend City Council and the PTPC Board of Directors.

The following white paper explores various options to support funding needs in order to continue to operate the system as well as invest in capital needs.

### Introduction

The intent of the financial white paper is to provide options and analysis to determine what levels of funding are necessary for the term of the agreement as well as how to secure the funding. The financial white paper is informed by all of the other white papers. The analysis contained within this white paper establishes funding levels and methodologies based on the following categories:

- 1. Historical Cost of Water
- 2. Cost-of-Water Approach
- 3. Operating and Capital Costs
- 4. Financial Stability, Debt Issuance and Surety
- 5. Grant Funding
- 6. Water Affordability

### Historical Cost of Water

The cost of developing and maintaining the water system has varied throughout the course of the system history. The City and the PTPC do not pay for the source water; however, there is a significant costs to collect and transport the water to the delivery points at the PTPC and the City Water Treatment Facility. Generally, cost of water is determined by the cost to operate the system as well as the cost to invest in infrastructure necessary to deliver the water to the PTPC and the City. These costs can then be annualized and divided by the total amount of water delivered on a yearly basis in order to provide a cost per gallon for water. This section of the white paper estimates the cost of water historically normalized (inflated) to 2021 dollars.

- Operational: Recent operational cost data is provided in the following section. One way to capture historical operational expenses is through the number of FTEs assigned to operating the system.
  - 2017 to Present: PTPC 3 FTEs, City of PT 0.5 FTEs. At this level of staffing, the operational cost of water is approximated at \$500,000 per year. These figures do not capture the overhead and assistance of the Paper Mill engineering and depth of support provided by the Mill.
  - Between 1993 and 2016 the City provided 1 FTE for watershed monitoring/coordination purposes as part of the agreed conditions to remain an unfiltered water system. While some of the municipal watershed protection requirements were negated by the construction of water filter treatment, the City still conducts watershed monitoring but on a reduced basis.
- Capital: A number of key investments have been made in the system since it was developed in 1928. The City and the PTPC do not have an exact record of all the investments in the system; however, a table of known data is available in the Capital White Paper. The City is currently paying 54,000 annually to pay down debt improvements made to City Lake. The City also

dedicates \$55,000 per year to the Olympic Gravity Water system in order to create a reserve. The total present cost of capital is estimated at \$109,000.

Based on the above data, the cost of water consists of operational costs provided by the PTPC and capital costs provided by the City, and is estimated as follows:

Annual Capital Cost (City)	\$ 109,000
Annual Operating Cost (PTPC)	\$ 500,000
Annual Operating cost (City)	\$ 102,000
Total Annual Cost of Water	\$ 711,000
Total Average Water Consumption (MG)	4,320
Cost per MG	\$ 164.58
Cost per KG	\$ 0.16

The cost of water within the last several years illustrates a lack of investment in the system. With looming replacement needs, going forward, the cost of water will need to increase significantly in order to pay for system replacement. This increase in the cost of water will need to make up for lack of savings in the past. The Capital White Paper illustrates the timing of improvements within the next 20 years and beyond.

## Cost-of-Water Approach

Looking forward to the financial challenges associated with maintaining and replacing the system over the long term, the City is utilizing a cost-of-water-used approach. The City hired Financial Consulting Solutions Group (FCS GROUP) to calculate a wholesale rate for delivery of water to the City and the PTPC at the point of delivery, which is located at the intersection of Mill Road and South 8<sup>th</sup> Street. The term 'wholesale' is utilized in this analysis to recognize the status of PTPC as a large user whose use of the system is governed by its agreement with the City and distinct from the City's retail customers. The wholesale delivery location of untreated or raw water for the Mill's paper production process occurs at at the intersection of Mill Road and South 8<sup>th</sup> Street. Wholesale water rates are often set using a utilitybased ratemaking methodology, which typically may include the three components and factors listed below to ensure sustainable operations of the system. The term wholesale typically means tax exempt based on the resale of water at which time tax is collected. For this particular analysis, the PTPC is an end user and thus some taxes would be applied.

- 1. Operational costs. The operational costs going forward are estimated in the Operations White Paper at \$817,000 per year in current-year dollars. These costs are expected to increase annually with inflation at a rate of 2.0%.
- 2. Capital costs. Capital costs for the Olympic Gravity Water System (OGWS) are defined in the Capital White Paper. Capital costs are largely system replacement costs. With the exception of raising of Lords Lake, which is a potential climate change countermeasure, there are not any system expansions planned. Furthermore, the system is not expected to

grow in terms of water demand beyond its current capacity. Capital cost inflation is projected to increase annually at 3.2% based on long term historical trends.

3. Return on assets (rate base). Recognizing that contract customers typically receive a different level of service than other customers, they might not pay system development charges (SDCs) to buy into the system and are not necessarily exposed to the same risks of ownership as retail customers. The utility-based ratemaking methodology often includes a return on the assets providing service as 'rent' payable for use of the assets as a non-owner. However, as shown in this white paper, the system infrastructure assets have a negative value as they are reaching the end of their useful life and replacement of the system is the driving cost factor. Thus, rent for the private partner to use the system is not included in the rate structure. Instead of rent, both parties need to save dollars in a sinking fund to pay for replacement of the system.

Based on these principles, the cost of water is established per thousand gallons of water used on an annual basis. The current average daily water delivery as reported in the Operations White Paper to the City and to the PTPC is 11 mgd and 1 mgd respectively. The total estimate volume of water used on an annual basis is 3,950,000,000 and 370,000,000 gallons by the PTPC and City respectively.

The wholesale rate model assumes that there will be an operating fund and a capital fund to track costs which be the basis for future rate adjustments. Costs for operating and capital are expected to change over time; the revenues will vary based on conservation efforts, operational life of the system components, and inflation. Given this dynamic financial reality, the rate model will need to be adjusted at least every 5 years based on new information.

FCS GROUP developed a financial model which takes into account inflation, interest earnings, costs of operations, capital costs, debt issuance, and taxes, among other factors that capture the entire cost of delivering water. The resulting recommended wholesale rate is provided in the following table. It is recommended that the City factor this rate into the City's retail rate model to be reflected in the rates to the City's customers to account for the portion of water the City's retail rate customer uses. It is also recommended that the PTPC include this rate in their operations budgets to account for water used by the Mill.

The following rates were developed based on the operational costs and the capital replacement costs identified in the Capital White Paper. Note, given the system is not expected to grow in capacity, the capital items associated with growth were removed from the Capital Plan and thus are not included in these rates.

	2022	1022		2025	2026
	2022	2023		2025	2020
Rate (\$/1,000 gal)	\$1.05	\$108	2,1.12	\$1.15	\$1.19
PTPC Cost	\$3.11 M	\$4.28 M 🔿	\$4,41 M	\$4.56 M	\$4.70 M
City Cost	\$0.29 M	\$0.41M	\$0.41 M	\$0.43 M	\$0.44 M
TOTAL Rev.	\$3.40 M	\$4.69 M	\$4.82 M	\$4.99 M	\$5.14 M

Estimated Cost of Water Analysis (as of October 16, 202) – Subject to revision

Note: 2022 Estimates are based on a year of billing.

Note: The rate analysis is still underway. The above rates are approximate in nature and subject to change.

#### **Emergency Repairs**

Emergency repairs are expected to be needed over the course of the next 20 years. Emergency repairs fall between operations and capital based on the strategy deployed to address repair. For example, due to the lost value of being shut down, the PTPC has made several expensive and expedient repairs with the system operational utilizing special clamp systems. As the system continues to age, addressing funding for emergency repairs will be even more important. Emergency repairs typically fall within operations costs. Other emergency repairs are defined as capital by adding value to and extend the life of the system. Finally, some emergency repairs are more costly due to keeping the system operational during fixes. These emergency repairs are made to avoid having to shut the Mill down and avoiding wasted opportunity cost due to lost production. While these are considered long-term fixes similar to a welded repair, they do not materially add to the useful life of the pipeline. The three categories of repair are defined below.

- 1. The following emergency repairs are considered part of standard O&M to be shared by the parties:
  - Repair bands, welds, and parts replaced due to ordinary wear and tear or accidents.
  - Facility repairs (homes) less than threshold determined for the definition of Capital (\$10,000).
  - Emergency supplies funding purchasing and storing backup materials.
  - Cost of repairs through contracted services in which competitive bids can be obtained.
  - Any repairs between City Lake and the point of delivery that require the pipeline to be shut down but can be resolved within three days. Three days is the storage capacity of the City reservoir system.
  - Any repairs needed upstream of City Lake that require pipeline shutdown but for which operations can be resumed within 10 days. With conservation measures implemented, the storage capacity of City Lake is sufficient to provide the necessary water supply for 10 days.
- 2. The following emergency repairs are considered Capital:
  - Repairs with a value of \$10,000 or more, which are expected to extend the life of the infrastructure by 10 years or more.
  - Examples of repairs that qualify as capital include replacement of a section of pipeline such that the section can be connected to in the future without replacement; replacement of a roof at one of the facilities, replacement of valves; repairs of the diversions that will last more than 10 years.
  - Replacement of a cathodic system rectifier.
- 3. Repairs made for the operational expediency of the PTPC that avoid shutting down the pipeline but requires specialty fittings or procedures that increase the cost of the repair fall outside of the definition of operational repairs or a capital expense. These repairs would be expected to be provided by the PTPC and the incremental extra cost for keeping the pipeline operating during the repair would be the responsibility of PTPC.

Typically, an emergency fund reserve should equal what would be expected in terms of a repair to be made at one time. For the purposes of establishing an emergency fund, a severe break in the 1928 pipe could result in replacement of several sections of pipe and restoration of washout damage. A value of the emergency repair could easily approach \$100,000 or more. Holding this in reserve to ensure that emergencies can be addressed would be considered a reasonable approach given the risk analysis performed in the Capital White Paper. It is recommended that the capital sinking fund include a minimum balance target of \$2,000,000 in order to accommodate emergency repairs and variations in capital improvement costs.

### Operating and Capital Funds and Reporting

Presently, the City is depositing \$55,000 per year into the OGWS Capital Fund which helps pay for items that come forward unexpectedly such as the installation of a carrier pipe under the runway at the airport and the value engineering work associated with the agreement negotiation. The current balance of the OGWS fund is \$587,000.

Given that the City's utilities are enterprise funds or self-supporting business units, specific funds are developed to prevent comingling of general taxation dollars and utility revenues. In addition, the development of funds allows managers to track, report, and budget operations separately from capital. Public private partnerships also drive the need to create specific funds to ensure that funds from the private party are tracked and used appropriately. Utilizing accounting procedures along with reporting ensures stability and transparency.

A recommended approach to managing accounting for the OGWS is to track and monitor operating costs while building a sinking fund for capital replacement. The allocation of rate revenues to both operations and capital are established by the rate model. Each year the funds are reconciled against actual costs incurred which allows for adjustments to be made to revenues and costs, typically every 5 years.

