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Painted Boat Resort Wastewater Local Service Asset Management



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Version Log

This document was carefully prepared so that it can be maintained as a living document; a document that is continually edited and updated. Through the various edits and updates, this document may evolve and be expanded as needed. This may be as a result of infrastructure replacement or could be due to changes in regulatory requirements, technology, staffing, or environmental conditions. Regardless of the reason, updates to this asset management plan will be key to the ongoing operation of the Painted Boat Resort wastewater local service.

Version	Revised By	Date	Description
1	D. Joseph	November 28, 2019	Final report for Board of Directors approval

Acknowledgements

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1. Local Service Information



Figure 1 – Map of Wastewater Local Service Area and Infrastructure

- Address: 12849 Lagoon Road
- Original Construction: 2008
- Taken over by Sunshine Coast Regional District (SCRD): 2008
- Establishment of Local Service: 2011
- Major Upgrades: None to date
- Treatment System Owner: Private (The Owners, Strata Plan BCS2634)
- Number of Fronting Parcels: 32 Residential, 1 Restaurant, 1 Spa
- Number of Users: 34
- Treatment Process: BioMicrobics FAST® 4.5 (3) plants
- Treatment Permit #: RE-100020
- Permitted Discharge Amount: 42 m³/day (residential, spa), 5.4 m³/day (rest.)
- Regulatory Authority: Municipal Wastewater Regulation (MWR)
- Effluent Receiving: Ground
- EOCP Classification: SWWS-M (Small Wastewater Systems – Mechanical)
- Statutory Right of Ways: BB660282 (registered May 5, 2008 for access to the treatment and disposal systems located within strata common property)

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1.1. Development Details

The Painted Boat Resort wastewater local service area is located in the Egmont / Pender Harbour Electoral Area (Area A) of the SCRD. The treatment and disposal systems are located within the strata common property, and are located to the east of the residential and commercial users.

The community wastewater systems were constructed in 2008 to assist with the development of new multi-family dwellings in the strata development. The individual strata parcels in the Painted Boat Resort development are too small for an onsite septic system. The systems were managed by the developer until 2011 when the SCRD began overseeing the service.

1.2. Established Bylaws

There have been various bylaws adopted by the SCRD Board of Directors that are relevant to the Painted Boat Resort wastewater local service, as listed in Table 1.

Table 1 – Established Bylaws Pertaining to the Wastewater Local Service

Bylaw No.	Bylaw Name	Purpose
1080	Painted Boat Community Sewage Treatment System Service (2011)	Established a service area for the Painted Boat Community Sewage Treatment System.
644.3	Painted Boat Sewage Treatment Facilities Fees and Charges (2019)	Provide for the imposition of a charge against the owners for the use and operation of the sewage treatment facility.
668	Painted Boat Waste Water Plant Capital Reserve Fund (2012)	Established a capital reserve fund.
669	Painted Boat Waste Water Plant Operating Reserve Fund (2012)	Established an operating reserve fund.

2. Description of Assets

The following sections outline the current state of the wastewater systems by providing answers to the following questions:

- What do we own?
- Where is it?

- What is its condition?
- What is its useful life?
- What is its value?

2.1. Treatment and Disposal Systems

Primary treatment of the influent takes place in individual septic tanks at each facility, owned and operated by the strata. Each tank's grey water is pumped to a common force main and terminates at the community wastewater treatment plant.

Secondary treatment of the wastewater takes place in an underground cast-in-place concrete tank with a series of divider walls forming individual treatment sections within. The top of the tank is a concrete with built-in ground level access lids. The restaurant wastewater is treated separately from the remainder of the facilities.

Wastewater enters the septic tanks where any remaining solids settle. Aeration occurs as aerated water is cascaded over honeycomb media. Effluent from the trickle filter is disinfected by UV prior to entering into the final clarifier and discharging to the drainfield.

The final pumps provide treated effluent to be sent to multiple fields, with restaurant flows directed to an auxiliary area separate from the other facilities. The fields provide effluent disposal through a combined 846 m of perforated drainage pipe.

2.2. Collection System

The SCRD is not responsible for the collection system infrastructure at the Painted Boat Resort wastewater local service area.

2.3. Asset Accessibility

There are no accessibility issues with the infrastructure at Painted Boat Resort.

2.4. Asset Condition

Wastewater treatment system condition was determined by staff based on several factors.

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- Previous or immanent failure of the system;
- Frequency of system repairs;
- Age of system; and
- Ability to regularly meet effluent quality regulations.

Based on these factors each system in the local service area was assigned a condition rating from excellent to poor. An excellent condition is assigned to systems in near new condition, good to systems with few minor defects, fair to systems with moderate defects or signs of aging, and poor to systems that cannot currently function as designed, or will soon cease functioning without repair, due to flow volumes, defects, or aging.

There have been no performance issues noted with the treatment and disposal systems. The treatment and disposal systems are in good condition.

