

November 2019

Wastewater Service Review and Asset Management Plans



Table of Contents

Executive Summary..... iii

1. Introduction 1

2. Background 1

2.1 Overview of the SCR D 1

2.2 Asset Management at the SCR D 2

2.3 Wastewater Services..... 3

3. Wastewater Systems Overview 5

3.1 Wastewater Collection 5

3.2 Wastewater Treatment..... 5

3.3 Treated Effluent and Disposal 6

3.4 Natural Assets..... 7

4. Wastewater Budget Review..... 7

4.1 Current Budget & Revenue..... 7

4.2 Potential Budget & Revenue 7

5. Wastewater Asset Management Further Development..... 9

5.1 Condition Assessments 9

5.2 Current Level of Service and Desired Level of Service 10

5.3 Risk and Criticality Modelling..... 11

5.4 Lifecycle Management..... 11

5.5 Long-Term Financial Planning 12

6. Conclusion..... 13

Area A – Canoe Road Wastewater Local Service Asset Management Plan

Area A – Greaves Road Wastewater Local Service Asset Management Plan

Area A – Lee Bay Wastewater Local Service Asset Management Plan

Area A – Lily Lake Village Wastewater Local Service Asset Management Plan

Area A – Merrill Crescent Wastewater Local Service Asset Management Plan

Area A – Painted Boat Resort Wastewater Local Service Asset Management Plan

Area A – Pender Landing Wastewater Local Service Asset Management Plan

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

Area A – Sakinaw Ridge Wastewater Local Service Asset Management Plan

Area B – Curran Road Wastewater Local Service Asset Management Plan

Area B – Jolly Roger Wastewater Local Service Asset Management Plan

Area B – Secret Cove Wastewater Local Service Asset Management Plan

Area B – Square Bay Wastewater Local Service Asset Management Plan

Area D – Roberts Creek Co-Housing Wastewater Local Service Asset Management Plan

Area E – Sunnyside Wastewater Local Service Asset Management Plan

Area E – Woodcreek Park Wastewater Local Service Asset Management Plan

Area F – Langdale Wastewater Local Service Asset Management Plan

Area F – YMCA Camp Elphinstone Wastewater Local Service Asset Management Plan

Executive Summary

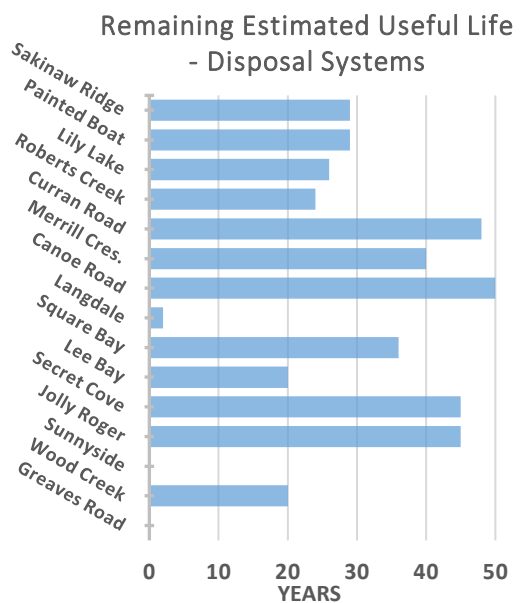
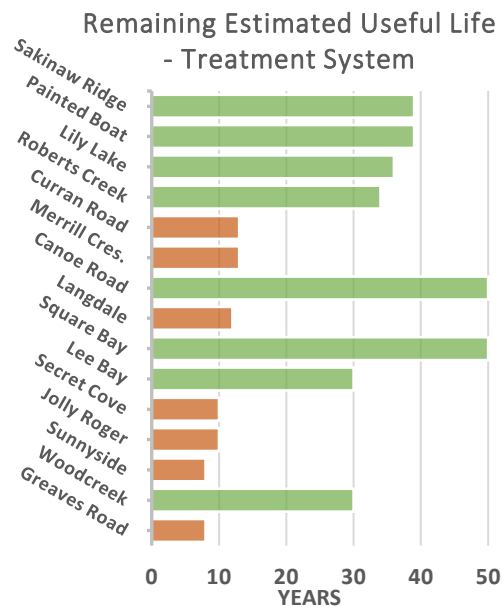
The Sunshine Coast Regional District (SCRD) has been responsible for the management of community wastewater services since 1979. Community wastewater services are necessary where individual parcels are not suited for individual septic systems. Limitations on parcel size or unfavorable soil conditions typically dictate when community wastewater service is necessary. A local service area is adopted for every community wastewater service that includes only pre-identified parcels benefitting from the service.

