



Port Hadlock Wastewater System

Project Newsletter – March 2021

What's the Latest with the Port Hadlock Wastewater (Sewer) Project?

There has been a lot of activity recently on the Port Hadlock Sewer Project. The current work focuses on trying to bring sewer to the "Phase I" area which is a core area along Ness' Corner Road, Chimacum Road, the waterfront, and the Old Alcohol Plant. A map of this preliminary area is included in the following pages, but it is important to note that a final boundary has not been drawn and will require further discussions with the property owners. The input of property owners in the Phase I area is important for the County to hear. All of this work is being performed so that the County has better information, especially related to costs, to share with the Port Hadlock community as the discussions about how to start up a new sewer continue.

Recent Milestones...

- ***New Facility Plan*** - Completed an update to the original 2008 Sewer Facility Plan and incorporated it into the County's Comprehensive Plan and received approval from the Department of Ecology. This is an important step as the project advances into design and continues to seek State and Federal funding.
- ***New Funding*** - Acquired a \$1.4 million appropriation from the Washington State Legislature to complete design of the wastewater system for the Phase I area. This includes final design of the wastewater treatment facilities, the wastewater infiltration site, and the collection system pipes that go in the roadway.
- ***Final Design Work*** – Sewer design consulting engineers have been performing detailed design work and will be refining final cost estimates. This information will be used in discussions with the property owners as we work with the community to determine how much each property owner would be required to pay for sewer service. We are scheduled to complete the design work this year and obtain Department of Ecology approvals.



- ***Surveying and Mapping*** - Land surveyors completed a survey of the entire proposed Phase I sewer service area last summer to create a base map for design that identifies the road right of way limits, topography, existing utilities, and other physical features in the right of way. This is a necessary step for layout and design of the sewer system.
- ***Bidding for Sewer Equipment*** - Advertised and opened bids for modular Membrane Bioreactor (MBR) equipment in February. Modular equipment is essentially the core of the treatment facility and provides a cost-effective way to start a sewer system and allow for future expansion. While the County has not secured the funding to purchase this equipment yet, it is important to identify the appropriate manufacturer so that we can work with them to complete the design and lock in their pricing.

- **Sewer Pipe Layout** - Entered into consultation with the Washington State Department of Transportation (WSDOT) for sewer line layout in State highways which include Ness' Corner Road and Oak Bay Road (State Route SR-116). There are strict requirements associated with installing utilities in State rights-of-way. In addition, there are a lot of existing utilities to work around including water lines and fiber optic communication cables.



- **Sewer Funding** – County staff and Commissioners continued to work with grant agencies and State and Federal legislators to acquire additional project funding commitments. Agencies including the U.S. Economic Development Administration, Department of Ecology, U.S. Department of Agriculture, and others have programs that can help pay for some of the project costs in order to make it more affordable for property owners. There is a lot of interest in this project from these funding sources, but combining enough of them all at the same time is a challenge. Completion of the sewer design will go a long way towards showing these funding agencies that we are ready to go.
- **Public Outreach** - Met with a number of property owners in the proposed Phase I sewer service area either individually or at Sewer Working Group meetings that were being held prior to the COVID-19 outbreak. We've heard a lot of interest in getting the sewer built, but also concerns about how much it will cost each property owner. An update on the sewer project will be provided by the Board of County Commissioners on April 15th starting at 5 p.m. Information on how to attend this meeting is available on our [website](#), where you can also sign up to receive email notifications. County staff is always available to discuss the project with individual property owners within the proposed sewer service area to hear your concerns and answer your questions. Send us an email at porthadlocksewer@co.jefferson.wa.us or give us a call at 360-385-9160.

New Project Manager for Port Hadlock Wastewater System

Jefferson County has hired Bob Wheeler as a part-time Project Manager for the Port Hadlock wastewater system. Previously, Bob worked on the project as a consultant with Triangle Associates with a focus on public involvement. Bob is a licensed engineer, was the Port Townsend Public Works Director for 10 years in the 1990s, and has managed the planning, design, and construction of wastewater treatment systems for both Port Townsend and Boulder, Colorado. Bob is working closely with Monte Reinders, Jefferson County Public Works Director, on all specific components of developing this project. Bob looks forward to helping make this project a reality and working with property owners.