Reporting must include the following in order to prepare for audits as well as be available as evidence for debt issuance in the preparation of an official statement. Examples of reporting include the following topics:

Operational Costs

Labor Supplies and equipment Utilities Leases and permits Environmental monitoring Security Emergency maintenance Contracted work Operating reserve funding Overhead Taxes

Capital Costs Project Administration Engineering Overhead Construction Contingency Financing costs Taxes

The financial success of a partnership relies upon predictability and continuous review. Predictability is established using 5-year projections that include operations and 20-year capital plans with a periodic review every 5 years. The rate models used to establish rates for a 5-year period accounts for changes in cost, and inflation as well as actual revenue. Changes to the financial program will occur sometimes to the positive as with the case of receipt of grants and other times to the negative such as higher than predicted inflation. Through a partnership of monitoring and working together in tracking costs and changes, a partnership is best suited for success. It is recommended that coordination concerning budgets occur semi-annually for operating fund tracking as well as for capital fund tracking. In addition, when capital projects are undertaken, costs should be tracked and the partners should work together to implement the capital plan. When costs exceed the capital plan's predictions on an aggregate basis, both partners will convene to make amendments necessary to fund the operations and capital programs.

## Financial Stability, Debt Issuance and Surety

One of the key negotiating points of any public-private partnership centers around financial stability and surety. The topic of surety takes an increased level of importance once debt is issued and bond ratings are pursued in the market. Funding for both operations and capital requires financial surety in case one party is unable to fulfill their operational and financial obligations under a public private partnership agreement. In particular, funding large capital investments is often challenging. These concepts can be fundamentally at odds between private and public partners based on differing core financial objectives. Public entities have limited capacity to generate large capital sums due to the impact on ratepayers. Cities also look at financial stability throughout system life which can be 100 years or more. Typically, through understanding the condition of assets, a schedule for replacement is established over time to smooth the fiscal impacts. Private entities typically focus on internal rates of return over a shorter period to optimize operations and profitability of the business. This shorter-period analysis helps businesses weather downturns and reinvest in capital/operations. While financial objectives vary, these differences can be addressed through the agreement. The following are considerations concerning financial stability and surety:

• Financial stability with respect to operations of the system as it exists today should the PTPC leave the arrangement is discussed in the Assets White Paper. The likely outcome would be for the City to temporarily discontinue operation of the Big Quilcene diversion and 10.3 miles of the pipeline upstream of Lords Lake without having a partner to mitigate operational costs.

- Utilizing a sinking fund approach for Capital Replacement is anticipated in addition to funding some near-term infrastructure replacement with debt issuance. The 20-year capital replacement estimate is \$43 million as identified in the Capital White Paper. The more funds that can be saved ahead of capital expenditures lowers the amount of debt that must be issued. The disadvantage of a sinking fund approach is that interest on reserves in a public investment environment are typically 2-3% lower than the cost of borrowing. However, absent a sinking fund approach, large sums of funding would need to be raised through public and or private debt. Based on discussions with PTPC, it is understood that issuance of private debt is not a likely option.
- Issuance of large municipal debt must consider several factors. First, the City will need to demonstrate on an annual basis sufficient net operating income to pay debt service. This is in the form of a debt service coverage ratio which is calculated by taking net operating income and dividing it by the debt service. Bond covenants typically have a minimum senior-lien debt service coverage ratio of 1.25. Higher projected debt service coverage ratios can lead to improved bond ratings and lower interest rates. S&P's rating methodology's maximum score for the all-in (senior-lien and junior-lien) coverage ratio factor starts at a minimum of 1.60. Second, given the City's reliance on a single large private partner to contribute a large portion of the system's revenue, a method of surety is necessary to cover payments should the private partner cease to operate. Historically, a reserve account or fund equivalent to one year's debt service has been necessary. Additionally, a bankruptcy proof letter of credit, or provision of other assets as collateral may be needed. Examples of other security include liquidated damage provisions in the contract, a surety bond, insurance, or posting securities or pledging property. A combination of different security is possible. The City will need to demonstrate how it will pay for operations and debt service, through a combination of revenues, reserves, letters of credit, and retail rate increases under a worst-case scenario where PTPC ceases using water. Given the potential size of the borrowing, the ability to issue bonds will rely upon the letter of credit or other cash security deposit provided by the PTPC. If the PTPC cannot provide surety, then a fully funded sinking approach without issuing debt must be used.

When municipal debt is issued and a large portion of the debt goes toward support of a private entity, the debt may be required to be issued as a taxable bond. In order for bonds to qualify as tax-exempt bonds, there are a number of IRS rules that qualify the City under Safe Harbor. These provisions are further detailed in the References through a memo from Foster Garvey entitled "Safe Harbor Conditions for Qualified Management or Service Contracts Under Requirements for IRS Rev. Proc. 2017-13". Based on the current rules, a contract between a municipality and a private party for water services must meet the exceptions for "private use" in order for the municipality to issue bonds with the interest of which is tax exempt. A contract does not qualify for an exception if the private party is required to continue to purchase water even if it as not need for that water. If the private party does not have a requirement for water, the contract may contain "reasonable" liquidated damage provisions. It is in the interest of all parties to work with the City's bond counsel to determine if the contract can be structured to maintain the ability to issue tax exempt debt.

• The State Public Works Trust Fund and the Drinking Water State Revolving Fund programs may provide alternative funding sources to municipal bonds with low interest loans.

## **Grant Funding**

Grant funds from State and Federal sources may be available to assist in addressing capital needs for the system. Grant resources are competitive and dependent on congressional or legislative funding and thus are highly unpredictable and cannot be accurately programmed into a capital plan. Any grants received help lower the burden of capital investment. Typically, grant resources are not available for replacement of systems; however, as a critical water supply, there is an opportunity to secure grants for pre-disaster mitigation based on impacts to the community. The following grant resources may be available:

- FEMA Grants are usually issued to help protect against disasters such as earthquakes. These grants usually come in the form of pre-disaster mitigation grants which may allow funding to be applied to projects like the Lords Lake Dam stabilization.
- Direct State and Federal Appropriations may be available during times of stimulus or economic recovery when the Federal Government provides additional infrastructure funding. Such appropriations tend to be on the order of less than \$2.5 million.
- A portion of the steel pipe replacement falls in a location that could be made more affordable through grants in conjunction with the development of the Olympic Discovery Trail Grants (Anderson Lake to City Lake).
- Funding associated with Salmon Recovery may also be a source of grant funding that has a benefit to fish or is related the economic impacts on communities resulting from the decline of timber and fisheries industries.
- Climate Change Grants are anticipated in the future both to reduce CO<sub>2</sub> emissions and to address adaptation needs resulting from climate change. Water supply storage and conservation projects are likely candidates.
- The Economic Development Administration provides funding to economically disadvantaged communities and has lately focused on economic resiliency connected with natural disasters.
- The Environmental Protection Agency provides funding associated with drinking water supply systems. Generally, funding is also administered through the State Department of Health in the form of loans through the Drinking Water State Revolving fund; however, grants are also authorized through the EPA at times.

## Water Affordability

Presently the City is paying down debt for the City Lake outlet replacement project, the 5 MG reservoir and the water treatment plant. The debt service is \$1.2 million annually. The City has a capital surcharge of \$22 per month inside the City and \$26.40 for customers outside the City, which covers the debt service for the water treatment facility and other water service capital projects.

The City's retail water rates are developed with a utility rate model and adopted by the City Council. The City is required to operate the water utility as an enterprise fund meaning that the City must collect the revenue required to operate the system in accordance with the Water System Plan adopted in 2019. At the same time, water systems and the communities they serve are faced with difficult decisions balancing the cost of providing water service with utility rates that are affordable to those who are served. Thus, governing bodies consider affordability impacts of the water rates along with other utilities and taxes when making decisions. It is critical that systems are operated to meet regulatory requirements as well as debt service obligations such that water systems remain sustainable enterprises, and that the fiscal stress on low-income households is kept from becoming overwhelming.

The City's average combined water, wastewater, and stormwater utility rate for single family residential is approximately \$146 per month.

The US Environmental Protection Agency oversees water utilities at the Federal level. The US EPA has developed a method for evaluating the household burden of utility rates associated with water utilities. The framework for measuring household affordability and financial capability include:

1. The Household Burden Indicator (HBI), defined as basic water service costs (includes water, wastewater, and stormwater combined) as a percent of the 20th percentile household income (i.e., the Lowest Quintile of Income (LQI) for the Service Area); plus

2. The Poverty Prevalence Indicator (PPI), defined as the percentage of community households at or below 200% of Federal Poverty Level (FPL).

It is recommended that household affordability for the community be deemed high burden if total basic water costs are a relatively high percentage of household income for the LQI household, and a relatively large proportion of the community households are economically challenged (i.e., the upper left portion of the matrix). However, if less than 20% of households are below 200% of FPL, then the community as a whole may be relatively affluent such that relatively high total water costs may not create a high burden for the community, even if water costs are a relatively high percentage of LQI (although there are still probably households that will struggle). The matrix approach also reflects that water services may be highly burdensome and unaffordable if a large proportion of the community's households are below twice the FPL, even if water bills are a relatively low percent of LQI (the lower left portion of the matrix).

HBI - Water Costs as a	PPI - Percen	t of Households Below 2009	% of FPL
Percent of Income at LQI	>=35%	20% to 35%	<20%
>=10%	Very High Burden	High Burden	Moderate-High Burden
7% to 10%	High Burden	Moderate-High Burden	Moderate-Low Burden
< 7%	Moderate-High Burden	Moderate-Low Burden	Low Burden

US Environmental Protection Agency

The number of households in the City of Port Townsend below 200% of the FPL is 2,248. As a percentage of the total number of households, this equates to 29.5%.

The City's LQI (98368 zip code) for five years ending in 2019 was \$15,201. and the average water rate (includes water, wastewater, and stormwater) for a single family residential is \$146 per month or \$1752 per year. Thus, with 29.5% of the households having an income less than 200% of the Federal Poverty Level and with water costs at 11% LQI average, the City's current status for household burden indicator is considered a "High Burden."

Additional rate burden due to the addition of funding the needs of the OGWS will push the rate burden even higher. However, delay in funding the system only creates a larger rate impact for the future. As time passes, the future rate impact will grow significantly.