Wastewater services are typically comprised of three systems; collection, treatment, and disposal. Each has a different estimated useful life. The following two charts illustrate the estimated remaining life of the treatment and disposal system (drainfield or outfall) for each wastewater system operated by the SCRD. The SCRD owns 15 treatment systems with seven of them approaching the end of their estimated useful life (shown in orange in the chart); three of those service areas (Langdale, Sunnyside, and Greaves Road) also have disposal systems nearing the end of, or exceeding, their estimated useful life.

None of the wastewater collection systems are approaching the end of their useful lives. With an average expected life of 85 years, only two of the local services have a collection system that is currently over 40 years old.

Wastewater services are funded through parcel taxes and user fees; parcel taxes are collected from all parcels within the local service area boundary and user fees are collected from parcels utilizing the service.

A SCRD policy regulating the minimum contribution of revenue into a dedicated capital reserve does not exist. Currently unspent revenue is contributed annually to either capital or operational reserves specific to each local service area. As of the end of 2018, the reserve balances at the local service areas ranged from 0% to 6.4% of the estimated replacement value.



WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

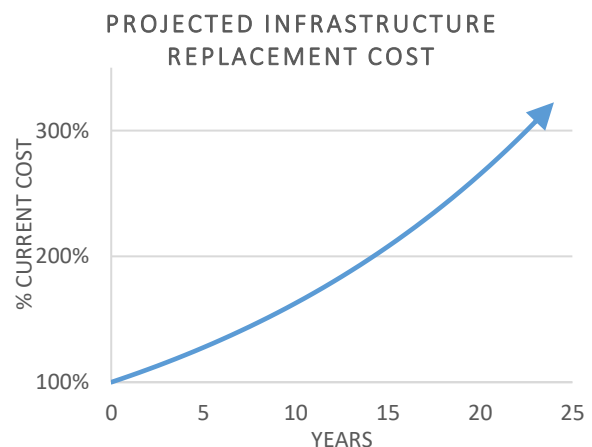
Review and analysis of all wastewater local service areas was undertaken to identify potential funding shortfalls and establish funding levels required to address the shortfalls. The attached Wastewater Local Service Asset Management Plans (WAMPs) consider a rate structure similar to SCRD water service areas where user fees fund operational costs and parcel taxes fund capital costs.

A review of existing user fees was conducted during the development of the WAMPs by comparing current levels of service to an optimal level of service. In order to achieve the optimal level of service, an increase of fulltime staff from two to three would be required. A second maintenance vehicle is also necessary to accommodate the additional staff. The potential user fee increase based on optimal levels of service ranges from -1% to 433%. The severity of the increase directly relates to the number of users in each service area. Currently eight of the 15 local service areas do not have a full complement of users. With a full complement of users the increase would significantly reduce for those eight local service areas, with the maximum increase lowered to 162%.

The WAMPs demonstrate that parcel tax rates are dependent on the duration of the capital model and the systems that require replacement within that model. Four capital models were prepared for each local service area to consider anticipated funding requirements over 10, 20, 50, and 80 year periods.

The capital budgets used for the models consider future infrastructure replacement while establishing a more robust reserve fund equal to 10% of the replacement value of the existing infrastructure by the final year of each model. Potential third-party funding to offset the cost of infrastructure replacement, from development fees or government grants, was not considered as there is no certainty that this funding will be available.

The estimated replacement cost of all existing wastewater collection, treatment, and disposal assets within the SCRD is approximately \$31.3 million. The average cost per parcel to replace the existing infrastructure in their local service area ranges from approximately \$8,000 to \$131,000. Assuming a 5% construction inflation, the wastewater infrastructure replacement costs can be expected to triple in under 25 years.



The WAMPs apply to a relatively small number of residential properties on the Sunshine Coast. For those property owners any increase to user fees or parcel taxes will be significant, but implementing a sustainable asset management policy will ensure continuous and reliable service for users while mitigating the potential for unanticipated levies to fund infrastructure replacement.

1. Introduction

This document serves as a summary of the Sunshine Coast Regional District's (SCRD) Wastewater Services Review and the fifteen Wastewater Local Service Asset Management Plans. The plans are intended to provide information required to make informed decisions regarding operations and maintenance as well as capital renewal and replacement. The site specific plans are also intended to assist in development of budgets required to provide sustainable service delivery to all users of SCRD wastewater systems.

This document also provides general information regarding the SCRD's wastewater systems and the planned operation and management of these facilities.

These plans have been prepared in accordance with the BC Framework of the Asset Management for Sustainable Service Delivery (Asset Management BC, 2017).

