Potential Wastewater Service Area Expansion: Kaltasin & Whiffin Spit

Q + A Information Package

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Background

The community of Sooke was incorporated as the District of Sooke in December 1999.

Construction of the Sooke collection system and wastewater treatment plant began in 2004 and the system was commissioned in November 2005. Individual domestic and commercial hook-ups began in January 2006 and continued throughout 2006 and 2007, with the majority completed by December 2006.

The system uses secondary sewage treatment which typically removes over 95% of the total suspended solids and high levels of other contaminants, providing significant environmental benefits to the District of Sooke.

The District of Sooke (the District) is undertaking a process to potentially establish a new sewer service for the Whiffin Spit and Kaltasin Areas. Improving this area's underground services has been identified by the District's Liquid Waste Management Plan since 2010 to help protect our community's natural environment and assist property owners with a sustainable wastewater management solution.

> "Kaltasin and Whiffin Spit North were the two highest rated candidates for the next expansion of the Sewer Specified Area. The Kaltasin catchment was the most likely candidate for inclusion in the Sewer Specified Area (SSA)."
>
> Source: Liquid Waste Management Plan, p. 5

Earlier this year, the District began a process to review opportunities for extending Sooke's sewer system to areas of Whiffin Spit and Kaltasin currently operating on septic systems. This process is being pursued on the behalf of Sooke residents for the following reasons:

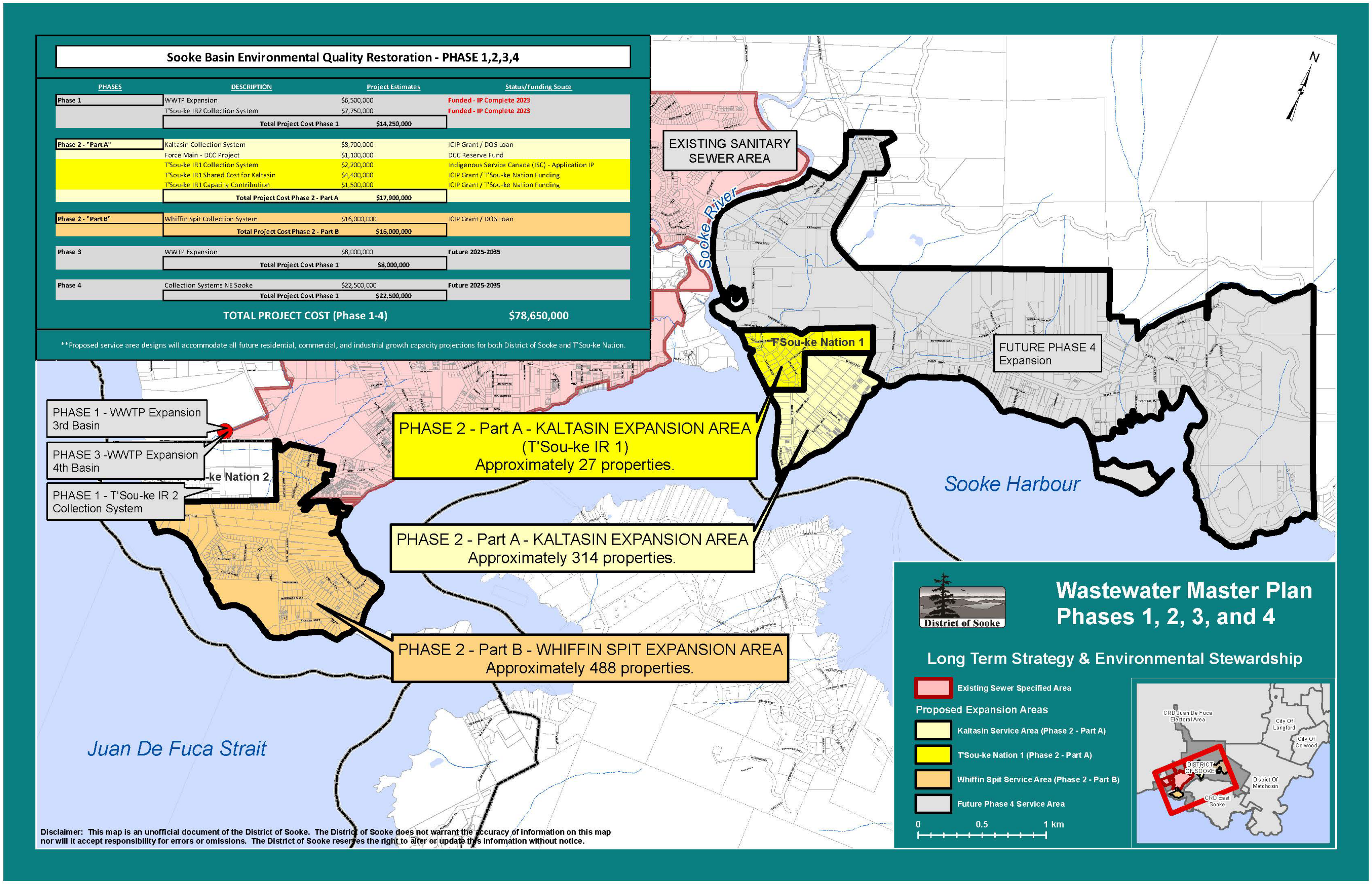
- To reduce potential environmental impacts of failing septic systems on the Sooke Basin and Sooke River.
  - The wastewater treatment system removes over 95% of the total suspended solids and high levels of other contaminants.
  - The treated effluent is discharged via a 1.7km long, 30 m deep marine outfall to the Juan de Fuca Strait.
- To support continued efforts to improve the environmental quality of the harbour, recognizing this significance to both the T'Sou-ke First Nation, whose heritage is derived from a land of natural abundance, and District residents.
- To provide area property owners with a sustainable wastewater management system.