Project Information Contact:

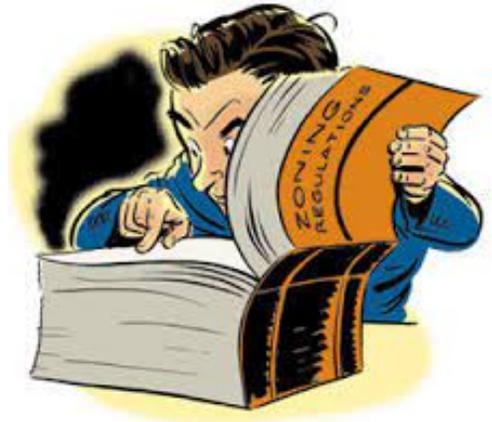
Bob Wheeler, Jefferson County

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Need and Community Desire for Municipal Wastewater Facilities for Port Hadlock Area

In the 1990s, the Washington State Growth Management Act (GMA) required Jefferson County to develop a Comprehensive Plan for managing its growth. This plan identified areas where urban growth should occur and economic activity, higher population density, and infrastructure improvements should be prioritized. In 2002, Jefferson County designated the Port Hadlock/Irondale area as an Urban Growth Area (UGA) because it was already “characterized by urban growth” (RCW 36.70A.110(1)). Under GMA, urban services, including municipal sewers rather than septic systems, are required to allow development typically associated with urban areas.



The Port Hadlock area does not currently have a sewer system or wastewater treatment facilities. Local homes, businesses and other facilities depend on individual septic tank systems that limit business and affordable housing development, and are known to degrade Puget Sound water quality as they age. To accommodate urban level activities of the UGA, future urban zoning has already been approved, but that zoning can only be “turned on” with a wastewater system in place under GMA.

Property owners in an identified initial service area have requested the County pursue development of a municipal wastewater system. As part of this request, they asked the County to look for cost savings relative to the system originally specified in the 2008 Sewer Facility Plan. In response to the request, the County conducted studies and identified design changes to lower the overall cost of wastewater facilities for a smaller initial service area.



In 2020-2021, the County developed an updated Sewer Facility Plan, a Washington State Department of Ecology (Ecology)-required planning document for a new wastewater system. This 2021 update focuses on technical and cost changes since the original 2008 Plan. The County recently received approval of this updated Plan from the Department of Ecology.

Overview of Proposed Wastewater System

While the 2021 Port Hadlock UGA Sewer Facility Plan Update discusses how wastewater facilities could ultimately be made available for the entire Port Hadlock UGA, it is anticipated that Phase 1 wastewater facilities would initially serve only a “Core Area” along Ness’ Corner Road and Chimacum Road, the Port Hadlock waterfront, and the Old Alcohol Plant (Figure 1 – next page). Expansion into areas outside of the Phase I service area would likely be a slow process that would happen only if property owners later became interested in bringing sewer into their neighborhoods. **It is important to know that property owners in the UGA, but outside of the initial Phase I sewer area, will not have to pay for sewer unless they later want it to expand into their neighborhood.**

Within the projected Phase 1 Area, wastewater from individual properties would be pumped through a series of pressurized sewer pipes to a Membrane Bioreactor (MBR) treatment plant, which would treat

wastewater to a very high standard (“Class A”). Treated water from the plant would flow to a reuse basin where it would infiltrate into groundwater and ultimately replenish water flows in Chimacum Creek. Reuse of Class A wastewater from treatment systems is supported and encouraged by the Department of Ecology. Sludge and solids from the treatment process would be removed by truck at the plant and hauled to a larger wastewater treatment plant in our region.