2. Background

2.1 Overview of the SCRD

The SCRD is a regional district situated on the Sunshine Coast, 30 km west of Vancouver. The SCRD manages resources in eight electoral areas (see Figure 1 below) including five districts, two member municipalities, and one First Nations government:

- Area A: Pender Harbour & Egmont
- Area B: Halfmoon Bay
- Area D: Roberts Creek
- Area E: Elphinstone
- Area F: West Howe Sound
- The District of Sechelt
- The Town of Gibsons
- shíshálh Nation (Sechelt Indian Government District)

The SCRD has an overall population of approximately 30,000 (Sunshine Coast Regional District, 2018). The SCRD supplies several major services to its districts and member municipalities including, but not limited to, municipal water services, isolated wastewater services, community park facilities, community recreation facilities, public transit services, and dock services. The SCRD's assets are valued at over \$300,000,000 and are funded by various means.

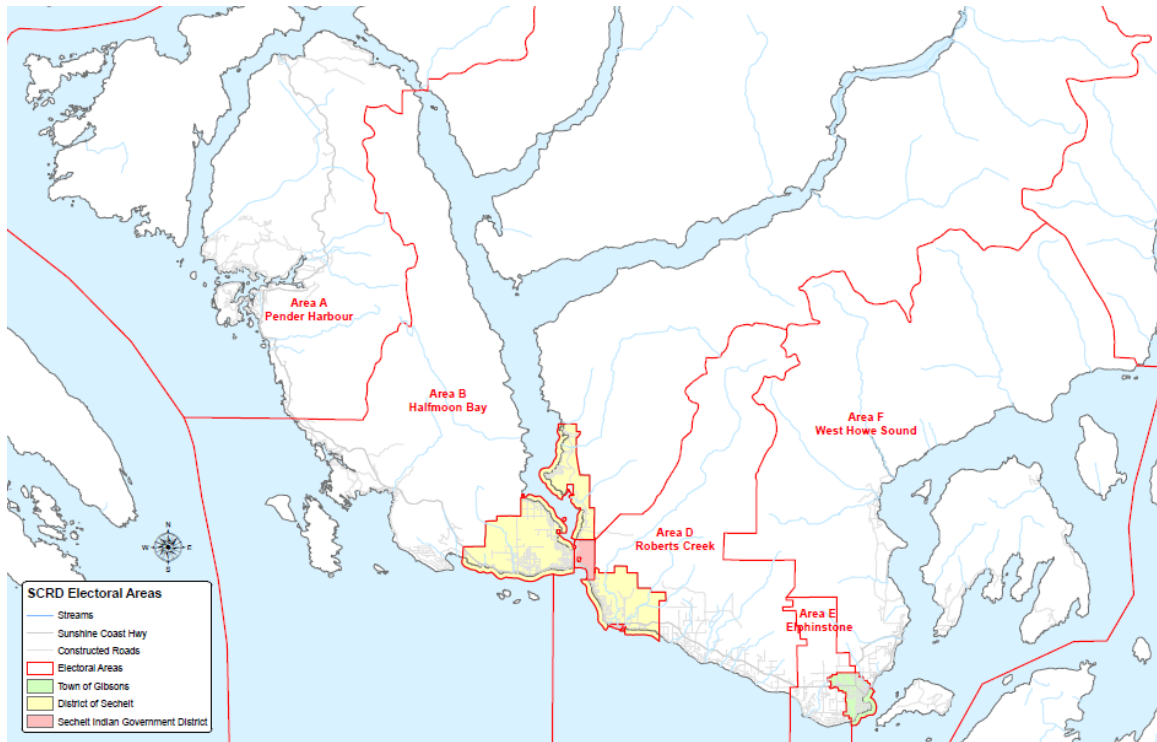


Figure 1: Sunshine Coast Regional District Electoral Areas.

2.2 Asset Management at the SCRD

In 2015 the SCRD initiated an asset management program to help deliver sustainable services in accordance with best practices established by Asset Management BC. Asset Management BC created guiding documents for use by local governments to assist in the development of asset management processes.

Following initiation of the program, the SCRD prepared its own Corporate Asset Management Plan. That document provided a summary of the assets owned by the SCRD and an action plan for the SCRD to begin implementation of asset management best practices.

The progress to date has included inventory collection, implementation of 'Cityworks' software to track work order activity and assist with decision making, and the completion of several condition assessment programs to accurately determine the remaining useful life of certain SCRD's assets.

The preliminary results of the completed work highlight the shortcomings of the strategies previously employed to provide sustainable service delivery within the SCRD. Many of the challenges experienced by the SCRD are common among local governments; rapid population growth across a largely rural community combined with aging foundational infrastructure. Meeting these challenges requires coordinated effort to ensure adequate service levels are maintained

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

while encouraging sustainable growth. The variety of the services provided by the SCRD also requires adequate staffing to ensure it is possible to conduct the necessary maintenance for all existing and future assets owned by the SCRD.