2.5. Asset Replacement Value

It is expected that the treatment process and drainfield configuration that were installed 11 years ago will still be permitted once the systems are due for replacement.

Table 2 – Asset Replacement Value Summary

Asset Type	Replacement Cost (2018 \$)	Year Installed	Estimated Useful Life	Remaining Useful Life
Treatment System	\$ 477,442	2008	50	39
Drainfield (Primary)	\$ 269,201	2008	40	29
Drainfield (Auxiliary)	\$ 57,179	2008	40	29

3. Operations and Maintenance (O&M) Plan

Operations and maintenance (O&M) are the activities that ensure the wastewater systems are able to continue to function as designed throughout their EUL. These activities include routine inspections and readings, unforeseen repairs, effluent sampling, and ongoing condition assessments. User fees and parcel taxes are collected annually to fund these activities.

As discussed in the Wastewater Service Review, the current fees and taxes are combined and can be used to fund the operational expenditures for the year. The recommendation in the Wastewater Service Review is for user fees to provide

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sufficient revenue for operational expenditures and for parcel taxes to be invested in capital renewal and replacement.

3.1. Current O&M Fees

The users of the Painted Boat Resort wastewater local service are charged user fees of \$537.50 per year (including a 25% increase in user fees in 2019). There currently is no separate fee collected as a parcel tax.

3.2. Current O&M Budget

The budgeted and actual expenditures of the Painted Boat Resort wastewater local service from 2015 to 2018 are shown in Table 3.

Table 3 – Budgeted and Actual Operations and Maintenance Expenditures

Expenditures	2015	2016	2017	2018	Average
Budget	\$ 14,993.00	\$ 14,524.00	\$ 14,042.00	\$ 14,422.00	\$ 14,495.25
Actual	\$ 10,993.00	\$ 9,003.00	\$ 8,412.00	\$ 7,941.47	\$ 9,087.37
Variance	\$ 4,000.00	\$ 5,521.00	\$ 5,630.00	\$ 6,480.53	\$ 5,407.88

Overall, the operations budget decreased by 4% between 2015 and 2018. The actual expenditure decreased by 28% during the same period of time. The majority of the actual expenditure (56%) was to pay for staffing expenses of operational and administrative staff, with contracted services (29%) being the other significant expenditure.

3.3. Potential O&M Budget

The potential O&M budget was created based on an optimal level of service for the systems at Painted Boat Resort local service area. Similar to the current O&M budget, staff wages account for the majority of the potential annual O&M budget for Painted Boat Resort. The required weekly, monthly, quarterly, and annual tasks are primarily completed by a Utility Technician.

Significant expenses in the potential operating budget include:

- Staffing expenses, consisting of:
 - O&M staffing requirement;

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- Administration of the wastewater system by Utilities Services staff;
 - SCRD Administration Services contribution;
- Annual UV lamp replacement charges;
- B.C. Hydro utility charges; and
- Proportioned share of service vehicles, tools, and miscellaneous expenses.

With the inclusion of all ancillary charges, the potential operating budget for Painted Boat Resort wastewater local service is \$18,632.00. The potential user fee for the 34 users in this local service area is \$548.00, a 2% increase from 2019 rates. While there is nominal change in user fees, there is an overall increase to the level of service currently provided at this local service area. Without parcel taxes being collected, there is no longer revenue being contributed to reserves.

4. Capital Plan

Capital expenditure is required for the periodic renewal or replacement of wastewater systems or system components. A capital plan considers many of the topics already covered in this plan including asset replacement values and EULs, asset condition, and following a well-developed O&M plan.

The SCRD does not have a long-term capital funding plan in place for the wastewater infrastructure at Painted Boat Resort.

4.1. Reserve Balances

As of the end of 2018, there was \$1,729.92 in capital reserves and \$48,341.86 contributed to operating reserves. Under the existing method of revenue collection and use, these reserves could be combined to invest in capital renewal or replacement projects if required.

There is currently no requirement for Painted Boat Resort to have a set level, by either denomination or percentage, of reserves in place. Based on the current reserve balance and 2019 budget transfers, Painted Boat Resort's reserves are 6% of the estimated replacement value of the infrastructure.

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4.2. Potential Capital Budget

Budget models considering four different time frames (10, 20, 50, and 80 year periods) were prepared for consideration, each with varying impact on parcel tax and with different systems requiring replacement over the selected time frame. For each model two plans were prepared: a 10% parcel tax increase every five years, or a fixed parcel tax throughout the model time frame.

Each model factors in funding the full cost of the infrastructure requiring replacement within the life of the model. Any debt incurred during the timeframe of the model is paid off in full with interest and the model terminates with a reserve balance equal to 10% of the projected value of the infrastructure in the last year of the model.

The highlighted budget plans represent the shortest term in which all infrastructure (i.e. the treatment, disposal, and collection systems) will need to be replaced.