Class A reclaimed wastewater (on the right)

The 2021 Facility Plan differs from the 2008 Plan in that it incorporates a modular type MBR treatment system (versus a constructed type treatment system) and a pressure sewer collection system (versus the original gravity sewer system). These changes reduce the up-front construction costs while providing a wastewater system that will allow for expansion if more areas of Port Hadlock desire a municipal wastewater system. Both modular MBR treatment systems and pressure sewers have wide, proven use. Examples in our region of these kinds of modular MBR and pressure sewer systems exist. In fact, Port Gamble recently replaced an aging treatment system with one of these new modular MBR plants, and the Jamestown S’Klallam Tribe installed a pressure sewer system from a new hotel at Sequim Bay leading to the Sequim sewer system. These types of treatment and conveyances are often used in smaller sized wastewater systems such as is envisioned in Port Hadlock.

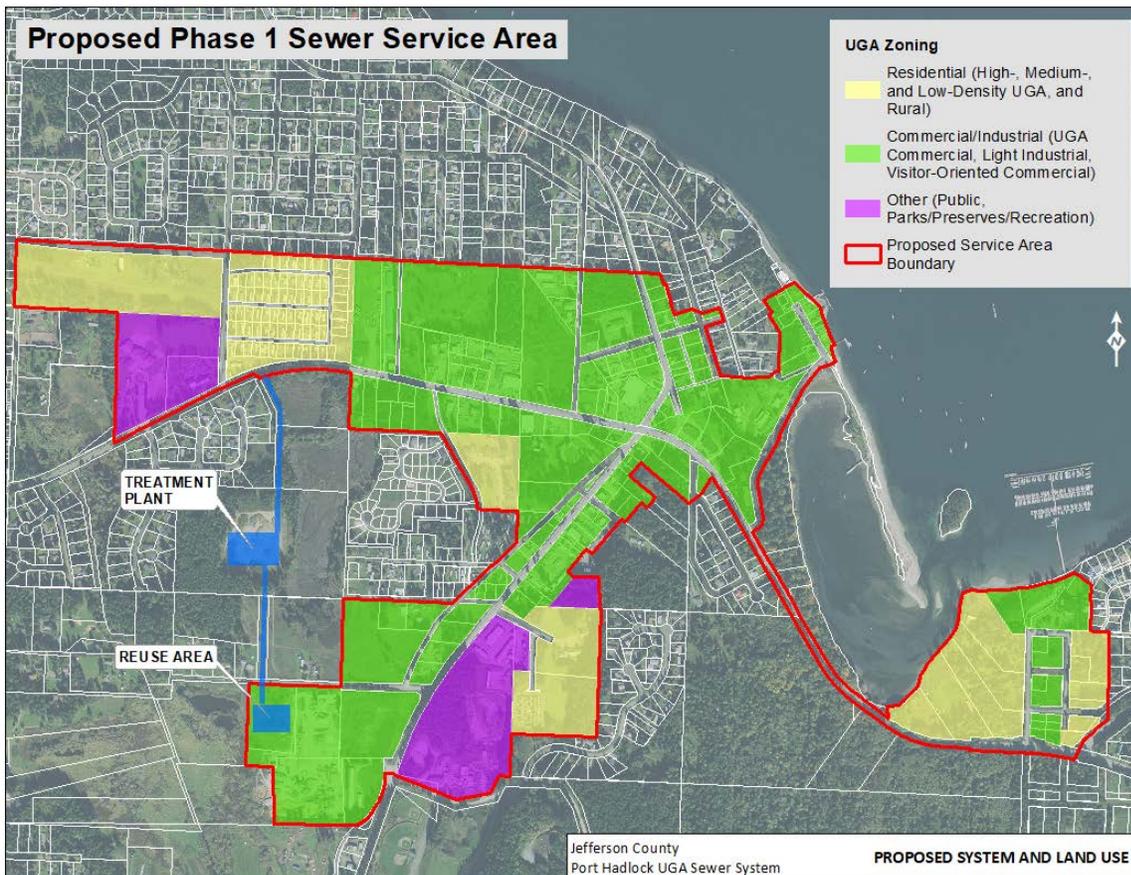


Figure 1: Map of the preliminary Phase 1 Project Service area, including Core Area, Port Hadlock Waterfront, and Old Alcohol Plant. The final boundary will include further input from property owners.

Status of Major Wastewater Facility Components

There are three wastewater system components – 1) **Treatment**, 2) **Wastewater Re-Use/Disposal**, and 3) **Collection** – that are currently under design.