2.3 Wastewater Services

The SCRD organizes the operation and taxation of its wastewater services as local service areas. Each wastewater service tracks its own operating and capital costs individually. The wastewater services are funded through individual bylaw structures that establish taxation for a local service area. A separate Asset Management Plan was prepared for each local service area as funding and maintenance requirements are unique to each.

Table 1: Summary of SCRD wastewater treatment service areas.

Service Area	Treatment Facility Address	Electoral Area	Added
Canoe Road	12676 Canoe Rd	Egmont / Pender Harbour (Area A)	1994
Greaves Road	12545 Greaves Rd	Egmont / Pender Harbour (Area A)	1984
Lee Bay	4336 Orca Rd	Egmont / Pender Harbour (Area A)	1986
Lily Lake Village	12708 Lagoon Rd	Egmont / Pender Harbour (Area A)	2005
Merril Crescent	12683 Merrill Cres	Egmont / Pender Harbour (Area A)	1994
Painted Boat	12819 Lagoon Rd	Egmont / Pender Harbour (Area A)	2008
Pender Landing ¹	13321 Pender Landing Rd	Egmont / Pender Harbour (Area A)	2008 ²
Sakinaw Ridge	4300 Milne Rd	Egmont / Pender Harbour (Area A)	2014
Curran Road	5521 Curran Rd	Halfmoon Bay (Area B)	1994
Jolly Roger	10177 Highway 101	Halfmoon Bay (Area B)	1985
Secret Cove	5475 Secret Cove Rd	Halfmoon Bay (Area B)	1985
Square Bay	5320 Susan Way	Halfmoon Bay (Area B)	1981
Roberts Creek Co-Housing	1127 Emery Rd	Roberts Creek (Area D)	2004
Sunnyside	1101 Sunnyside Rd	Elphinstone (Area E)	1983
Woodcreek Park	534 Oceanview Dr	Elphinstone (Area E)	1992
Langdale	42 Newman Rd	West Howe Sound (Area F)	1989
YMCA Camp Elphinstone ¹	1765 YMCA Rd	West Howe Sound (Area F)	2014 ²

¹ Not currently a local service area however it is anticipated the SCRD will establish one in the near future.

² Year that the SCRD agreed to start maintaining the treatment and disposal systems.

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

The rapid growth of the number of wastewater local service areas managed by the SCRD has outpaced funding and maintenance capacity. Approximately one third of the wastewater systems currently maintained by the SCRD were added in the last 15 years. Due to stricter treatment requirements and new technology (e.g. ultraviolet disinfection), an increase in operation and maintenance hours may be required once wastewater treatment systems are replaced, as experienced with two recently replaced treatment systems.

A Capital Planning Review for wastewater services was initiated in 2018 to establish the optimal level of service, operational activities, staffing levels, capital renewal and replacements, and to determine the funding necessary to meet these operational and capital targets. The service review soon identified a need for more staff to operate and maintain the wastewater systems. A new Wastewater Technician Coordinator position was created, increasing the full-time wastewater staffing from one to two.