### <u>References</u>

- City Current 2021 Utility Rates
- Memo from Foster Garvey entitled "Safe Harbor Conditions for Qualified Management or Service Contracts Under Requirements for IRS Rev. Proc. 2017-13"
- Memo from Foster Garvey entitled "Output Facility Regulations"

### City Utility Rates

		WATER - M	IONTHLY FEE	3		
BASE RATE - (R	esidential and Cou	mmercial)	USAG	E FEE - Charge	is per <u>1,000</u> gal	lons
Meter Size	Inside City	Outside City	Type of A	lecount	Inside City	Outside City
5/8" to 3/4" (Low Income)	\$10.71	\$12.85	Low Income Resi	dential	\$3.03	\$3.64
5/8" to 3/4"	\$21.42	\$25.70	Residential (inclusion	ding duplexes)	\$3.03	\$3.64
1**	\$53.58	\$64.30	Multi-Family (3 o	r more units)	\$2.35	\$2.82
1 1/2"	\$107.14	\$128.57	Commercial A Me	$eter \le 2^m$	\$3.49	\$4.19
2"	\$171.43	\$205.72	Commercial B M	eter $\geq 3^{m}$	\$5.24	\$6.29
3"	\$321.42	\$385.70	Government		\$4.54	\$5.45
4"	\$535.70	\$642.84	Irrigation Rates:			
6"	\$1,071.41	\$1,285.69	Winter Rate ()	Nov – April)	\$3.63	\$4.36
8"	\$1,714.25	\$2,057,10	Summer Rate	(May - Oct)	\$6.37	\$7.64
WASTEW	ATER - M	ONTHLY FE	ES FOR INSID	E CITY LIM	IT'S ONL	Y
BASE RATE (Multi-Family	& Commercial)		US	AGE FEE		
Meter Size	Inside City	Ty	pe of Account		Inside City	
5/8" to 3/4" (Low Income)	N/A	Low Income R	tesidential	\$17.96 (≤3 \$22.20 (≥3	,000 gallons w ,000 gallons w	ater usage) /ater usage)
5/8" to 3/4"	\$ 31.83	Residential (In	cluding Duplexes)	\$ 35.91 (≤3 \$ 44.40 (≥ 4	,000 gallons w ,000 gallons w	uter usage) ater usage)
1	\$ 47.74	Multi-Family	& Commercial volum	e charges are ba	ased on 1,000	Gallons
1 15"	\$ 79.57	Multi-Family	(3 or more units)	\$ 3.66		
2**	\$122.00	Commercial	A Meter ≤ 2 <sup>m</sup>	\$ 4.93		
3"	\$445.58	Commercial	B Meter $\geq 3^{m}$	\$ 3.24		
4"	\$498.62	Government		\$ 4.83		
6"	\$742.63	Irrigation W	Vinter (Nov - April)	N/A		
8"	\$1,018.46	Irrigation - S	ummer (May - Oct)	N/A		
	1	STORM FE	E PER MONTH			
≤ 3,000 square feet	\$8.33 per mont	h (Low Income R	ate, \$4.16 per month)			
> 3,000 square feet	Your square for	otage, divided by	3,000 = N; \$8.33 x N	= storm charge p	er month.	
		AXES AND	SURCHARGE	S		
Capital Surcharges:						
Water (Inside City)	\$22.00	Monthly fee (I	ow Income Rate is \$11	.00).		
Water (Outside City)	\$26.40	Monthly fee (I	ow Income Rate is \$13	3.20).		
Wastewater	\$9.00	Monthly fee (I	ow Income Rate is \$4.	50).		
Stormwater	\$6.00	Monthly fee (I	ow Income Rate is \$3.	00)		
City Utility Tax	22%	Assessed mont	thly on utility service m	tes only, not sure	charges.	
a de la desta de la composición de la c		MISCE	LLANEOUS			
Late Fee	\$5.00	Minimum mon greater) for pay	thly penalty or 1 ½% o yments not received by	f the outstanding the due date.	balance (whic	hever is
Meter Testing	\$60.00	If test discloses	s an error of 10% or gro	eater the fee will	be refunded.	
New Account Setup	\$10.00	A one-time, no	on-refundable fee for ea	ch new account s	setup.	
Returned Cheeks	\$15.00	For processing	any non-negotiable ch	ecks.		
Turn-On/Turn-Off Fees	Inside City	Outside City		Commen	ts	
Normal Business Hours	\$20.00	\$25.00	Service call between	the hours of 8:00	)am - 3:30pm	
Business Day- After Hours	\$60.00	\$75.00	Service call between	the hours of 3:30	0pm - 8:00am	
Same Day Reconnect	\$60.00	\$75.00	Service call between to non-payment requisame day service	the hours of 8:00 ires a turn-on req	0am - 3:30pm uest <u>prior</u> to 2	Shut off due :00pm for
Meter Reading	\$20.00	\$30.00	Leak checks or reads	outside of the ne	ormal monthly	reading period
the second second						- B 1

# **Olympic Gravity Water System** Legal Considerations White Paper

### October 16, 2021

#### <u>Preface</u>

The City of Port Townsend and the Port Townsend Paper Mill have a partnership history of supplying water to the Quimper Peninsula, City of Port Townsend, and Paper Mill dating back to 1928. The City of Port Townsend (City) and Port Townsend Paper Corporation (PTPC) are in the process of developing a new partnership agreement that will address water supply looking forward to the next 100 years.

Like the development of the Olympic Gravity Water System (OGWS) in the late 1920's, the development of an agreement between the City and PTPC (PTPC) is a significant undertaking with the stakes being high for both parties. As such, the negotiation of a mutually beneficial agreement warrants thoughtful collaboration based on the best data possible.

As a way to ensure good factual data is available for the negotiation, seven technical white papers break down information into manageable segments. In the following specific topic area categories, the City and PTPC have worked together to develop these white papers for potential items to consider during the negotiation of the agreement.

- 1. Assets: Understanding each entity's assets and capacities that support investment.
- 2. Stakeholders: The public, private property owners, and many agencies are stakeholders.
- 3. Planning and Environmental Considerations: Future water supply needs, climate change and water supply availability are important factors to plan for into the future.
- 4. Operations: Operational requirements, efficiencies and goals, cost, and reliability as well as determining the line between capital and ordinary wear-and-tear is a major part of any public private partnership agreement.
- 5. Capital Investments: Capital needs are extensive and need to be informed by a value engineering study for system reliability.
- 6. Funding and Resources: In order to address operational and capital needs, a plan is necessary to fund system needs ensuring that sustainability is achieved.
- 7. Legal Considerations: Legal considerations impact the form of the agreement depending on negotiation outcomes. Surety and performance are two key legal discussion points.

The intent of developing these white papers is to provide a resource to inform negotiation and as background for the public and decision makers. All of the white papers will be assembled into a comprehensive technical report in support of the development of a comprehensive recommendation for the Port Townsend City Council and the PTPC Board of Directors.

The following white paper addresses water right considerations and references a publication by the Municipal Research Services Center (MRSC) which provides a comprehensive overview of contract and agreement considerations as it relates to Washington State laws.

## Introduction

The Mill and the City have enjoyed a public private partnership since 1928. The public private partnership established in 1928 and updated several times was formalized as a lease agreement in which the Mill made payments to the City for capital and agreed to operate the system on behalf of both parties.

As the City and the Mill look forward to structuring a new agreement, several options are available in terms of the form of the partnership. Embedded in choosing the appropriate form are a number of legal considerations that may drive the type of public private partnership along with the other technical considerations included in the series of white papers.

### Background

The original lease between the City of Port Townsend and the National Paper Products Company was for a term of 30 years starting in 1928 for a total sum of \$460,000. This lease was succeeded in 1944 by a transfer to the Crown Zellerbach Corporation. It included a \$15,000 per year rental for a period of 10 years beginning in 1958 with the requirement that the City would immediately undertake replacement of deteriorating sections of the pipeline when the lease took effect. In 1956 the lease was renewed for a period of 30 years with a total payment of \$3,267,042.17, which was used to pay for the waterline replacement and improvements. The 1956 lease was modified in 1983, extended it to March 15, 2020, and assigned it to the Port Townsend Paper Corporation with substantially no change to the 1956 terms except for increasing the City share of the water from 4 to 5 million gallons per day.

## Water Rights

Municipal water law governs public water systems, like utilities, to ensure they supply safe and reliable drinking water to the public in a way that is consistent with broader water law. While most water rights are governed by the "use it or lose it" principle, municipal water rights are not. Under municipal water law, municipal water suppliers can retain water rights they are not currently using. This gives municipal suppliers certainty about maintaining their water rights while allowing them flexibility to plan for future growth. With this flexibility, however, comes the requirement to conserve water.

## Legal Principles for Agreements

The Municipal Research Services Center provides a comprehensive review of principles for Agreements with private entities in Washington State. This agreement will not constitute a business partnership, but rather a cooperative approach to operating a system. Washington State has key constitutional prohibitions including gifting of public funds and lending of credit that must be considered. The reader is referred to the following link, page 26.

City and County Options for Creative Financing: PFDs, PDAs and 501(c)(3)s (mrsc.org)

### EXHIBIT B – OGWS-Related Assets

The City's OGWS assets include the following:

- Municipal Water Rights Certificates 322 and 7028.
- Real property owned in fee simple (Parcels Nos. 802-281-000; 802-331-001; 901-191-006; 901-194-001; 191-194-004; 001-332-011; 948-603-502; 948-603-504).
- US Forest Service Permits.
- Diversion structures at the Big Quilcene River, including the residence, shop, and leased real property located on US Forest Service-owned property.
- Diversion structure at the Little Quilcene River.
- Lords Lake Reservoir including real property.
- City Lake Reservoir including residence, shop, and real property.
- Approximately twenty-nine (29) Miles of Pipeline between the diversions and reservoirs and between the reservoirs and the Delivery Meter Point.
- Approximately twenty-nine (29) miles of pipeline easement between the diversions and reservoirs.

The Mill's current assets used for OGWS purposes include the following:

- Real Property owned in fee simple (Parcel Nos. 964-800-004; 948-602-205; 948-602-201; 948-602-105; 948-602-101; 948-600-805; 986-703-501; 986-702-201; 986-702-101; 986-700-802; 986-700-701; 947-100-802; 947-100-503; 947-100-501; 001-162-005; 001-161-003; 001-161-002).
- Tools, vehicles, equipment, and spare parts purchased by the Mill.