Wastewater Treatment System:

Design for the treatment system includes two major elements:

1. Solicitation for the modular Membrane Bioreactor (MBR) treatment system where preconstructed treatment units can be brought in on a truck (Figure 2), and
2. Design of the wastewater treatment facilities that connect to this modular MBR for complete wastewater treatment to Class A standards.

At this point, our team has completed modular MBR specifications and advertised for and received seven (7) bids for providing the modular MBR equipment. These bids are being evaluated to determine the lowest, responsive bid. This important step requires time to properly evaluate the bids so that the supplier who is chosen will provide equipment that meets the requirements. We want to make sure we get a system that is cost-effective in the long term and that allows for the future expansion we need while also allowing us to start small. Each company approaches the specifications a bit differently. Selection does not commit the County to purchase the actual modular MBR components until funding sources are in place and the property owners in the Phase I service area have agreed to connect to the wastewater system. By selecting a modular MBR supplier at this time, however, the County will obtain specific information from the chosen supplier on the capital costs of a key component of the overall treatment system and a better estimate of operation and maintenance costs for this portion of the treatment system. With this information, the County can provide property owners in the Phase I proposed service area with refined cost estimates for connecting to the wastewater system and for ongoing operation and maintenance of that system.



Figure 2: A modular Membrane Bioreactor (MBR) treatment system.

Wastewater Re-Use/Disposal:

After solids and sludge are removed at the plant by membranes and trucked off site, treated wastewater that meets very high water-quality standards (Class A) will flow to an infiltration basin and allow the water to rapidly seep into the ground. This water will supplement Chimacum Creek instream flows and benefit local salmon runs, including its resident Endangered Species Act (ESA)-listed Hood Canal summer chum salmon (Figure 3). The amount of daily wastewater coming from the initial service area is relatively low and is estimated to be well below 100,000 gallons per day which is equivalent to a medium sized swimming pool. This type of use of Class A wastewater re-use is encouraged by the Washington State Department of Ecology. More information about Class A reclaimed water can be found on the Department of Ecology website [here](#).



Figure 3: Hood Canal chum salmon spawn in Chimacum Creek.

Pressurized Collection System:

The original 2008 Sewer Facility Plan recommended a gravity sewer collection system, which requires pipes to be constructed so wastewater flows downhill while avoiding existing utility lines (like power, fiber optic, and water lines). While gravity systems have certain advantages, especially for large sewer systems, they typically require deep trenches and centralized pump stations resulting in high construction costs which are difficult to absorb when starting a small sewer with a limited number of initial users.



Figure 4: Grinder pump being installed.

In 2020, the County started design for a pressurized collection system for the initial service area which uses small grinder pumps at each property rather than gravity to move sewage to the treatment plant (Figure 4). A pressurized collection system has a lower construction cost because pipes are smaller than a gravity system and there is more flexibility in how pipes can be constructed in the ground.

A pressure system includes individual tanks and grinder pumps (on-site elements) at each property that pump into a larger sewer pipe that includes sewage from other properties. These main collection system pipes will move sewage to the treatment plant under pressure from the individual pumps (Figure 5).

Pressurized sewer systems are widely used throughout the country for a variety of applications and have proven to be an effective way to address sewer needs for smaller systems or where topography, bedrock, or high groundwater make installation of gravity sewers expensive and challenging. Grinder pumps do not take up much room and leave property formerly dedicated to septic tanks, drainfields, and reserve drainfields available for other uses. The grinder pump tank will provide limited storage capability in case of electric outages. Portable generators can be used to enable pumping in the case of a long-term electric outage.

To maintain a pressurized collection system, operators must have access to the individual properties where the tank and individual pumps are housed. As the project gets closer to construction, easements between the County, the operator of the system, and the individual property owners will be negotiated to allow for this ongoing access.

The County is currently working with its design team and the Washington Department of Transportation (WSDOT) to determine alignments of the collection system pipes in the State highways (SR-116) and meet all of the WSDOT requirements. There are also other utilities already occupying the highway right of way that must be avoided. Fortunately, the pressure collection system allows for a lot more flexibility in the routing of the pipes and does not require excavations nearly as deep as a gravity system so this should help with these challenges.