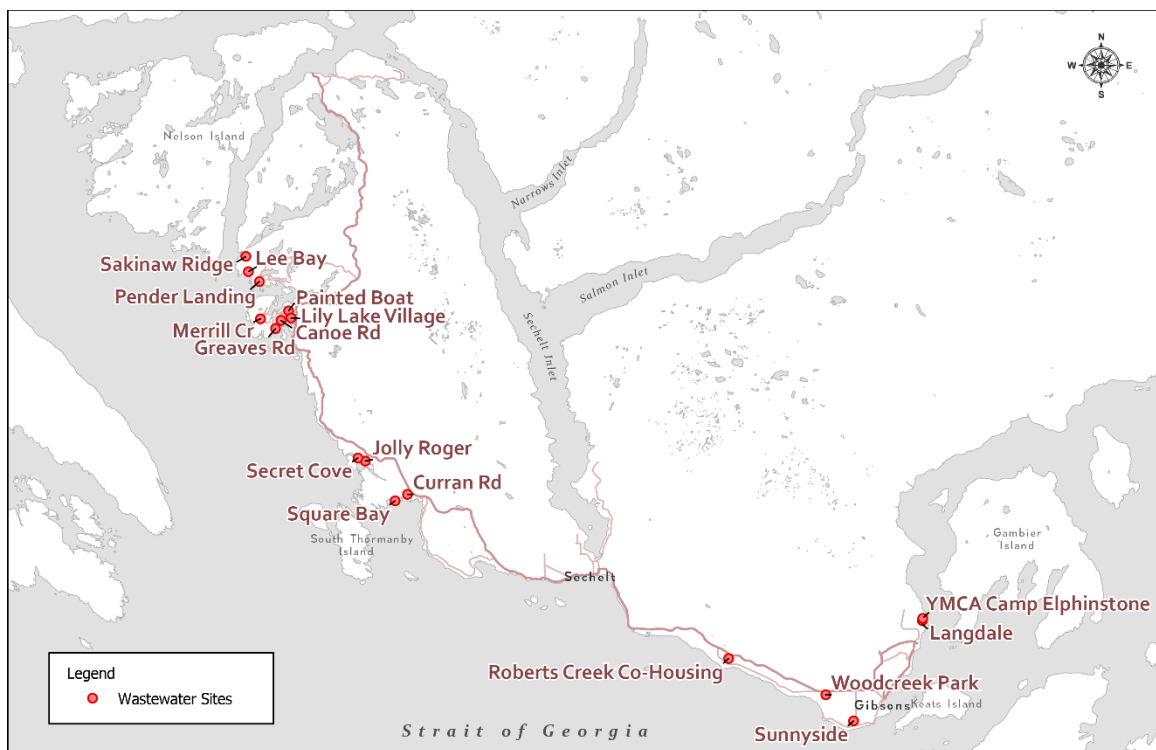


Figure 2: Location of SCRD wastewater treatment service areas.

3. Wastewater Systems Overview

3.1 Wastewater Collection

Wastewater collection is the process of collecting wastewater from users and conveying it to the wastewater treatment facility. The collection components include:

- *Service Connections:* Wastewater created by toilets, tubs, sinks, dishwashers, laundry machines, and other residential and commercial activities is conveyed from the source through a service connection. The service connection (lateral) links the user to the main piping network of the system (mains).
- *Gravity Mains and Manholes:* Gravity mains convey wastewater using pipes sloped down towards the treatment system. They run between connection points called manholes. The main can be accessed from inside of the manhole to clean, inspect, and repair mains. The majority of the mains in the SCRD wastewater systems are gravity mains.
- *Pressurized Mains:* Where the topography does not allow for gravity to convey the wastewater, pressurized mains are used. Grinder pumps, located on the user's property, connect to a small-diameter, low pressure main. The low pressure main delivers the wastewater to a manhole that connects to an adjoining gravity main.
- *Force Mains:* Force mains are large-diameter, high pressure mains that move the wastewater from a lift station to a manhole that connects to an adjoining gravity main.
- *Lift Stations:* Lift stations provide a point of collection and pumping for wastewater where force mains are required. A typical lift station contains a large collection basin, grinder pumps, pump control instrumentation, and connection to a force main.

3.2 Wastewater Treatment

Wastewater treatment is the process of removing residential contaminants from influent wastewater collected from the users to create an effluent wastewater that can be disposed of in either an ocean outfall or a drainfield with minimal environmental impact. That process involves:

- *Solids Removal:* Large solid particles (plastics, metals, cloth, etc.) are removed from the wastewater usually by a bar screen.
- *Primary Treatment:* Smaller settling solids (silt, large biological matter, etc.) are removed from the wastewater by reducing the flow velocity and allowing particles to settle.
- *Secondary Treatment:* Organic matter in the wastewater is broken down by a biological process. Most wastewater processes are defined by their secondary treatment methods since that's when the most variation in wastewater treatment occurs (other portions of the treatment process are relatively consistent among plant types).
- *Clarification:* Settling solids from the secondary process are removed from the wastewater by reducing the velocity allowing the solids to settle out.
- *Filtration:* Fine solids are removed by filtration. Not all processes require filtration depending on the final target quality of the effluent.
- *Disinfection:* Pathogens in the water on (viruses, bacteria, parasites, etc.) are killed or sterilized typically by ultraviolet (UV) treatment. The type of disposal method and the effluent quality standard typically dictates whether or not disinfection is required as part of the process.

3.3 Treated Effluent and Disposal

When wastewater has been treated sufficiently it can be considered effluent, or of disposal quality. The standard of disposal quality depends on the disposal method. There are two types of disposal methods utilized in the SCRD – ocean outfall and drainfield.

- *Ocean Outfall:* The treated effluent is conveyed to a distance away from shore where it is disposed in the ocean. The disposal location is located in the dilution zone that is established by distance from shore, distance from ocean surface and ocean currents to prevent effluent ingestion by the general population, water fowl, or other sensitive receptors.
- *Drainfield:* The treated effluent is discharged to a field where perforated pipe is installed underground. The perforated pipes evenly distribute the treated effluent into the ground where soil microbes naturally continue treatment before effluent reaches the groundwater.

3.4 Natural Assets

Natural assets are not available as an equivalent to engineered wastewater infrastructure and therefore are not included in the wastewater local service asset management plans.

In the absence of natural assets, the Utility Services Division will consider opportunities to incorporate climate resilient and adaptable infrastructure when infrastructure renewal and replacement is required.