The project team is in the process of pursuing grant funding in coordination with the T'Sou-ke First Nation from senior governments to support the proposed sewer expansion for the Whiffin Spit and Kaltasin areas. The proposed grant application has the potential to cover between 60% - 73% of the total project costs up to a project cost of $16 million. Consideration for subsequent phases for wastewater service expansion are included in Figure 1.

The intent of public engagement at this phase of the project was to:

- Inform residents of the potential wastewater expansion in their area;
- Obtain preliminary data in conjunction with an upcoming funding opportunity and;
- Receive resident questions to ensure the project team can provide fulsome responses, in particular given the extensive technical consideration of such a project.

The data collected during the December 10, 2021 to January 10, 2022 engagement period is captured in this report.



Sooke Basin Environmental Quality Restoration - PHASE 1,2,3,4

PHASES	DESCRIPTION	Project Estimates	Status/Funding Souce
Phase 1	WWTP Expansion	$6,500,000	Funded - IP Complete 2023
	T'Sou-ke IR2 Collection System	$7,750,000	Funded - IP Complete 2023
	Total Project Cost Phase 1	**$14,250,000**	
Phase 2 - "Part A"	Kaltasin Collection System	$8,700,000	ICIP Grant / DOS Loan
	Force Main - DCC Project	$1,100,000	DCC Reserve Fund
	T'Sou-ke IR1 Collection System	$2,200,000	Indigenous Service Canada (ISC) - Application IP
	T'Sou-ke IR1 Shared Cost for Kaltasin	$4,400,000	ICIP Grant / T'Sou-ke Nation Funding
	T'Sou-ke IR1 Capacity Contribution	$1,500,000	ICIP Grant / T'Sou-ke Nation Funding
	Total Project Cost Phase 2 - Part A	**$17,900,000**	
Phase 2 - "Part B"	Whiffin Spit Collection System	$16,000,000	ICIP Grant / DOS Loan
	Total Project Cost Phase 2 - Part B	**$16,000,000**	
Phase 3	WWTP Expansion	$8,000,000	Future 2025-2035
	Total Project Cost Phase 1	**$8,000,000**	
Phase 4	Collection Systems NE Sooke	$22,500,000	Future 2025-2035
	Total Project Cost Phase 1	**$22,500,000**	
	TOTAL PROJECT COST (Phase 1-4)	**$78,650,000**	

**Proposed service area designs will accommodate all future residential, commercial, and industrial growth capacity projections for both District of Sooke and T'Sou-ke Nation.