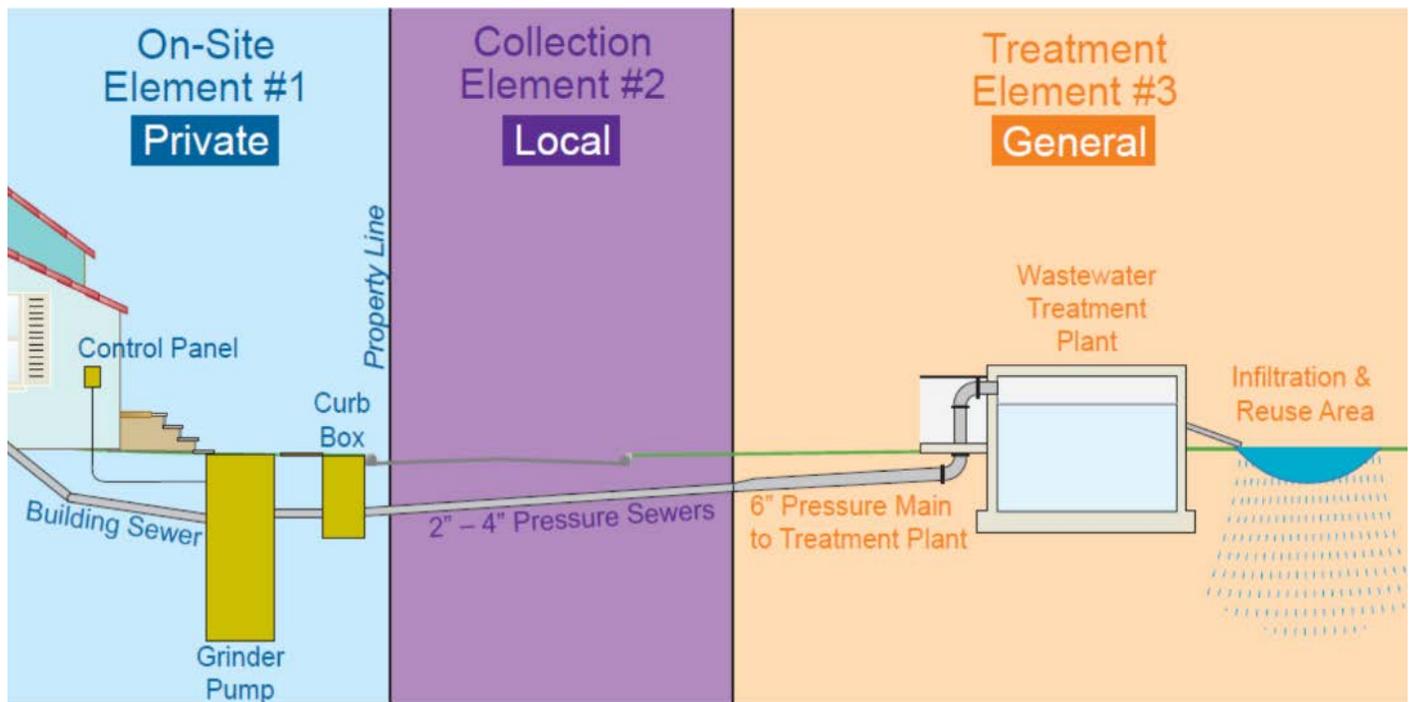


Figure 5: The proposed wastewater system includes three elements: The on-site element at each property, the collection system in the public right of way, and the Membrane Bioreactor (MBR) treatment plant.