4. Wastewater Budget Review

4.1 Current Budget & Revenue

The current revenue for wastewater services is collected through two streams – user fees, which are paid by the existing users of the service, and parcel taxes, which are paid by all properties within the established service area. The total revenue is combined and is available to cover the cost of the total annual expenditures. Revenue remaining at the end of the year is transferred to either a capital reserve or an operating reserve.

In order for reserve funds to be accessed, a budget proposal must be prepared and approved by the Board of Directors. Reserves can be used to fund maintenance and repairs that are not typically budgeted for and would exceed the actual annual revenue or to contribute towards capital renewals or replacements as required.

As part of the Wastewater Services Review and the funding requirements of each wastewater local service area, it is recommended that wastewater services adopt a rate structure similar to water service areas, where user fees will fund operational costs and parcel taxes will fund capital costs.

Potential user fees and parcel tax options for 2020 and beyond have been included in each wastewater treatment local service plan.

4.2 Potential Budget & Revenue

Historically, user rates and parcel taxes were determined without the benefit of condition assessments or an approved asset management plan. This led to limited reserves for infrastructure renewal and replacement and the inability to complete effective preventative maintenance programs.

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

The potential user fees were determined based on detailed evaluations of the needs of each system based on its age, condition, and industry best practice. The operating budgets are largely based on the required hours that it would take to complete the necessary preventative maintenance work.

Estimated replacement costs of the wastewater systems components and creating a capital reserve policy that maintains a robust capital reserve formed the basis of the proposed parcel taxes. This would ensure that wastewater systems and components were replaced in a timely manner and that there is sufficient reserves in place to deal with emergencies.

Consideration to amalgamate two or more local services was not considered when determining replacement costs. Amalgamation of local services may lead to more cost-effective management of the wastewater services and potentially lower individual user fees and parcel taxes. As the treatment systems near the end of the useful lives, benefits of amalgamation with nearby service areas should be considered.

In order to ensure reliable wastewater collection, treatment and disposal in the future, decisions will need to be made regarding the implementation of new user fees and parcel taxes that more accurately represent the cost of owning and maintaining wastewater infrastructure.

Table 2: Summary of potential wastewater local service user fees and parcel taxes based on 50-year model.

Local Service Area	2019 User Fees	2019 Parcel Tax	2019 Total	2020 User Fees ³	2020 Parcel Taxes ⁴	2020 Total
Canoe Road	\$ 218.75	\$ 153.00	\$ 371.75	\$ 956	\$ 1,652	\$ 2,608
Greaves Road	\$ 255.00	\$ 102.00	\$ 357.00	\$ 400	\$ 2,093	\$ 2,493
Lee Bay	\$ 412.50	\$ 102.00	\$ 514.50	\$ 407	\$ 2,000	\$ 2,407
Lily Lake Village	\$ 562.50	\$ 204.00	\$ 766.50	\$ 949	\$ 1,920	\$ 2,869
Merrill Crescent	\$ 681.25	\$ 265.20	\$ 946.45	\$ 1,766	\$ 2,238	\$ 4,016
Painted Boat	\$ 537.50	\$ 0.00	\$ 537.50	\$ 548	\$ 2,045	\$ 2,593
Pender Landing	N/A	N/A	N/A	\$ 4,585	\$ 2,451	\$ 7,036
Sakinaw Ridge	\$ 718.75	\$ 418.20	\$ 1,136.95	\$ 3,832	\$ 3,952	\$ 7,784
Curran Road	\$ 475.00	\$ 153.00	\$ 628.00	\$ 837	\$ 3,241	\$ 4,078
Jolly Roger	\$ 412.50	\$ 20.40	\$ 432.90	\$ 679	\$ 2,682	\$ 3,361

³ Potential user fees based on optimal level of service delivery for operating and maintenance the wastewater systems

⁴ Potential parcel taxes based on Budget Plan 3 (50-Year Model with an even annual contribution) from each of the Wastewater Local Service Asset Management Plans

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

Local Service Area	2019 User Fees	2019 Parcel Tax	2019 Total	2020 User Fees ³	2020 Parcel Taxes ⁴	2020 Total
Secret Cove	\$ 412.50	\$ 102.00	\$ 514.50	\$ 733	\$ 2,806	\$ 3,539
Square Bay	\$ 412.50	\$ 102.00	\$ 514.50	\$ 820	\$ 4,776	\$ 5,596
Roberts Creek Co-Housing	\$ 562.50	\$ 204.00	\$ 766.50	\$ 1,339	\$ 2,052	\$ 3,391
Sunnyside	\$ 125.00	\$ 51.00	\$ 176.00	\$ 427	\$ 2,663	\$ 3,090
Woodcreek Park	\$ 500.00	\$ 102.00	\$ 602.00	\$ 671	\$ 3,330	\$ 4,001
Langdale	\$ 562.50	\$ 102.00	\$ 664.50	\$ 1,002	\$ 3,001	\$ 4,003
YMCA Camp Elphinstone	N/A	N/A	N/A	\$ 26,731	\$103,880	\$130,611

5. Wastewater Asset Management Further Development

The 2015 Corporate Asset Management Plan (AMP) identified the following topics to be included in future revisions of the AMP or any other infrastructure asset management plans.