Figure 1: Map – Wastewater Master Plan Phases 1, 2, 3, and 4

Note: Higher resolution version of this map available at letstalk.sooke.ca/wwplanning

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Process

What are the next steps in this project?

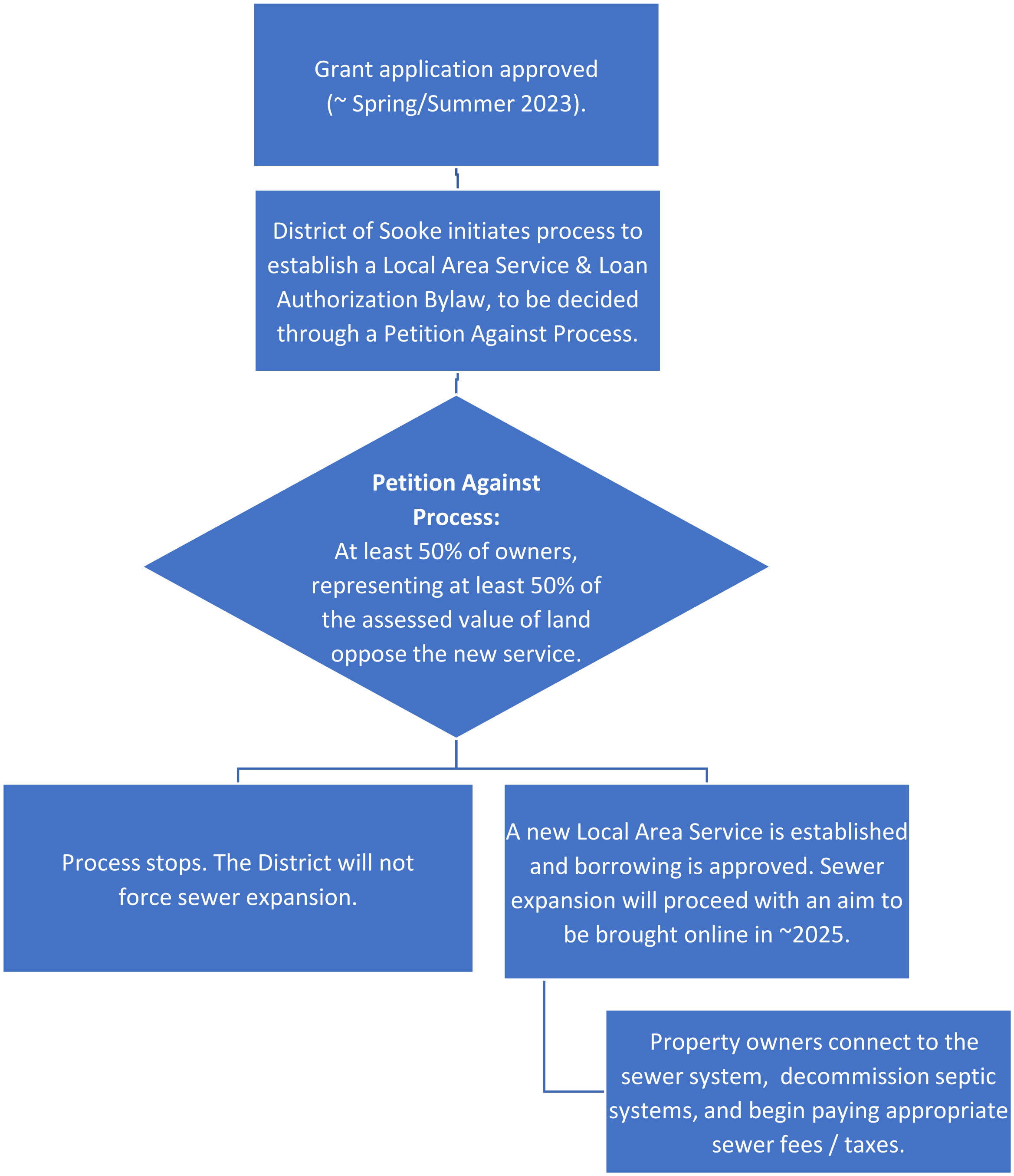
District staff are actively seeking grant opportunities to offset the costs for potential sewer expansion into Whiffin Spit and/or the Kaltasin area. Earlier this year, the district submitted an application for funding and continues to seek other grant opportunities. A response to the grant which initiated the December 2021/January 2022 engagement with property owners is expected early in 2023.