Table 4 – Potential Capital Budget Options Based on Model and Payment Method

Capital Budget	Model	Infrastructure Replaced	Payment Method	Total Revenue	Parcel Tax (Year 1)
Plan 1	80-Year	Treatment System (1) Drainfield (2)	Even Annual Contribution	\$ 8,287,200	\$ 3,047
Plan 2	80-Year	Treatment System (1) Drainfield (2)	10% Increase Every Five Years	\$ 11,861,613	\$ 1,941
Plan 3	50-Year	Treatment System (1) Drainfield (1)	Even Annual Contribution	\$ 3,476,500	\$ 2,045
Plan 4	50-Year	Treatment System (1) Drainfield (1)	10% Increase Every Five Years	\$ 4,020,215	\$ 1,484
Plan 5	20-Year	Treatment System (0) Drainfield (0)	Even Annual Contribution	\$ 140,400	\$ 206
Plan 6	20-Year	Treatment System (0) Drainfield (0)	10% Increase Every Five Years	\$ 143,639	\$ 182

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Capital Budget	Model	Infrastructure Replaced	Payment Method	Total Revenue	Parcel Tax (Year 1)
Plan 7	10-Year	Treatment System (0) Drainfield (0)	Even Annual Contribution	\$ 71,800	\$ 211
Plan 8	10-Year	Treatment System (0) Drainfield (0)	10% Increase Every Five Years	\$ 72,135	\$ 202

In addition to the replacement of the wastewater systems, other items that appear in the capital budget include:

- Replacement of the UV disinfection equipment; and
- Proportioned short-term debt payments for the purchase and replacement of two service vehicles.



Figure 2 – Wastewater Local Service 50-Year and 80-Year Capital Plans

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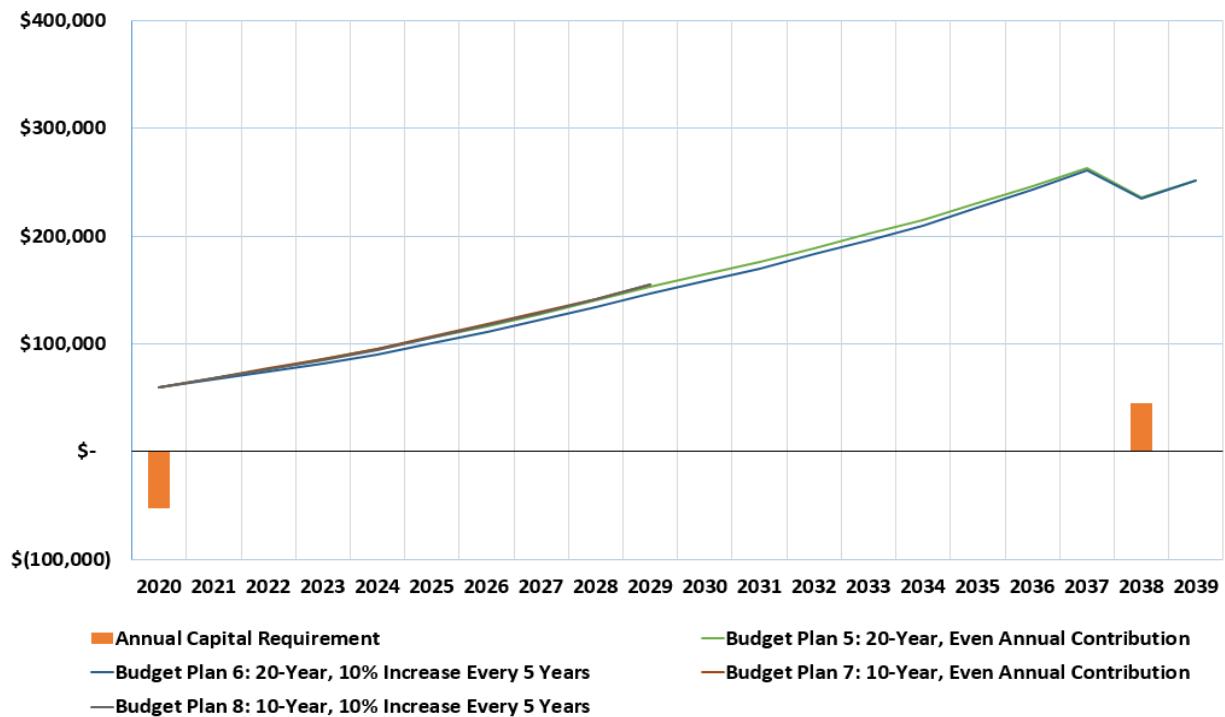


Figure 3 – Wastewater Local Service 10-Year and 20-Year Capital Plans

5. Additional Local Service Improvement Actions

There is no additional operational work required in the Painted Boat Resort wastewater local service area at this time.

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