- Condition Assessment;
- Current Level of Service and Desired Level of Service;
- Risk and Criticality Modelling;
- Lifecycle Management; and
- Long-Term Financial Planning.

Each of these topics were considered in the Wastewater Local Service Asset Management Plans. Progress on each of these topics is described below.

5.1 Condition Assessments

In 2018 the SCRD began conducting condition assessments through CCTV inspections of the wastewater mains and visual inspections of the manholes. The information gathered through these inspections will assist with forming future capital work plans. Staff will address the repair of defects discovered during the inspection based on the severity rating of the defect, as noted in Table 3.

Condition assessments of the treatment systems and drainfields were also completed in 2018 and will continue to be conducted by staff throughout the year during scheduled inspections. Third-party inspections of the ocean outfalls are completed on a five year cycle.

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

The summary of the CCTV inspection results and links to the video and inspection report are now available in the 'Cityworks' software for staff to easily access the inspection results and to identify the pipe segments with the most severe deficiencies.

Table 3 – SCRD Plan to Repair CCTV Inspection Defects

Severity Rating	Immediate Defect	Risk of Failure	Plan to Repair
5	Pipe segment has failed or will likely fail within the next five years	Requires immediate action	Staff will investigate and prepare a budget proposal with the intention of repairing the defect in one to three years from receiving the CCTV inspection report.
4	Pipe segment has severe defects	Risk of failure within the next five to ten years	Staff will investigate and prepare a budget proposal with the intention of repairing the defect in one to three years from receiving the CCTV inspection report.
3	Pipe segment has moderate defects	Deterioration may continue, at 10 to twenty year timeframe	Staff will investigate and prepare a budget proposal with the intention of repairing the defect in three to five years from receiving the CCTV inspection report.
2	Pipe has minor defects	Unlikely to fail for at least 20 years	Staff will monitor the defect in future CCTV inspections.
1	Pipe has minor defects	Unlikely to fail in the foreseeable future	Staff will monitor the defect in future CCTV inspections.

5.2 Current Level of Service and Desired Level of Service

The current level of service (LOS), as stated in the AMP, is typically a reflection of how an organization plans maintenance and responds to emergencies or requests from the public. For wastewater infrastructure, the LOS has too often been dictated by staff availability. Historically there was one staff member assigned to conduct inspections, maintenance, and repair of the treatment and disposal systems at all of the wastewater areas. Adhering to a scheduled maintenance program while also responding to emergency repairs was not always possible with these staffing levels. This can result in the treatment systems that are in the worst condition receiving the most attention, while delaying scheduled maintenance at the remaining treatment systems. This style

of reactive asset management is unsustainable and may result in increased costs associated with delivery of service. It is beneficial to proactively maintain existing infrastructure before critical repairs are required.

The desired LOS, as stated in the AMP, is based on an understanding of community expectations. As it relates to wastewater, it is understood that the community expects continuous and reliable wastewater collection, treatment, and disposal. To achieve this desired LOS, cycled maintenance schedules were developed to ensure the infrastructure is inspected and maintained at regular intervals. Each wastewater service area has a set of defined tasks that require completion at predetermined frequencies. Completion of these routine tasks will improve the performance of wastewater systems, and increase awareness of developing issues within the treatment or disposal systems. This should enable the SCR D to maximize the useful life of all wastewater infrastructure.

Based on the task frequency and the estimated time to complete each task, a total number of working hours and required staff was determined. In addition to the time required to complete the operational and maintenance tasks, additional time was allocated to each local service for technical assistance and administration of the systems. The staffing required to meet the desired LOS includes the two current staff and one additional Technician. The new Wastewater Technician Coordinator position mentioned in Section 2.3 addresses some of this staffing shortfall. There will also be a need to increase the available maintenance vehicles from one to two to accommodate the staffing increase.

5.3 Risk and Criticality Modelling

Risk and criticality modelling was not completed with the development of the wastewater local service asset management plans.

The probability of asset failure in the collection system can now be determined using the CCTV condition assessment results. Discussion on how to identify and assign consequence of failure is needed to complete the criticality modelling for the collection system.

Significantly more effort would be required to complete this topic for the treatment and disposal systems.