EXHIBIT C - Rate Model	and	Capital	Spending	Plan
------------------------	-----	---------	----------	------

		2022	2023		2024		2025		2026
Allocation Basis: Share of Total Volume									
Operation & Maintenance Costs									
Mill Operating Costs		341,775	464,814	\$	474,110	\$	483,592	\$	493,264
Mill Emergency Repair		45,000	61,200		62,424		63,672		64,946
City Operating Costs		76,500	104,040		106,121		108,243		110,408
City Management Fee (in lieu of Utility Tax)		150,000	204,000		208,080		212,242		216,486
Total	\$	613,275 \$	834,054	\$	850,735	\$	867,750	\$	885,105
Annual Sinking Fund Contribution		2,689,045	3,807,178		3,939,016		4,075,273		4,216,095
Debt Service		-	-		-		-		-
Less: Use of Debt Reserve for Final Payments		-	-		-		-		-
Additional Coverage Required		-	-		-		-		-
State Excise Taxes		174,868	245,767		253,632		261,748		270,124
Total Allocable Cost	\$	3,477,188 \$	4,886,999	\$	5,043,383	\$	5,204,771	\$	5,371,324
Annual Cost Allocated to Mill	\$	3,179,295 \$	4,468,327	\$	4,611,313	\$	4,758,875	\$	4,911,159
Annual Mill Demand		2,962 MG	3,950 MG		3,950 MG		3,950 MG		3,950 MG
Mill Rate per Thousand Gallons (kgal)		\$1.07	\$1.13		\$1.17		\$1.20		\$1.24
Annual Cost Allocated to City	Ś	297.893 Ś	418.672	Ś	432.069	Ś	445.896	Ś	460.164
Annual City Demand	*	278 MG	370 MG	•	370 MG	•	370 MG	*	370 MG
City Rate per Thousand Gallons (kgal)		\$1.07	\$1.13		\$1.17		\$1.20		\$1.24
Rate Calculation		2027	2028		2029				
							2030		2031
Allocation Basis: Share of Total Volume							2030		2031
Allocation Basis: Share of Total Volume							2030		2031
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs		503.130 Ś	513.192	Ś	523.456	Ś	<b>2030</b> 533.925	Ś	<b>2031</b> 544.604
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair	\$	503,130 \$ 66.245	513,192 67.570	\$	523,456 68.921	\$	2030 533,925 70,300	\$	<b>2031</b> 544,604 71.706
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs	\$	503,130 \$ 66,245 112,616	513,192 67,570 114,869	\$	523,456 68,921 117,166	\$	2030 533,925 70,300 119,509	\$	<b>2031</b> 544,604 71,706 121,899
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax)	\$	503,130 \$ 66,245 112,616 220,816	513,192 67,570 114,869 225,232	\$	523,456 68,921 117,166 229,737	\$	2030 533,925 70,300 119,509 234,332	\$	2031 544,604 71,706 121,899 239,019
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$	513,192 67,570 114,869 225,232 920,863	\$	523,456 68,921 117,166 229,737 939,280	\$	2030 533,925 70,300 119,509 234,332 958,066	\$	2031 544,604 71,706 121,899 239,019 977,227
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393	513,192 67,570 114,869 225,232 920,863 4,180,337	\$	523,456 68,921 117,166 229,737 939,280 4,161,919	\$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134	\$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393	513,192 67,570 114,869 225,232 920,863 4,180,337	\$	523,456 68,921 117,166 229,737 939,280 4,161,919	\$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134	\$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 -	513,192 67,570 114,869 225,232 920,863 4,180,337 -	\$	523,456 68,921 117,166 229,737 939,280 4,161,919	\$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - -	\$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 -
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - - -	513,192 67,570 114,869 225,232 920,863 4,180,337 - -	\$	523,456 68,921 117,166 229,737 939,280 4,161,919 - -	\$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - -	\$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - -
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - - 270,124	513,192 67,570 114,869 225,232 920,863 4,180,337 - - - 270,124	\$	523,456 68,921 117,166 229,737 939,280 4,161,919 - - 270,124	\$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - 270,124	\$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - - 270,124
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes Total Allocable Cost	\$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - - 270,124 5,371,324 \$	513,192 67,570 114,869 225,232 920,863 4,180,337 - - - 270,124 5,371,324	\$ \$ \$	523,456 68,921 117,166 229,737 939,280 4,161,919 - - - 270,124 5,371,324	\$ \$ \$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - 270,124 5,371,324	\$ \$ \$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - - 270,124 5,371,324
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes Total Allocable Cost Annual Cost Allocated to Mill	\$ \$ \$ <b>\$</b>	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - - 270,124 2 5,371,324 \$	513,192 67,570 114,869 225,232 920,863 4,180,337 - - 270,124 5,371,324 <b>4,911,159</b>	\$ \$ \$ <b>\$</b>	523,456 68,921 117,166 229,737 939,280 4,161,919 - - 270,124 5,371,324 <b>4,911,159</b>	\$ \$ \$ <b>\$</b>	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - 270,124 5,371,324 4,911,159	\$ \$ \$ <b>\$</b>	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - - 270,124 5,371,324 4,911,159
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes Total Allocable Cost Annual Cost Allocated to Mill Annual Mill Demand	\$ \$ \$ <b>\$</b>	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - 270,124 5,371,324 \$ 4,911,159 \$ 3,950 MG	513,192 67,570 114,869 225,232 920,863 4,180,337 - - 270,124 5,371,324 4,911,159 3,950 MG	\$ \$ \$ <b>\$</b>	523,456 68,921 117,166 229,737 939,280 4,161,919 - - 270,124 5,371,324 4,911,159 3,950 MG	\$ \$ <b>\$</b>	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - 270,124 5,371,324 4,911,159 3,950 MG	\$ \$ <b>\$</b>	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - - 270,124 5,371,324 4,911,159 3,950 MG
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes Total Allocable Cost Annual Cost Allocated to Mill Annual Mill Demand Mill Rate per Thousand Gallons (kgal)	\$ \$ \$ <b>\$</b>	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - 270,124 5,371,324 \$ 3,950 MG \$1.24	513,192 67,570 114,869 225,232 920,863 4,180,337 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24	\$ \$ <b>\$</b>	523,456 68,921 117,166 229,737 939,280 4,161,919 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24	\$ \$ <b>\$</b>	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24	\$ \$ \$ <b>\$</b>	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes Total Allocable Cost Annual Cost Allocated to Mill Annual Mill Demand Mill Rate per Thousand Gallons (kgal) Annual Cost Allocated to City	\$ \$ \$ \$ \$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 - 270,124 5,371,324 \$ 4,911,159 \$ 3,950 MG \$1.24 460,164 \$	513,192 67,570 114,869 225,232 920,863 4,180,337 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164	\$ \$ \$ \$ \$	523,456 68,921 117,166 229,737 939,280 4,161,919 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164	\$ \$ \$ \$ \$	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164	\$ \$ \$ \$ \$	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - 270,124 5,371,324 4,911,159 3,950 MG \$1,24 460,164
Allocation Basis: Share of Total Volume Operation & Maintenance Costs Mill Operating Costs Mill Emergency Repair City Operating Costs City Management Fee (in lieu of Utility Tax) Total Annual Sinking Fund Contribution Debt Service Less: Use of Debt Reserve for Final Payments Additional Coverage Required State Excise Taxes Total Allocable Cost Annual Cost Allocated to Mill Annual Mill Demand Mill Rate per Thousand Gallons (kgal) Annual Cost Allocated to City Annual City Demand	\$ \$ \$ \$ \$	503,130 \$ 66,245 112,616 220,816 902,807 \$ 4,198,393 2 270,124 5,371,324 \$ 4,911,159 \$ 3,950 MG \$1.24 460,164 \$ 370 MG	513,192 67,570 114,869 225,232 920,863 4,180,337 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164 370 MG	\$ \$ \$ \$	523,456 68,921 117,166 229,737 939,280 4,161,919 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164 370 MG	\$ \$ <b>\$</b> <b>\$</b>	2030 533,925 70,300 119,509 234,332 958,066 4,143,134 - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164 370 MG	\$ \$ <b>\$</b> <b>\$</b>	2031 544,604 71,706 121,899 239,019 977,227 4,123,972 - - 270,124 5,371,324 4,911,159 3,950 MG \$1.24 460,164 370 MG

City of Port Townsend Raw Water Rate Analysis Capital Improvement Plan

۵	xpenditures In Curr	ent Dollars									
Capital Improvement Plan	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Pipeline and Appurtenances Easement Survey Marking Vegetation Clearing - Contracted Road Maintenance Cuivert Replacement (5 Cuiverts per 5 Years) Land Swans - Exemment Right Princhasce		75,000			25,000		200 000 2		75,000	25,000 25,000	
Air Valves and Boxes (25) Cathodic Protection Condition Assessment Steel Pipe Replacement	145,000 150,000 -	350,000			125,000	683,426	662,235	641,700	621,802	20,048,772	ı
<mark>Diversions</mark> Big Quilcene Diversion Replacement (2058) Big Quilcene Diversion House and Buildings (Year ?) Little Quilcene Diversion Rehabilitation (2051)											
Reservoirs Lords Lake Security Cameras Lords Lake Fencing Replacement City Lake Fencing City Lake House and Outbuildings (Year?)		10,000									
<mark>Equipment</mark> Tractor, Mower, Backhoe?					000'06						
<b>Spare Parts</b> Pipe (4 Sections 24") Pipe (4 Sections 30")		13,570 7,300									
Regulatory Capital Needs Lords Lake East Dam Engineering Assessment Lords Lake East Dam Rehabilitation	250,000	200,000	200,000	3,600,000							
Capital Needs Operations and Current Capacity Improvements Lords Lake Expansion (In Addition to East Dam Rehab) Lords Lake Pipeline Improvements	(n)			2,500,000							
Capital Needs for Growth (Including adding Tri - Area) Section Q.24" Pipeline Replacement and Upsizing										•.	
Reserves and Unanticipated Capital Periodic Investment into Emergency Reserve							•				
Total Cost In Current Dollars	\$ 545,000 \$	655,870 \$	200,000 \$	6,100,000 \$	240,000 \$	683,426 \$	862,235 \$	641,700 \$	696,802 \$	20,098,772 \$	1
Inflation Multiplier Total Projected Cost (Escalated)	\$ 545,000 \$	1.03 676,858 \$	1.07 213,005 \$	1.10 6,704,539 \$	1.13 272,226 \$	1.17 800,000 \$	1.21 1,041,606 \$	1.25 800,000 \$	1.29 896,494 \$	1.33 26,686,204 \$	1.37