The ability to secure grant funding has significant financial impacts on the cost of expansion to property owners and is expected to affect final decisions on expanding sewer services to Whiffin Spit and/or Kaltasin.

If the District of Sooke is successful with its grant application, the District will proceed with establishing a Local Area Service including a Loan Authorization Bylaw through a Petition Against process. This process provides an opportunity for those not in support of the expanded sewer service to express their opposition. If at least 50 percent of owners representing at least 50 percent of the assessed value of land identified in the area (Whiffin Spit and Kaltasin are independent service areas) sign the petition against, then the new service for the area will not be created and the project will not proceed.

At this time, if the District is not successful with its grant application, it is unlikely we will continue to explore sewer service expansion in these areas; however, this is a conversation we are interested in continuing with property owners at the Project Open Houses.

The following flow chart provides an overview of next steps for this process, should the grant be approved. This process will be completed for both Whiffin Spit and Kaltasin. Staff will be engaging with property owners at Project Open Houses this summer (in-person and online) to help inform decision-making on the potential expansion of Sooke's sewer system. Dates will be posted at letstalksooke.ca/wwplanning once confirmed.



Tell me more about the local area petition process. When will this take place?

Because the District will need long-term financial borrowing to establish the Local Area Service and expand the sewer system, the District needs the approval of property owners in the potential service area(s) (i.e., Whiffin Spit and Kaltasin) to do so. The District will initiate a Local Service Area Petition Against process to determine if property owners in the potential service area(s) oppose the servicing of the area and the associated costs. Two separate petition processes will take place: one for Whiffin Spit, and one for Kaltasin.

The petition processes will not begin until the grant status is known. Residents will be notified by direct mail of the petition process and have at least 30 days to respond. Information will also be posted on the District website and at letstalk.sooke.ca/wwplanning.

What happens if a local area petition passes? What happens if a local area petition fails?

If the local area petition passes, the new Local Area Service will be established, and sewer expansion will proceed. If the local area petition fails, the District will not force expansion. This is true for both the Whiffin Spit local area petition process, and the Kaltasin local area petition process.

Can properties and stratas opt-out of connecting to the sewer system or is the connection within the area mandatory?

Since 2006, properties in the existing Local Area Service are required to decommission their septic system and connect to the municipal sewer system (when available) within 6 months. This is outlined in the Mandatory Connection Bylaw. Failure to do so can result in fines. Typically, strata properties are treated the same as non-strata properties and are required to pay annual operation and maintenance fees.

The District is currently exploring what this might look like for existing stratas and will follow up with stratas specifically, once more information is available.

Benefits

Help me understand the differences between septic and sewer. What are the benefits of one system over the other?

Septic

If you have a septic system, this means you have your own treatment facility right in your yard. These units are typically buried underground and include a septic tank and a drainage field. In the septic tank, organic matter is broken down and the solids and liquids are separated.

While the solids are designed to stay in the tank, the liquid is sent to the drainage field where it seeps into the soil through a network of pipes with small holes which provides additional treatment benefits. However, if too much water is flowing into the septic tank, the separation process may not have enough time to happen, causing wastewater to be pushed out into the drainfield. This event can happen if household appliances are inefficient or used improperly. This has potential environmental and health impacts.