5.4 Lifecycle Management

Lifecycle Management for wastewater infrastructure is challenging due to the extended lives of the assets (i.e. 50 years for treatment systems, 85 years for collection systems, and between 40 and 85 years for disposal systems).

WASTEWATER SERVICES REVIEW AND ASSET MANAGEMENT PLANS

Considering that wastewater infrastructure is taken over by the SCRD years after it has been constructed, it can be difficult to determine the entirety of costs incurred against an asset beginning from design and procurement. As infrastructure is replaced this information is easier to record, however the difficulty of carrying out this exercise with numerous staff involved over the years may make this a challenging topic to complete. A robust series of Asset Management processes and policies are required to establish accurate lifecycle management for the long-term assets that are transferred to SCRD ownership.

5.5 Long-Term Financial Planning

The information provided in the wastewater local service asset management plans is intended to prompt discussion on long-term financial planning. These summaries of individual wastewater systems are the most in-depth review on the state of this infrastructure to date. Ideally the information will facilitate a conversation about addressing long-term funding requirements for these assets.

A significant factor to be considered is the rapid growth of construction costs, averaging 5% annually over the last 20 years according to historical cost indexes⁵. This rate of increase in costs across the EUL of the system will result in a drastically higher replacement cost compared to the original installation cost.

It is important to recognize that as the wastewater infrastructure starts to require replacement, there is a potential that long-term debt can overlap for the various systems replaced. As shown in Figure 3, in the period that occurs 40 to 100 years after original construction, some local service areas may be faced with debt repayment of drainfield that overlaps with the debt repayment of a treatment or collection system.

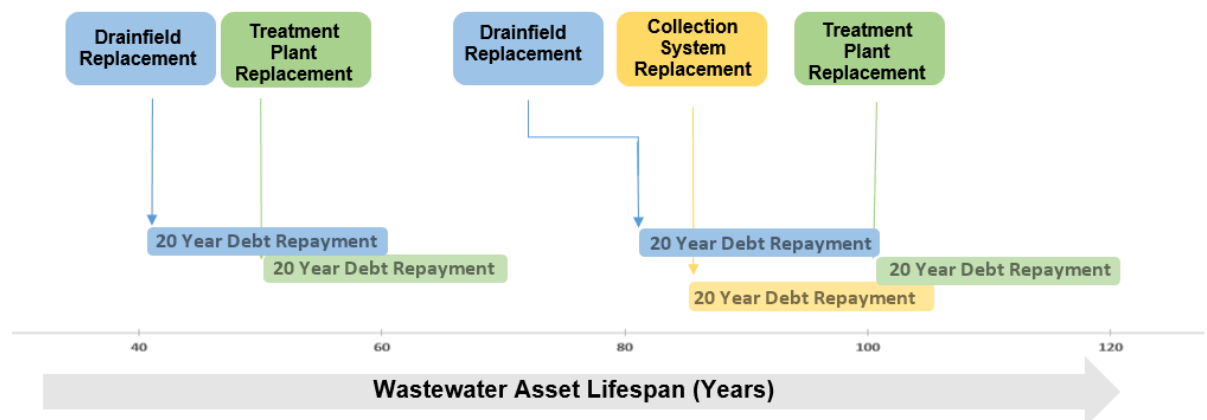


Figure 3: Wastewater infrastructure replacement and debt repayment timeline.

⁵ RSMean Data (2018) *Historical City Cost Indexes (Vancouver, Canada)*. Retrieved from rsmeansonline.com/Referenceltems/DetailInfo/2

6. Conclusion

Since the SCRD first began managing wastewater services, the number of local service areas has increased substantially. SCRD Utility Services staff have done a commendable job of maintaining the infrastructure at the 17 wastewater service areas, which feature seven different wastewater treatment methods, and are spread out across 75 km of the Sunshine Coast. Through the additions of new service areas, stricter treatment regulations, and new technologies, they have upheld their primary goal of delivering a continuous and reliable service to the residents in the local service areas.

The wastewater collection, treatment, and disposal systems have been deemed to be in good/fair condition on a collective evaluation. While the majority of the systems are in good or excellent condition, the evaluation scoring is depressed by the few aging systems that are either nearing or are past their expected useful life. For those systems in fair or poor condition, a near-term plan should be formulated for their impending repairs, renewals, or replacements. A long-term management plan has been prepared for consideration for all systems; including a review of the current allocation of revenue to ensure sufficient revenues are collected to account for foreseeable future costs associated with capital renewal and replacement, while ensuring operations and maintenance activities are funded adequately.

The effort to provide sustainable wastewater service within the SCRD is necessitated by the age of the infrastructure and the technical challenges that exist at many of the services. Consideration of complete lifecycle costs will ensure that appropriate levels of service are maintained for future residents.

This page has been intentionally left blank.