City of Port Townsend Raw Water Rate Analysis Capital Improvement Plan

DRAFT

Capital Improvement Plan	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Pipeline and Appurtenances Easement Survey Marking vegetation Clearing - Contracted Road Maintenance Culvert Replacement (5 Culverts per 5 Years) Land Swaps - Easement Right Purchases Air Valves and Roves (75)				25,000	75,000				25,000 25,000	50,000
Cathodic Protection Condition Assessment Steel Pipe Replacement			398,396	386,043	374,073	362,473	11,663,823			
<mark>Diversions</mark> Big Quilcene Diversion Replacement (2058) Big Quilcene Diversion House and Buildings (Year?) Little Quilcene Diversion Rehabilitation (2051)				450,000						
Reservoirs Lords Lake Security Cameras Lords Lake Fencing Replacement City Lake Fencing City Lake House and Outbuildings (Year?)				650,000					100,000 100,000	
<mark>Equipment</mark> Tractor, Mower, Backhoe?										
<b>Spare Parts</b> Pipe (4 Sections 24") Pipe (4 Sections 30")										
<b>Regulatory Capital Needs</b> Lords Lake East Dam Engineering Assessment Lords Lake East Dam Rehabilitation										
Capital Needs Operations and Current Capacity Improvement Lords Lake Expansion (In Addition to East Dam Rehab) Lords Lake Pipeline Improvements	(A)									
Capital Needs for Growth (Including adding Tri - Area) Section Q 24" Pipeline Replacement and Upsizing										
Reserves and Unanticipated Capital Periodic Investment into Emergency Reserve										
Total Cost In Current Dollars	\$ . \$	\$ - \$	398,396 \$ 25	1,511,043 \$	449,073 \$	362,473 \$	11,663,823 \$	- ÷	250,000 \$	50,000
Initiation Multiplier Total Projected Cost (Escalated)	<u> </u>	1.46 - <b>\$</b>	12.1 600,000 \$	2,348,511 \$	1.60 720,298 \$	1.66 600,000 \$	1./1 19,924,883 \$	1./b - \$	1.82 454,835 \$	1.88 93,878

# EXHIBIT D – Operations Agreement

Attached

### <sup>city</sup>of Port ⊛ Townsend

### **OPERATIONS AGREEMENT**

**OPERATIONS AGREEMENT**, dated as for December 30, 2021, between the City of Port Townsend, a Washington municipal corporation, ("City") and Port Townsend Paper Corporation, a Washington corporation ("Mill"). The City and Mill are each a "Party" and collectively the "Parties" to this Operations Agreement (also referred to herein as "Agreement"). The Parties agree as follows:

#### TABLE OF CONTENTS

I.	RECITALS	1
II.	DEFINITIONS	2
III.	SPECIFIC TERMS	2
IV.	GENERAL TERMS	6
V.	REPRESENTATIONS AND WARRANTIES	12

#### List of Attachments

Attachment 1 – Scope of Services

Attachment 2 – Insurance Requirements

#### THIS OPERATIONS AGREEMENT is entered into between the Parties as follows:

#### I. RECITALS

- A. At this time, the Parties have established the mutual benefit for the Mill to provide operation services under this Operations Agreement for the Olympic Gravity Water System ("OGWS").
- **B.** This Agreement for services is included in the Water Supply Agreement as an attachment. Service provided under this Operations Agreement is connected to the Water Supply Agreement, which is specifically related to the cost of water and reliability of the system.
- **C.** This Operations Agreement establishes an understanding between the Parties regarding the expectations associated with operating the OGWS.
- **D.** The intent of this Operations Agreement is to provide for the flexible and efficient operation of the OGWS recognizing there may be situations where the services provided may change over the course of the term of this Operations Agreement including requirements associated with operating the system and the potential for the City to assume operation of the system. This Operations Agreement may be modified without renegotiating the Water Supply Agreement.

#### II. **DEFINITIONS**

Section 2, Definitions, of the Water Supply Agreement, dated December 30, 2021, is specifically adopted and incorporated by this reference. Refer to the Water Supply Agreement for the definitions of capitalized terms used in this Operations Agreement that are not defined below.

"<u>Applicable Law</u>" means (1) any federal, state or local law, code or regulation; (2) any formally adopted and generally applicable rule, requirement, determination, standard, policy, implementation schedule, or other order of any Governmental Authority having appropriate jurisdiction; (3) any established interpretation of law or regulation utilized by an appropriate regulatory Governmental Authority if such interpretation is documented by such Governmental Authority and generally applicable; (4) any Governmental Approval; and (5) any consent order or decree, settlement agreement or similar agreement with a Governmental Authority; in each case having the force of law and applicable from time to time to the siting, permitting, design, acquisition, construction, equipping, ownership, possession, start-up, testing, operation, maintenance, repair, replacement or management of water supply systems.

"City's Designated Management Contact" means the Public Work Director or duly-appointed designee.

"<u>Mill Designated Management Contact</u>" means the Mill Chief Executive Officer or duly-appointed designee.

"Event of Default" is defined in Section III.I of this Operations Agreement.

"<u>Fees and Costs</u>" means the reasonable fees and expenses of attorneys, experts, and other persons, and all court costs, fees, and related expenses incurred in connection with any arbitration, administrative, legal or equitable proceeding in any court, administrative body or arbitral forum.

"<u>Governmental Approval</u>" means any permit, license, certificate, order, consent, authorization, franchise, registration, or other approval from, or required by, any Governmental Authority.

"<u>Governmental Authority</u>" means any federal, state, county, municipal, or regional legislative, executive, judicial or other governmental board, agency, authority, commission, administration, court or other body, or any official thereof, having jurisdiction.

"<u>Water Supply Agreement</u>" or "<u>WSA</u>" means the agreement between the Parties for the supply of water dated December 30, 2021.

"<u>Uncontrollable Circumstance</u>" means acts of sabotage, war, riots, civil disturbances, explosions, epidemics, pandemics, major weather events, earthquakes, floods, lightning, fires, power failure, watermain breaks, shortages or delays in materials, equipment or supplies necessary for the operation and maintenance of the OGWS, issuance of a temporary restraining order or other form of injunction by a court brought by a third party that prohibits a Party from performing its obligations under this Agreement, unforeseeable failure of the OGWS, or other similar events.

### III. SPECIFIC TERMS

- A. Services and Performance by the Mill. The Mill shall provide services as described in Attachment 1 to this Operations Agreement.
- **B. Payment by the City.** The City shall pay the Mill a total amount not to exceed the amount budgeted for OGWS Operations in the City budget as adopted each calendar year pursuant

to Section 9.7 of the Water Supply Agreement. Upon City approval and City compliance with Chapter 3.46.090 PTMC, the Mill will be authorized to perform and be reimbursed for Emergency Repairs. Budget adjustments may be made with the Parties' mutual agreement as described in the Water Supply Agreement or as authorized by the City Council.

- C. Term. This Operations Agreement shall remain in effect until the end of the Water Supply Agreement unless terminated earlier pursuant to the termination provisions in this Agreement.
- **D. Termination.** Either Party shall have the right to terminate this Operations Agreement with one-year prior written notice. Upon termination, the City may assume operational responsibility of the OGWS. If the City assumes operational responsibility, the Mill and City shall coordinate transition of operations to ensure continuity of OGWS operations.
- **E. Insurance Requirements.** At its expense, the Mill shall take out and maintain insurance as set forth in Attachment 2. Insurance costs will be included in the Mill Operating Costs as outlined in the Water Supply Agreement.

### F. Outages and Maintenance of OGWS.

- 1. <u>Coordination.</u> The Mill will use best efforts to avoid any interruptions in the flow of water in the OGWS and will coordinate and schedule any planned Maintenance of the OGWS that would interrupt the water delivered to the City pursuant to the terms of the Water Supply Agreement.
- 2. <u>Notice.</u> The Mill will provide notice to the City's Designated Operations Contact not less than forty-eight (48) hours in advance of planned Maintenance of the OGWS that will interrupt water delivered to the City pursuant to the terms of the Water Supply Agreement. In the event of a forced outage or other Uncontrollable Circumstances, as defined in the Water Supply Agreement, that may affect the delivery and acceptance of the City's water, the Mill shall provide notice to the City's Designated Management Contact as expeditiously as possible.
- G. Corrective Action Rights. If the Mill fails to perform its obligations under this Operations Agreement and fails to implement any required corrective action within thirty (30) days after receiving written notice from the City (or if the deficiency results in no City access to water, within forty-eight (48) hours after receiving written notice from the City), the City shall have the right, but not the obligation, to take any such corrective actions necessary to assure proper operation and maintenance of the OGWS and the ability of the City to receive water from the OGWS. The Mill shall grant to the City any rights of access, ingress and egress, across any property, easements or rights-of-way owned by Mill to allow the City to perform any corrective actions necessary to assure proper operation and maintenance of the OGWS pursuant to this section.

### H. Uncontrollable Circumstances.

1. <u>Relief.</u> The Parties to this Operations Agreement shall be excused from performing any obligation under this Agreement to the extent such failure by a Party to perform directly results from an Uncontrollable Circumstance. The

Parties agree that the relief for an Uncontrollable Circumstance described in this Section III.H shall apply to all affected obligations in this Agreement, except to the extent specifically provided otherwise, notwithstanding that such relief is specifically mentioned with respect to certain obligations in this Agreement but not other obligations. The occurrence of an Uncontrollable Circumstance will not excuse or delay the performance of a Party's obligations under this Agreement not otherwise affected by the occurrence of the Uncontrollable Circumstance.

- 2. <u>Notice and Mitigation</u>. A Party that asserts the occurrence of an Uncontrollable Circumstance shall notify the other Party by telephone on or promptly after the date the Party experiencing such Uncontrollable Circumstance first knew of the occurrence thereof, followed within five (5) days by a written description of:
  - i. The Uncontrollable Circumstance and the cause thereof (to the extent known); and
  - ii. The date the Uncontrollable Circumstance began, its estimated duration, the estimated time during which the performance of such Party's obligations hereunder shall be delayed, or otherwise affected.

As soon as practicable after the occurrence of an Uncontrollable Circumstance, the affected Party shall also provide the other Party with a description of the steps being taken to mitigate and correct the effects of such Uncontrollable Circumstance. The affected Party shall provide prompt written notice of the cessation of such Uncontrollable Circumstance. Whenever an Uncontrollable Circumstance shall occur, the Party claiming to be adversely affected thereby shall, as promptly as practicable, use all reasonable efforts to eliminate the cause therefor, reduce costs and resume performance under this Agreement. While the Uncontrollable Circumstance continues, the affected Party shall give notice to the other Party, before the first day of each succeeding month, updating the information previously submitted. The Party claiming to be adversely affected by an Uncontrollable Circumstance shall bear the burden of proof, and shall furnish promptly any additional documents or other information relating to the Uncontrollable Circumstance reasonably requested by the other Party.

- I. Events of Default. The following shall constitute an Event of Default by a Party to this Operations Agreement:
  - 1. <u>Breach of Representations</u>. If any representation or warranty of such Party hereunder was false or inaccurate in any material respect when made.
  - 2. <u>Breach of Obligations</u>. Such Party's failure to keep and perform any of its material obligations and covenants under this Operations Agreement, which failure or breach continues for thirty (30) days after written notice thereof to that Party, unless the nature of the failure or breach is such that more than thirty (30) days is reasonably required for its cure and the obligated Party has commenced such cure within such thirty (30) days period and thereafter diligently prosecutes the same to completion, provided that any such cure shall be completed within ninety (90) days after such written notice.