Benefits of Centralized Wastewater Facilities	
Economic Development and Job Growth	Wastewater facilities will result in commercial and light industrial up-zoning changes in the Port Hadlock area which will allow options for businesses to grow and expand, create more job opportunities, and improve economic opportunities across the County.
Multi-family/Low-income Housing	Wastewater facilities and resulting zoning changes will enable multi-family housing development, including affordable/low-income housing, that is currently limited by septic systems under the Growth Management Act
Property Owner Flexibility	Wastewater facilities will enable new uses or development of land, previously required to be set aside for reserve septic leach fields.
Environmental and Community Health	Replacing septic systems with wastewater facilities has the potential to improve the local ecology and enhance community health by reducing water contamination due to failing septic systems.
Puget Sound Water Quality	Improving wastewater infrastructure to address water quality problems has been identified as a priority in the Hood Canal Action Areas by Puget Sound Partnership.
Harvestable Shellfish Beds	Replacing septic systems will help protect harvestable shellfish beds that are negatively impacted by failing septic systems in the Hood Canal watershed.
Enhance Chimacum Creek for Salmon	Jefferson County Public Health, has said <i>“a high density of septic systems is a problem in the watershed and a solution could be centralized wastewater services. Additionally, reclaimed water from the Port Hadlock Wastewater Facilities will recharge Chimacum Creek during periods of low water flow to support habitat and salmon.”</i> Ecology encourages such reuse of Class A quality effluent from wastewater treatment systems such as being designed for Port Hadlock.

Expected Costs for Wastewater Facilities to Serve the Projected Phase 1 Area

The County needs to obtain full funding for a wastewater system before construction can begin. Funding will need to come from both grants and low-interest loans with the remaining funding from local Phase I property owners who connect to the wastewater system. Below is current cost estimate to provide a sewer system to serve the Phase I service area (Core Area, Port Hadlock waterfront, and the Old Alcohol Plant).

Wastewater System Component	Cost
Preliminary/Admin/Startup	\$721,000
Pressurized Sewer System	\$7,071,000
Membrane Bioreactor Treatment System and Recharge	\$11,538,000
Total	\$19,330,000
On-site Grinder Pump and Side Sewer	\$4,287,000
Estimated Initial System Cost	\$23,617,000
Minus State Appropriation for Engineering Final Design (Received)	- \$1,422,000
Remaining Funding Needed for Project	\$22,195,000

A Word About Costs...

The most frequent question we hear is “**How much will the Sewer cost me?**”. We know that this is the most important question about this whole project and the one that we are working diligently to answer. The answer depends on how much State and Federal grant support we can get for the project and on how the remaining costs will be proportioned out among the property owners. Generally speaking, all single-family residences would pay the same to connect while commercial properties would vary, with those using the most water paying more to connect.



The sewer needs to be affordable for the property owners so that they can fully benefit from the advantages that a sewer system will offer. The recently updated Sewer Facility Plan discusses this issue in detail in Chapter 9, available [here](#).

Clearly, without any State or Federal assistance, this project would be very expensive for property owners, and as a result the project would not advance. It is a certainty, however, that the project **WILL** receive outside support in the form of grants, appropriations, and low-interest loans. The question is just how much. If a significant portion of the project costs are covered by State and Federal sources, the sewer would have hook up charges comparable to other existing sewers in our region.



County staff and elected officials continue to work with our State and Federal legislators on this issue as well as with grant/loan agencies such as the Department of Ecology, U.S. Department of Agriculture Rural Development, and U.S. Economic Development Administration. A recent success story was the State capital budget appropriation of \$1.4 million to complete final design. With the final design completed later this year, our search for construction funding will be that much more compelling as the project reaches “shovel ready” status. The Port Hadlock Sewer project is well known to our legislators and these funding agencies given its lengthy history, and there are positive signs of growing interest to fund this project, but combining enough funding sources all at the same time is a challenge. Stay tuned for more on this subject in the coming months, but know that County staff, elected officials, and legislators are working hard to find the funding for this project to make it affordable for property owners.

Costs for operating and maintaining (O&M) the wastewater system, costs that would be borne by the property owners after the system is in operation, are still being refined. As design efforts proceed these costs will become more detailed and available for property owners who are within the Phase I area. This information will be important as property owners consider all the costs of sewer and how they might want to move forward.

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To sign up to receive emails about Port Hadlock Sewer news, visit the Jefferson County website <https://www.co.jefferson.wa.us/> and select "Stay Informed" on the homepage, or click [here](#) to go directly to the “Notify Me” page. Enter your email address, click “Sign In”, then select "Jefferson county Port Hadlock Sewer," and click the Ok button in the “Just one more step” pop-up box. You’ll be sent an email to confirm you want to be added to the list.