Like the municipal wastewater system, septic systems must be properly maintained. Property owners with septic systems are responsible for this maintenance, which includes having it inspected by a professional every few years. When these steps are forgotten, their impact has a cumulative effect on Sooke and can put the health of our environment and community members at risk. This risk gets even bigger when we rely on historic systems that do not meet today's standards. If you rely on your own septic system, then you have an important responsibility to maintain it.

Benefits

- System function is not impacted by service interruptions happening in the District's sewer system (e.g., clogs, backups etc.)
- Septic tanks can last 15 – 40 years before needing to be replaced depending on the material and how well it's maintained
- No monthly sewage bills. Costs are limited to initial installation and occasional maintenance
- When located in suitable areas (e.g., gravel or clay soils, deep water table, etc.) and engineered, constructed and maintained properly, septic tanks serve as a viable, environmentally responsible, solution for liquid waste management

Challenges

- Septic systems must be maintained by property owners. Regular maintenance must be performed by a professional, authorized by the *BC Public Health Act Sewerage System Regulation.* Systems must be pumped every 2-5 years
- Foregoing routine maintenance has some serious consequences including:
- Expensive repairs.
- Health risks: A failing septic system can release untreated or partially treated wastewater right in your backyard. Human wastewater contains disease causing organisms and can pose health risks to your family and your neighbours.
- Negative environmental impacts: Because the septic system uses the environment to treat wastewater, a failing system can pollute our streams, lakes, shorelines, groundwater, and local drinking water wells.

- Large lot sizes are required to accommodate septic fields. This impacts the overall land use and what you can put on, or around your property. Gardens, trees and shrubs cannot be planted over or near a septic drainfield due to excess water and root growth. Buildings, patios and other impermeable surfaces cannot be built over the drainfield because they limit oxygen supply for the soil. This creates limitations for property owners.
- Septic systems can affect the quality of surface water bodies as well as local drinking water wells.

Sewer Wastewater Treatment

The wastewater treatment system in Sooke has been operational since 2006. When properties are located in the Sewer Service Area, this means everything that goes down a drain, or gets flushed down the toilet ends up at the District's wastewater treatment plant.

For properties in the Sewer Service area, a series of pipes, known as the sewer collection system, carries their raw sewage to the wastewater treatment plant. Here, the raw sewage is treated before it is returned back to the environment. The first step of treatment uses a fine screen to filter out any large pieces of trash, such as food, wipes, and feminine products. After this, small particles such as sand, gravel and coffee grounds are removed through a process known as grit removal. From here, the sewage is treated in two sequential batch reactors (SBR) which use biological oxidation (i.e., micro-organisms) and gravity to treat the water and allow any remaining residue to settle out while the clean water is left on top of the basin. Lastly, the cleaned water is sent to the UV (ultraviolet) channel for disinfection. This step destroys remaining bacteria and viruses before the treated water is returned back to the environment.

Overall, the wastewater treatment plant helps the District achieve a higher level of wastewater treatment which leads to cleaner water returned to the environment with a smaller impact. To protect public and environmental health, wastewater treatment plants must meet strict design standards and regulations. Meeting these requirements can make the cost of treatment facilities quite expensive.

Benefits:

- Less work for property owners (no maintenance required).
- Reduces potential environmental impacts of failing septic systems.
- Ensures compliance with the District's Liquid Waste Management Plan.
- District's sewer system encourages sustainable land use through the development of compact community centres within Sooke.

Challenges:

- High costs for residents and the District (operations and maintenance, usage, etc.).
- Managing aging and failing infrastructure requires a proactive approach and is resource intensive.
- The consequence of system issues or service interruptions are much larger in comparison to septic systems (e.g., an entire street versus a single property).
- If we proceed with sewer expansion, will there be other benefits to our neighbourhood such as sidewalks? What other benefits does this project offer residents? Who pays for these additional amenities?