- 3. <u>Reorganization or Insolvency</u>. If such Party: (a) makes an assignment for the benefit of creditors; (b) files or acquiesces in a petition in any court (whether or not pursuant to any statute of the United States or of any state) in bankruptcy, reorganization, composition, extension, arrangement or insolvency proceedings, or makes an application in any such proceedings for, or acquiesces in, the appointment of a trustee or receiver for it or over all or any portion of its property; or (c) becomes subject to any petition filed against such Party in any court (whether or not pursuant to any statute of the United States or of any state) in any bankruptcy, reorganization, composition, extension, arrangement or insolvency proceedings where: (i) the Party shall thereafter be adjudicated as bankrupt or insolvent, or (ii) such petition shall be approved by any such court, or (iii) such proceedings shall not be dismissed, discontinued or vacated within ninety (90) days after such petition is filed.
- J. No Waiver. A Party's failure, at any time or times, to require strict performance by the other Party of any provision of this Operations Agreement shall not waive, affect or diminish any right of such Party thereafter to demand strict compliance and performance herewith or therewith. Any suspension or waiver of an Event of Default shall not suspend, waive or affect any other Event of Default whether the same is prior or subsequent thereto and whether the same or of a different type. None of the undertakings, agreements, warranties, covenants and representations of any Party contained in this Operations Agreement and no default or Event of Default by either Party shall be deemed to have been suspended or waived by the other Party, unless such waiver or suspension is by an instrument in writing signed by an officer or other authorized employee of such Party specifying such suspension or waiver.
- **K. Dispute Resolution.** Except as otherwise specifically provided in this Operations Agreement, disputes arising under this Operations Agreement shall be subject to the following alternative dispute resolution process:
  - 1. <u>Invocation</u>. These resolution procedures shall be invoked when any Party sends a written notice to the other Parties (the "Dispute Notice") describing the nature of the dispute and the Party's position with respect to such dispute. The Parties shall expeditiously schedule consultations or a meeting to discuss the dispute informally in accordance with Section III.K.2.
  - 2. <u>Negotiations by Management Representatives</u>. The dispute shall be initially referred to the Mill and City Designated Management Representatives for informal negotiation. The Mill and City Designated Management Representatives shall meet in person or by conference call within seven (7) business days of the date a dispute is referred to them. The period of informal negotiations shall not extend beyond thirty (30) business days from the date of the Dispute Notice, unless the Parties agree in writing to extend this period. The Mill and City Designated Management Representatives may request the assistance of an independent mediator if they believe that such a mediator would be of assistance to the efficient resolution of the dispute.
  - 3. <u>Non-Binding Mediation.</u>If the Management Representatives are unable to resolve any dispute within the period provided in Section III.K.2, in an effort to resolve any conflict, such dispute shall be submitted to non-binding mediation unless the Parties mutually agree otherwise. The Parties shall agree upon a mediator within

seven (7) business days following expiration of the period provided under Section III.K.2. Each Party shall pay fifty percent (50%) of the costs of the mediator. Such mediation shall be concluded within sixty (60) business days after selection of the mediator unless the Parties otherwise agree in writing (the "Mediation Period").

- 4. <u>Tolling of Statute of Limitations</u>. The Parties agree that with respect to any dispute under this Operations Agreement, the period commencing on the date of the Dispute Notice and ending on the day after the conclusion of the Mediation Period (the "Tolling Period"), shall not be included in computing the running of any statute of limitations potentially applicable to any action relating to the subject matter of such dispute; and any defenses of laches, estoppel, or waiver, or other similar equitable defenses related to the subject matter of such dispute based upon the running or expiration of any time period shall not include the Tolling Period.
- 5. <u>Litigation; Venue; Governing Law; Attorney Fees</u>. If non-binding mediation is not successful, the Parties agree that any claim arising under this Operations Agreement may be brought in Superior Court in Jefferson County, Washington, and that such court shall have exclusive jurisdiction and venue for all actions arising out of this Agreement. Each of the Parties hereby agrees to submit to the jurisdiction and venue of such court, and each Party waives any claim of forum non conveniens. This Operations Agreement and all disputes arising under it shall be governed by the laws of the State of Washington. In any lawsuit between the Parties related to this Agreement, the prevailing party will be entitled to receive its reasonable Fees and Costs, in addition to any other relief that may be awarded in the lawsuit.
- 6. <u>Consequential Damages</u>. In no event shall either Party be liable for any indirect, incidental, punitive, special or consequential damages arising out of or related to the services provided under this Operations Agreement.
- 7. <u>Survival</u>. The provisions of this Section III.K shall survive termination of this Operations Agreement.

### IV. GENERAL TERMS

### A. Payment Schedule and Terms.

- 1. The Operations Agreement fee includes direct labor costs, overhead costs, and direct (expense) costs, including materials, supplies, equipment, costs for travel, costs for housing at the Big Quilcene Diversion and City Lake for caretakers, vehicles expenses, small tools and equipment replacement, consumables, and utilities incurred during the billing period. Overhead costs shall be approved by the City each budget cycle pursuant to section 9.7 of the Water Supply Agreement.
- 2. Pursuant to Section 10.2 of the Water Supply Agreement, the Mill shall maintain labor and expense records and endeavor to provide them monthly to the City, and no less than quarterly, along with invoices in a format acceptable to the City for work performed to the date of invoice. The Mill shall provide reports outlining work progress associated with each invoice.

- 3. The Mill shall keep cost records and accounts pertaining to this Operations Agreement available for inspection by the City's representative for five (5) years after final payment. The Mill will provide copies to the City upon request at no additional charge.
- 4. If the services rendered do not meet the requirements of the Operations Agreement, the Mill will correct or modify the work to comply with the Operations Agreement. The City may withhold payment for such work until the work meets the requirements of the Operations Agreement.

### **B.** Indemnification and Hold Harmless.

- 1. <u>Indemnification by Mill</u>. The Mill shall defend, indemnify, and hold harmless the City, its officers, officials, employees, and volunteers from (i) any and all claims, injuries, damages, losses, or suits including attorney fees, solely arising out of or resulting from the acts, errors, or omissions of the Mill in performance of this Operations Agreement, and specifically excluding injuries and damages caused by the sole negligence or willful misconduct of the City, (ii) the failure by the Mill to fulfill any of its obligations under this Operations Agreement, unless such failure has been excused in accordance with the provisions of this Agreement, (iii) a material breach of any of the representations made by the Mill in Section V.A, and (iv) any violation of Applicable Law arising from the activities of the Mill or any of its officers, employees, agents, representatives, or Mills in connection with performance of the Mill's obligations under this Agreement.
- 2. <u>Indemnification by City</u>. The City shall defend, indemnify, and hold harmless the Mill, its officers, officials, employees, and volunteers from (i) any and all claims, injuries, damages, losses, or suits including attorney fees, solely arising out of or resulting from the acts, errors, or omissions of the City in performance of this Agreement, and specifically excluding injuries and damages caused by the sole negligence or willful misconduct of the Mill, (ii) the failure by the City to fulfill any of its obligations under this Operations Agreement, unless such failure has been excused in accordance with the provisions of this Agreement, (iii) a material breach of any of the representations made by the City in Section V.B, and (iv) any violation of Applicable Law arising from the activities of the City or any of its officers, employees, agents, representatives, or contractors in connection with performance of the City's obligations under this Agreement.
- 3. <u>Joint, Concurring, Comparative, or Contributory Fault or Negligence</u>. If joint, concurring, comparative or contributory fault or negligence of the Parties gives rise to the claims, injuries, damages, losses or suits for which the Parties are entitled to indemnification under this section, then any damages or losses shall be allocated between the Parties in proportion to their respective degrees of fault or negligence contributing to such damages or losses.
- 4. <u>RCW 4.24.115; Industrial Insurance, Title 51 RCW</u>. If a court of competent jurisdiction determines that this Operations Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Mill and the City, its officers, officials, employees, and volunteers, the Mill's liability, including the duty and cost to defend, hereunder

shall be only to the extent of the Mill's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Mill's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification and without creating any third-party beneficiaries or rights. This waiver has been mutually negotiated by the Parties. The provisions of this section shall survive the expiration or termination of this Agreement.

#### C. Defense of Claims.

- 1. <u>Notice of Claims and Legal Proceedings.</u> If either Party believes that it has suffered or incurred, or will suffer or incur, any damages for which it is entitled to indemnification under Section IV.B.1 or IV.B.2, that Party ("Notifying Party") shall notify the other Party ("Notified Party"). The Notifying Party will specify the factual basis of the claim in reasonable detail in such notice. If any legal proceeding is instituted by or against a third party with respect to which either Party intends to claim any damages, the Party claiming any such damages ("Notifying Party") shall promptly notify the other Party ("Notified Party") of such action or suit. The failure of either Party to give notice required by this section will not affect that Party's rights under Section IV.B.1 or IV.B.2, except and to the extent that such failure is actually prejudicial to the right or obligations of the other Party.
- 2. Assumption of Defense. If either Party gives notice ("Notifying Party") to the other Party ("Notified Party") pursuant to Section IV.C.1 of the assertion of a thirdparty claim, the Notified Party will be entitled to participate in the defense of such third-party claim, and, to the extent that it wishes to, assume the defense of such third-party claim with counsel selected by the Notified Party reasonably satisfactory to the Notifying Party. If the Notified Party elects to assume the defense of such third-party claim, that Party shall not, so long as it diligently conducts such defense, be liable to the Notifying Party for any fees of other counsel or any other expenses with respect to the defense of such third-party claim, in each case subsequently incurred by the Notifying Party in connection with the defense of such third-party claim. If the Notified Party assumes the defense of a third-party claim, no compromise or settlement of such third-party claims may be effected by the Notified Party without the Notifying Party's consent, unless there is (a) no finding or admission of any violation of legal requirement or any violation or the rights of any person; (b) the sole relief provided is monetary damages that are paid in full by the Notified Party; and (c) the Notifying Party will have no liability with respect to any compromise or settlement of any such third-party claims effected without its consent.
- 3. <u>Notifying Party Defense</u>. If the Notified Party does not assume the defense of, or after assuming such defense, the Notified Party fails to defend, any third-party claim, then (a) the Notifying Party may defend against such claim or action in such manner as it may deem appropriate (provided that the Notified Party may participate in such defense at its own expense); (b) the Notifying Party may settle such claim on such terms as it may deem appropriate, provided that the Notifying Party shall provide such notice to, and obtain such approval from, the applicable insurers providing any required Insurance, as is necessary to obtain coverage from such insurers for the settlement; and (3) the Notified Party shall promptly

reimburse the Notifying Party for the amount of all Fees and Costs reasonably and necessarily incurred by the Notifying Party in connection with the defense against and settlement of such claim. If no settlement of such third-party claim is made, the Notified Party shall satisfy any judgment rendered with respect to such claim before the Notifying Party is required to do so, and pay all Fees and Costs reasonably and necessarily incurred by the Notifying Party in connection with the defense against such claim.

- 4. <u>Cooperation</u>. With respect to any third-party claim subject to indemnification under Section IV.B.1 or IV.B.2, both the Mill and the City, as the case may be, will keep the other Party informed of the status of such third-party claim and any related proceedings at all stages thereof where such person is not represented by its own counsel, and the Parties agree (each at its own expense) to render to each other such assistance as they may reasonably require of each other and to cooperate with each other in order to ensure the proper and adequate defense of any third-party claim.
- **D. No Partnership.** The Parties agree that nothing contained in this Operations Agreement shall be considered as in any way constituting a partnership between the City and Mill.
- E. Independent Contractor. The Mill is, and shall be at all times during the term of this Operations Agreement, a separate business entity and an independent contractor and not an employee of the City. The Parties fully understand the nature of independent contractor status and intend to create an independent contractor relationship. The Mill, and not the City, shall have the right to control the manner and means by which the work or service is accomplished. The City may not, in fact, exercise control over the manner and means by which the work or service is accomplished; provided, however, that the City shall retain the right to ensure that the work or service is being performed according to agreed-upon requirements using the procedure outlined in Section III.G (Corrective Action Rights). Consistent with this relationship, the Mill shall not be covered by any City benefit programs, such as health and welfare benefit plans, social security, workers' compensation, or unemployment compensation and shall not be treated as an employee for federal or state tax purposes or any other purpose. The Mill shall be responsible for paying all taxes related to services performed under this Operations Agreement and, pursuant to the terms of the Water Supply Agreement, those costs will be included in the Mill Operating Costs in the Rate Model.
- F. Non-discrimination. The Mill and its employees, agents, and sub-contractors, if any, shall at all times comply with any and all federal, state, or local laws, ordinances, rules, or regulations with respect to non-discrimination and equal employment opportunity, which may at any time be applicable to the City by law, contract or otherwise, including but not limited to all such requirements which may apply in connection with employment or the provision of services to the public.
- **G.** Compliance with all Applicable Laws. The Mill shall at all times in connection with performance of this Operations Agreement, comply with any and all other applicable federal, state and local laws, rules, ordinances, and regulations and Governmental Approvals.
- **H.** Change in Law Regarding Water Rights. If any Governmental Authority imposes or proposes to impose a change in volume or quality of water available to the OGWS than
that currently allowed under the City's Water Rights, the Parties (a) reserve the right to contest and appeal the change in water rights and (b) will confer regarding the impacts of such changes on the OGWS and this Operations Agreement.

- I. Notices. All notices shall be delivered personally or may be delivered by any of the following methods to the address in the signature block of this Agreement or at the address that appears of record with the City or State for that Party: mailed by certified mail, return receipt requested; regular mail; courier service; or electronic mail. In the case of notice by mail, notice shall be deemed given on the date of postmark. In case of electronic mail, notice shall be deemed given when received.
- J. Assignment or Delegation. The Mill shall not assign any of its rights or interest in this Operations Agreement, nor delegate any of its duties hereunder to any other person, firm, or entity without the express written consent of the City first being obtained.
- **K. Modification.** No modification of this Operations Agreement shall be effective unless agreed to in writing and signed by the Parties.
- L. Complete Agreement. This Operations Agreement, together with the attachments and the Water Supply Agreement, reflects the entire agreement of the Parties relating to the subject matter thereof, supersedes all prior or contemporaneous oral or written agreements, or any understandings, statements, representations, or promises, and is intended fully to integrate the Parties' agreement with respect to the matters described in this Operations Agreement.
- M. Prevailing Wage. This paragraph applies to any Mill-performed OGWS maintenance or repair work, as those terms are defined by the Washington Department of Labor and Industries ("L&I"). Washington prevailing wage rules apply to any maintenance or repair work performed as part of this Operations Agreement. The Mill is responsible for ensuring that proper prevailing wage documentation is kept and that prevailing wages are paid for any maintenance or repair work. The Mill will indemnify and hold the City harmless for any violations of prevailing wage rules by the Mill for maintenance or repair work under this Operations Agreement. The City has the right to collect from the Mill any amounts owed for underpayment of prevailing wage in relation to maintenance or repair work performed under this Operations Agreement.

Pursuant to RCW 39.12.040, prior to payment by the City for maintenance or repair work under this Operations Agreement, the Mill must submit to the City a "Statement of Intent to Pay Prevailing Wages," on behalf of itself and each and every subcontractor, that has been filed with and approved by L&I. The Mill must then file online weekly certified payroll reports with L&I on a monthly or more frequent basis. At the end of each contract year, the Mill must file with L&I and submit to the City an "Affidavit of Wages Paid," on behalf of itself and each and every subcontractor. No payment (including final payment) may be made for maintenance or repair work under this Operations Agreement without an L&I-approved "Statement of Intent to Pay Prevailing Wages" form on file at the City.

**N. Public Works Bidding.** This City is solely responsible for compliance with any public bidding requirements, public records requirements and any legal requirements placed on the City arising from this Operations Agreement. The Mill agrees to provide reasonable assistance to the City in its compliance with these rules, and other public works and public entity requirements, by providing requested documents, assisting with bidding, and consulting with the City on any bidding requirements, provided that such assistance does

not require the Mill to forego any legal rights and protections that may be available to it, e.g., exemption of proprietary or trade secrets information from public disclosure. The Mill agrees that it will not sub-contract any OGWS work without consulting with the City as to whether public works bidding or other rules may apply to the project, to which such request for consultation the City shall promptly respond. Should the City, in its sole discretion, determine that a project is subject to City public works bidding requirements, the City will be responsible for preparing the bid package, managing the bid process, and overseeing the contract pursuant to public bidding requirements and for all associated fees and costs. The Mill will have the option to participate in the bidding process by reviewing plans, specifications, and bids.

The City has solely and independently determined that public works bidding under chapter 39.04 RCW and chapter 35.23 RCW, or any other Applicable Law, does not apply to this Operations Agreement or any of the services to be performed by the Mill hereunder as outlined in Attachment A. In the event a Governmental Authority determines that public works bidding is required for this Operations Agreement or any services to be performed by the Mill hereunder, (1) the City will be solely responsible for soliciting bids and awarding any contracts for public works, (2) the City will defend, indemnify, and hold harmless the Mill for any and all claims, injuries, damages, losses, or suits directly or indirectly resulting from the City's determination that public works bidding does not apply to this Operations Agreements or the services to be performed by the Mill hereunder as outlined in Attachment A, and (3) the City and Mill shall meet and confer to determine future operations of the OGWS.

- **O. Reporting.** In addition to the report in Section IV.A.2, the Mill shall provide an annual report documenting employee hours, and time associated with operations, a summary of maintenance or repair activities, a list of subcontractors hired, including the amount paid and the work performed, a list of special projects performed, a list of equipment purchased during the year, and any capital improvements completed. If requested, the Mill will also provide, within thirty (30) days, any documentation, including permits and inspection reports, supporting the annual report.
- P. **Public Records.** All records provided to and communications with the City shall be subject to the Public Records Act, Chapter 42.56 RCW, including exemptions thereunder. If the City receives a request for disclosure of any of the Mill's documents or information under the Public Records Act, Chapter 42.56 RCW, the City must provide the Mill with notice and an opportunity, pursuant to RCW 42.56.520 and .540, to seek an order prohibiting the City from releasing any of the Mill's documents and information, or other appropriate action within the Mill's sole discretion. The City will provide such notice to the Mill within five (5) business days after receiving the request for disclosure and will not release the requested documents or information until after following the steps in this section. If the Mill does not seek and obtain an order prohibiting the City from releasing any of the Mill's documents or information within fourteen (14) business days of the City providing the Mill with written notice of the request for disclosure of any of the Mill's documents or information, the City may release the requested documents or information. The City shall not release the requested documents or information during the pendency of any ruling(s), including appellate ruling(s), on the Mill's request for an order prohibiting the City from releasing any of the Mill's documents and information, or other appropriate action to protect the Mill's documents and information.

## V. REPRESENTATIONS AND WARRANTIES

- A. Mill Representations and Warranties. The Mill represents and warrants that:
  - 1. The Mill is a corporation duly organized, validly existing and in good standing under the laws of the state of Washington, with its principal office and place of business at 100 Mill Rd, Port Townsend, WA 98368 and with all requisite power and authority to enter into and perform its obligations under this Operations Agreement.
  - 2. This Operations Agreement has been duly authorized, executed and delivered by all necessary action of the Mill and constitutes a legal, valid and binding obligation of the Mill, subject to general equity principles, enforceable against the Mill in accordance with its terms, except as the same may be limited by bankruptcy, insolvency, reorganization or other similar laws affecting the rights of creditors generally.
  - 3. Neither the execution nor delivery by the Mill of this Operations Agreement, nor the performance by the Mill of its obligations under this Agreement: (a) conflicts with, violates or results in a breach of any Applicable Law applicable to the Mill; or (b) conflicts with, violates or results in the breach of any term or condition of any order, judgment or decree, or any contract, agreement or instrument, to which the Mill is a party or by which the Mill or any of its properties or assets are bound, or constitutes a default under any of the foregoing.
  - 4. No approval, authorization, order or consent of, or declaration, registration or filing with, any Governmental Authority is required for the valid execution and delivery by the Mill of this Operations Agreement or the performance by the Mill of its other obligations hereunder, except such approvals which have been disclosed or have been duly obtained or made.
  - 5. There is no action, lawsuit, claim, demand or proceeding pending before any court, arbitrator, private alternative dispute resolution system or Governmental Authority, or, to the best of the Mill's knowledge, threatened, the outcome of which, if determined in a manner adverse to the Mill, could reasonably be expected to have a material adverse effect on the execution and delivery of this Operations Agreement or any other agreement, the validity, legality or enforceability of this Operations Agreement, or any other agreement or instrument entered into by the Mill in connection with this Agreement, or which would adversely affect the ability of the Mill to perform its obligations hereunder or under any such other agreement or instrument.
- **B. City Representations and Warranties.** The City represents and warrants that:
  - 1. The City is a municipal corporation duly organized, validly existing and in good standing under the laws of the state of Washington, with its principal office and place of business at 250 Madison Street, Port Townsend, WA 98368 and with all requisite power and authority to enter into and perform its obligations under this Operations Agreement.