The primary focus of the potential sewer expansion in Kaltasin and Whiffin Spit are to:

- Reduce potential environmental impacts of failing septic systems;
- Support continued efforts to improve the environmental quality of the harbour; and
- Provide property owners with a sustainable wastewater management system.

Once underground work is completed, the District is committed to exploring above-ground amenities and will include these considerations through the annual Citizen Budget Survey and Service-Level Review. Through this survey and the District's open-budget process, citizens provide input on how their tax dollars may be spent. For the 2023 budget, this survey will be available between June 15-July 17, 2022.

If future development in either Kaltasin or Whiffin Spit is approved through the District's development approval process, additional community benefits or amenities such as sidewalks and bike lanes may be considered outside of property taxes by the development process and revenues collected via "Development Cost Charges" (DCCs) as per the District's DCC Bylaw. In these cases, development cost charges would be considered to help pay for these additional amenities.

Environment

Tell me more about the environmental benefits. Show me the data that speaks to the environmental concerns and how this costly project is the best solution to the identified problem.

As part of developing the Stage 3 Liquid Waste Management Plan in 2010, the Advisory Committee identified an interest in creating a prioritized list of future areas for inclusion in Sooke's Sewer Service Area based on both economic (cost) and environmental concerns. At this time, Whiffin Spit North and Kaltasin catchments were determined as high priority catchments for inclusion in the SSA, as was Whiffin Spit South. The choice to consider the entire Whiffin Spit catchment area for future inclusion in the SSA helps to achieve environmental goals and make the potential expansion more affordable for property owners through cost-sharing.

The results of more recent and ongoing monitoring show that the greatest threats to water quality in the Sooke Inlet, Harbour and Basin are likely a combination of:

- rainwater runoff from polluted areas (e.g., roads, impervious areas, pet farms, etc.),
- natural wildlife populations, and
- populated areas that have septic system only and are not connected to the sewage system.

However, 2021 stormwater monitoring results demonstrate that sewage is still present in the Sooke Harbour with specific traces to human bacteria. Given what we know about historic areas of concern, the risk of failing septic systems and evidence of human bacteria, the Kaltasin and Whiffin Spit areas continue to be priority sewer expansion areas.

Construction

Tell me more about installation. Can access be done by a property owner?

Should the District proceed with the sewer expansion, property owners will be responsible for conducting all work on private property. The work required to connect to the sewer system will vary depending on the property and may include, but is not limited to:

- Choosing and contracting the appropriate tradespeople
- Receiving a permit for the sewer connection as required by Bylaw No. 70, *Building Regulation Bylaw, 2001*
- Connection to the sewer service at the property line
- Installation and electrical connection of grinder pumps (if required)
- Decommissioning of septic systems
- Payment of fees
- Any other regulatory requirements that may apply to specific private properties (for example some properties may have environmental, archaeological, riparian, or other requirements)

How long will the construction projects last? How will traffic be managed during construction?

Responses to the grant application are expected in Spring 2023. If the grant and petition process is successful, preliminary dates for construction and implementation are targeted for 2023-2024, with the wastewater system brought online in spring of 2025. Following this timeline, detailed design would occur in summer of 2023, at which point system routes, road closures and impacts on traffic, including the necessary traffic management plans would be better known.

Financing/Costs

If sewer service expansion benefits the community, by helping restore the basin, why are specific neighbourhoods paying for this service and not the entire community?

Properties currently connected to the District's sewer system have been paying a number of fees in order to receive this service which has provided historic benefits to the entire community. Like potential new users, these existing properties have paid for, or are paying:

- *Parcel Taxes - t*o recover the capital cost of the existing sewage collection and treatment facilities
- *Operations and Maintenance Costs* (through the Parcel Tax) – to support the ongoing operation of the wastewater treatment plant, pumps, and collection system as well as replacing parts of the system as they age, and
- *On-site Costs* – to pay for the physical connection into the sewer main at the property line and fees associated with decommissioning the septic system, if applicable.