- 2. This Operations Agreement has been duly authorized, executed and delivered by all necessary action of the City, including the City Council, and constitutes a legal, valid and binding obligation of the City, subject to general equity principles, enforceable against the City in accordance with its terms.
- 3. Neither the execution nor delivery by the City of this Operations Agreement, nor the performance by the City of its obligations under this Agreement: (a) conflicts with, violates or results in a breach of any Applicable Law, including public works bidding requirements, applicable to the City; or (b) conflicts with, violates or results in the breach of any term or condition of any order, judgment or decree, or any contract, agreement or instrument, to which the City is a party or by which the City or any of its properties or assets are bound, or constitutes a default under any of the foregoing.
- 4. No approval, authorization, order or consent of, or declaration, registration or filing with, any Governmental Authority, including the City Council, is required for the valid execution and delivery by the City of this Operations Agreement or the performance by the City of its other obligations hereunder, except such approvals which have been disclosed or have been duly obtained or made.
- 5. There is no action, lawsuit, claim, demand or proceeding pending before any court, arbitrator, private alternative dispute resolution system or Governmental Authority, or, to the best of the City's knowledge, threatened, the outcome of which, if determined in a manner adverse to the City, could reasonably be expected to have a material adverse effect on the execution and delivery of this Operations Agreement or any other agreement or instrument entered into by the City in connection with this Operations Agreement, the validity, legality or enforceability of this Operations Agreement, or any other agreement or instrument entered into by the City in connection with this Agreement, or which would adversely affect the ability of the City to perform its obligations hereunder or under any such other agreement or instrument.

IN WITNESS WHEREOF, the City and Mill have executed this Agreement.

CITY OF PORT TOWNSEND

John M. Mauro, City Manager

Mailing Address: 250 Madison Street, Ste 2 Port Townsend, WA 98368

12.20.2 Date:

PORT TOWNSEND PAPER CORPORATION

Amy Orr, Chief Executive Officer

Mailing Address: 100 Mill Road Port Townsend, WA 98368

ecember Date:

**Operations** Agreement

Approved as to form:

Hototi on www.

Heidi Greenwood, City Attorney

Page 14 of 18

# ATTACHMENT 1

## **SCOPE OF SERVICES**

The Mill will operate the Olympic Gravity Water System ("OGWS"), including payment of all utilities and taxes, purchase of supplies, equipment, and other items necessary to keep the system operating. All costs associated with these services will be considered Mill Operating Costs as outlined in the Water Supply Agreement. This includes the daily operations of the system as described as follows:

- Operating the OGWS consistent with the operations manual, which is incorporated by reference. The operations manual is a living document and is updated as best practices or system modifications are implemented;
- Completing any repairs that constitute ordinary maintenance costing less than \$10,000 per occurrence, but only after consultation with the City on any public bidding requirements for such work;
- Providing for security of the reservoirs, pipeline easement/alignment, and diversions;
- Ordinary maintenance on the caretaker homes, appurtenances, and grounds;
- Ordinary maintenance on the OGWS system components such as meters, valves, valve boxes, and diversion screens;
- Ordinary maintenance of drainage culverts crossing the pipeline;
- Removal of debris from reservoirs;
- Coordination with landowners and the County concerning protection of the pipeline;
- Vegetation control along the pipeline corridor, around the reservoirs, fence lines and the caretaker grounds;
- Operations and ordinary maintenance of the cathodic protection system;
- Sampling and measurements for required monitoring, including but not limited to flow measurement in the rivers and diversions, dam monitoring wells and seepage, reservoir levels, and other data as required to operate the system;
- Ordinary maintenance of data and accounting associated with operations;
- Activities to comply with environmental regulations and permits as determined by permitting agencies;
- Valve exercising and ordinary maintenance;
- System flushing as necessary;
- Performing utility locate services for the transmission line; and
- Occupation and ordinary maintenance of grounds and caretaker quarters at City Lake and the Big Quilcene Diversion.
- The Mill may complete any Emergency Repairs costing up to \$100,000 if required to maintain water availability, but only after formal declaration by the City of an Emergency pursuant to chapter 39.04 RCW. The Mill will coordinate with the City prior to initiating such repairs, if practicable, or as soon as possible after.

The City will provide the following OGWS operations functions:

- Right of way encroachment enforcement;
- United States Forest Service permitting, including providing copies of permits to the Mill and ensuring permits are up-to-date and in compliance with Environmental Laws;
- Accounting and legal services for the OGWS system as a whole;
- Asset insurance;
- Regulation compliance monitoring;
- Grant applications;
- Management and implementation of the capital program (projects costing more than \$10,000);
- Watershed monitoring such as the SNOTEL site; and
- Environmental compliance.

## ATTACHMENT 2

## **INSURANCE REQUIREMENTS**

The Mill shall procure and maintain for the duration of the Operations Agreement insurance against claims for injuries to persons or damage to property that may arise from or in connection with the performance of the work hereunder by the Mill, its agents, representatives, or employees.

#### No Limitation

The Mill's maintenance of insurance as required by the Operations Agreement shall not be construed to limit the liability of the Mill to the coverage provided by such insurance or otherwise limit the City's recourse to any remedy available at law or in equity.

#### A. Minimum Scope of Insurance

Mill shall obtain insurance of the types described below:

- 1. <u>Automobile Liability</u> insurance covering all owned, non-owned, hired, and leased vehicles. Coverage shall be at least as broad as Insurance Services Office (ISO) form CA 00 01. If necessary, the policy shall be endorsed to provide contractual liability coverage.
- 2. <u>Commercial General Liability</u> insurance shall be at least as broad as ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, stop-gap independent, and personal injury and advertising injury. The City shall be named as an insured under the Mill's Commercial General Liability insurance policy with respect to the work performed for the City using an additional insured endorsement at least as broad as ISO CG 20 26.
- 3. <u>Workers' Compensation</u> coverage as required by the Industrial Insurance laws of the State of Washington.
- 4. <u>Professional Liability</u> insurance as and if appropriate for the services performed.

#### **B.** Minimum Amounts of Insurance

The Mill shall maintain the following insurance limits:

- 1. <u>Automobile Liability</u> insurance with a minimum combined single limit for bodily injury and property damage of \$1,000,000 per accident.
- 2. <u>Commercial General Liability</u> insurance shall be written with limits no less than \$5,000,000 each occurrence, \$10,000,000 general aggregate.

#### C. Other Insurance Provision

The Mill's Automobile Liability and Commercial General Liability insurance policies are to contain, or be endorsed to contain, that they shall be primary insurance with respect to the City for purposes of the Operations Agreement, but only for the Mill's sole negligence; the Mill will not assume liability for the City's sole negligence. Any insurance, self-insurance, or insurance pool coverage maintained by the City shall be in excess of the Mill's insurance and shall not contribute with it except with respect to joint, concurring, comparative or contributory fault or negligence between the Mill and the City.

## D. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.

## E. Verification of Coverage

The Mill shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Mill before commencement of the work.

## F. Notice of Cancellation

The Mill shall provide the City with written notice of any policy cancellation, within two (2) business days of the Mill's receipt of such notice.

## G. Failure to Maintain Insurance

Failure on the part of the Mill to maintain the insurance as required shall constitute a material breach of contract, upon which the City may, after giving five (5) business days' notice to the Mill to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the City on demand or, at the sole discretion of the City, offset against funds due the Mill from the City.

## H. City Full Availability of Mill Limits

If the Mill maintains higher insurance limits than the minimums shown above, the City shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Mill, irrespective of whether such limits maintained by the Mill are greater than those required by this contract or whether any certificate of insurance furnished to the City evidences limits of liability lower than those maintained by the Mill.

# $EXHIBIT \ E-City \ Debt \ Disclosure$

Description Purpose Debt Date of Issuance Debt Issuance Remaining Principle Mature   2002 PWTE Loan (PW-02-691-044) Morgan Hill Booster Station PWTE 2002 \$ 1,242,733 \$ 59,595 5	
Debt Debt Date of Debt Issuance Remaining Mature   Description Purpose Source Issuance Principle Principle   2002 PWTE Loan (PW-02-691-044) Morgan Hill Booster Station PWTE 2002 \$ 1,242,733 \$ 59,595	
Debt Debt Date of Debt Issuance Remaining Mate   Description Purpose Source Issuance Principle Date   2002 PWTE Loan (PW-02-691-044) Morgan Hill Booster Station PWTE 2002 \$ 1,242,733 \$ 59,595	
Debt Debt Date of Debt Issuance Remaining Mate   Description Purpose Source Issuance Principle Date   2002 PWTE Loan (PW-02-691-044) Morgan Hill Booster Station PWTE 2002 \$ 1,242,733 \$ 59,595	
Debt Date of Debt Issuance Remaining Mate   Description Purpose Source Issuance Principle Date   2002 PWTE Loan (PW-02-691-044) Morgan Hill Booster Station PWTE 2002 S 1 242 733 S 59 595	
Description Purpose Source Issuance Principle Principle Da   2002 PWTE Loan (PW-02-691-044) Morgan Hill Booster Station PWTE 2002 \$ 1,242,733 \$ 59,595 5	turity
2002 PW/TE Loan (PW-02-691-044) Morgan Hill Booster Station PW/TE 2002 \$ 1,242,733 \$ 59,595	Jate
2002 PW/TE Loan (PW-02-691-044) Morgan Hill Booster Station PW/TE 2002 S 1 242 733 S 59 595	
	2022
2002 SRF Loan (LO200012)     Sewer System Improvements     CWSRF     2002     \$ 148,011	2024
2012 UV Treatment PWTF Loan (PC12-951-075) Water Filter Plant PWTF 2012 \$ 1,896,000 \$ 1,119,214	2031
2013 UV Disinfection PWTF Loan (PC13-961-018)     Water Filter Plant     PWTF     2013     \$ 5,000,000     \$ 2,711,104	2032
2012 UV DWSRF Loan (DM12-952-092) Water Filter Plant DWSRF 2012 \$ 3,041,910 \$ 2,303,641	2036
2013 5 MG Reservoir PWTF Loan (PC13-961-037)     5 MG Reservoir Construction     PWTF     2013     \$ 2,104,000     \$ 825,682	2032
2012 City Lake Repair (PC12-951-060)     City Lake Repair     PWTF     2012     \$ 1,000,000     \$ 526,316	2031
2015 5 MG Reservoir DWSRF (DM15-952-034) DWSRF 2015 \$ 4,596,320 \$ 2,829,824	2037
Revenue	
Utility Loan     WTPlant & Other projects     Bonds     2020     \$ 1,914,980     \$ 1,834,800	2040
2017 Wastewater Outfall Loan (WQC-2017-portoc-00182) Sewer System outfall CWSRF 2017 \$ 204,000	
2021 Wastewater Outfall Loan (WQC-2021-portoc-00169) Sewer System outfall CWSRF 2021 \$ 3,180,000 \$ 3,180,000	2054
Total \$ 24,179,943 \$ 15,538,187	
OGWS Debt: The following debt from above is associated with the OGWS	
2012 City Lake Repair (PC12-951-060)Debt Service Approx = \$54,000	
2002 PTWF Loan Big Quilcen Diversion Rehab. Debt Service Approx = \$40,000	
Notes:	
DWSRF = State Drinking Water State Revolving Fund	
CMCRE - State Clear Water Backing Fund	
WITE - State Dublic Works Truct Fund	