This means that users on septic today have historically been receiving these community-wide benefits thanks to users connected to the sewer system. Therefore, it is the responsibility of new users to pay their fair share when added to the system.

Overall, the costs seem astronomical. A 40% contingency shows a lack of thought into this project. How accurate is the budget? What will happen in the event of a cost overrun?

For many projects, a contingency is included to budget and prepare for unknown or unpredicted costs. It is important to recognize that although estimates are made based on best-judgement, professional knowledge, experience and information available at the time, there are several factors that impact these costs that can change, especially with time. This is why a contingency is provided.

For projects that aren't fully designed yet, the unknown or unpredicted costs are typically larger than projects that are in the final stages of design. For this reason, projects in their early stages have a higher contingency to account for the larger number of unknowns. This is why a 40% contingency is used on cost estimates for the potential sewer expansion.

If the project costs are greater than the total amount of money from the grant and the amount approved by the public through the Loan Authorization Bylaw, the District would need to find an alternative funding source. This level of contingency makes the need for an alternative funding source less likely. If costs are lower than expected as the final design is complete, these savings would be passed onto property owners.

What financing options are available?

If the sewer service is expanded, property owners are responsible for paying the proposed parcel tax. The proposed parcel tax is the remaining amount of money to construct the sewer system after grant funding and/or development cost charges have been account for. Property owners will have the option of paying the parcel tax as a one-time charge or an annual amount financed over 25 years.

What if connecting to sewer is a financial hardship for a property owner? How will property owners who experience financial hardships be supported and not burdened by the costs associated with sewer connection?

For property owners facing financial hardship, the option to finance the proposed parcel tax over a 25-year period may be better suited than a one-time charge. Additionally, residents on fixed incomes may wish to apply to the provincial Property Tax Deferment Program. This program allows eligible registrants to defer their property taxes under one of the following deferment programs:

- Regular Program
- Families with Children Program

Once you have received a copy of your Property Tax Notice you may apply to determine if you are eligible. For more information on property tax deferment contact the Surveyor of Taxes Office at 1-250-356- 8121 or visit their website.

Note: annual operation and maintenance costs can not be deferred.

If the parcel tax is financed over 25 years, but the property is sold before the financing is paid off, who is responsible for the remaining cost? The old or new owner?

In this event, the remaining costs stay attached to the parcel, therefore, the responsibility of paying these costs is transferred to the new owner.

Community Planning

Sewer expansion typically means more development. Our road network is already at capacity. Why is this project a priority? How will sewer expansion impact development?

The purpose of the sewer is not to encourage more development; however, it may create opportunities to densify the land in alignment with the Official Community Plan (OCP). Any future development in Kaltasin and/or Whiffin Spit will be required to make contributions to towards sewer expansion which has the potential to lower the overall parcel tax for residents. Development can bring community benefits such as pedestrian connectivity, community facilities and a strong local economy.

Where the road network is at capacity, the District will require developers to make contributions toward future road upgrades and network improvements. These will be captured through required frontage improvements, development cost charges and/or project upgrades negotiated through development agreements.

Overall, reducing the potential environmental impacts of failing septic systems and improving the environmental quality of the harbour are the priorities motivating the potential sewer expansion.

It is important to note that the draft OCP (currently under review) proposes a Neighbourhood Area Plan be developed for each Billings Spit/Kaltasin and Whiffin Spit. This process allows for further consultation with residents to provide a clear and comprehensive land-use vision for specific neighbourhoods while also incorporating the broader needs and vision of the community.

Area Plans are great tools to manage growth and change in neighbourhoods where change may occur; the draft OCP recommends this tool be used where there is potential for sewer expansion. Area Plans typically include road networks, infrastructure considerations, parks and trails, environmental considerations and other items the neighbourhood identifies as important. Once the neighbourhood planning is complete, the neighbourhood plan forms part of the OCP.

Other

I am concerned about odour. Is odour an issue?

Managing odour is a common concern for the public when thinking about wastewater, however, when the proper odour control measures are put in place, the odour is effectively managed. These measures can range from designing a system that reduces the amount of time sewage is sitting still, (e.g., in a pump station) to aerating the sewage or adding other chemical treatments to reduce odour. As part of the 2021, 5-year financial plan, the District of Sooke is investing $80,000 into Odour Control Mitigation.

With increasing extreme weather events (power outages, floods, etc) and the lower elevation of these areas, what is the contingency plan should there be an issue with flooding, line breaks, spillage, or pump shutdown?

Whether sewage is sent to a septic field or a municipal wastewater treatment plant, both systems can face risks due to extreme weather. This is why it is critical our infrastructure is properly designed, monitored and maintained.

Extreme weather events such as flooding or rainfall can cause soils to become saturated (i.e., filled with water) which presents problems for septic systems. As we learned above, the soils in the drainfield provide the final treatment step as part of the septic system treatment process. However, if the soil is full of water, the drainfield does not have the capacity to accept liquid from the septic tank. This means the soil cannot provide the last step of treatment. This may cause wastewater in the septic tank to back up and overflow, creating environmental and public health concerns. These issues can be avoided when septic systems are properly designed and maintained. This includes scheduling routine pump outs of septic tanks and ensuring systems are working efficiently throughout the year. This emphasizes the important role property owners have in maintaining their septic system.

On the other hand, the District's sewer infrastructure heavily relies on operations staff and system design to provide 24-hour service, even during extreme weather events. For instance, regulations often require wastewater treatment facilities to be designed with some level of *redundancy*. This might look like installing more equipment than is required in order to handle additional flows or to be used as a back-up should a piece of equipment fail. Having redundancy throughout the system helps ensure operations continue despite unexpected issues.

Similar to property owners maintaining their septic systems, operations staff play a key role in ensuring the District's sewer system remains up and running during extreme storm events. This includes proactive system maintenance, and also means providing stand-by support for unforeseen issues. For example, during previous power outages, District operators have been responsible for resetting equipment and monitoring operations throughout the day and night as needed. Since the wastewater treatment plant started operating in 2006, operations staff have been dealing with and adapting to extreme weather events.

The District is also developing a wastewater master plan which will help to proactively maintain system infrastructure and avoid failures such as pipe breaks and flooding. This plan looks at the condition and capacity of sewer infrastructure and helps the District identify infrastructure priorities for replacement or upgrades.

I need to fully understand the impact on a strata. What is involved in decommissioning septic specific to a strata?

The district is progressing design with consultants, including identifying various scenarios applicable to different stratas.

Scenarios may vary considerably per strata depending on the number of units and connection requirements (i.e. gravity, forcemain, pump requirements, etc.). For example, a "best-case scenario" would require a connection by gravity and, depending on the number of units connecting, the cost to connect may be significantly less than a single-family connection. A "worst-case scenario" could require a pump station with a force main connection and, again depending on the number of units, may result in more significant costs.

The typical one-time on-site costs for a single-family residence could range from $2,000 to $7,000 with additional costs for properties where on-site pumps are required. Should technical review indicate costs may be greater than this for a strata, the district will engage consultants on further review to ensure residents have the information available to make an informed decision in advance of the Local Service Area Petition Process. The typical process for decommissioning septic specific to a strata is as follows:

1. All solids and liquids must be removed by a registered hauler and disposed of at a licensed sewage treatment plant, lagoon or receiving facility.
2. Any electrical devices or components, if not usable for the sewer connection, then need to be removed and disposed of. Devices containing mercury, such as pump floats, must be disposed of at a licensed hazardous waste disposal facility.
3. Once solids and liquids have been removed, the empty tank should be filled with clean sand, gravel or other acceptable material and sealed. Filling the tank, rather than crushing it helps avoid the introduction of contaminants into the surrounding soil.
4. The area should be graded and covered with vegetative cover (e.g., grass).