CAPITAL REGIONAL DISTRICT

FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2022 to 2026

Service No.	3.798C Debt - Core Area Wastewater Capital	Carry Forward from 2021	2022	2023	2024	2025	2026	TOTAL
		2021						
	EXPENDITURE							
	Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Equipment	\$120,000	\$120,000	\$0	\$0	\$0	\$0	\$120,000
	Land	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Engineered Structures	\$26,575,000	\$36,168,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$67,868,100
	Vehicles	\$220,000	\$220,000	\$0	\$0	\$0	\$0	\$220,000
		\$26,915,000	\$36,508,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$74,708,100
	SOURCE OF FUNDS							
	Capital Funds on Hand	\$1,697,100	\$1,697,100	\$1,068,100	\$0	\$0	\$0	\$2,765,200
	Debenture Debt (New Debt Only)	\$10,225,000	\$17,515,000	\$6,800,000	\$11,150,000	\$17,350,000	\$1,500,000	\$48,015,000
	Equipment Replacement Fund	\$0	\$828,000	\$162,000	\$130,000	\$30,000	\$10,000	\$960,000
	Grants (Federal, Provincial)	\$14,992,900	\$14,992,900	\$0	\$0	\$0	\$0	\$14,992,900
	Donations / Third Party Funding	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Reserve Fund	\$0	\$1,475,000	\$0	\$0	\$0	\$0	\$1,475,000
		\$26,915,000	\$36,508,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$74,708,100

CAPITAL REGIONAL DISTRICT

Project Number

Project number format is "yy-##"

"yy" is the last two digits of the year the project is planned to start.

"##" is a numberical value. For example, 22-01 is a project planned to start in 2022.

For projects in previous capital plans, use the same project numbers previously assigned.

Capital Expenditure Type

Study - Expenditure for feasibility and business case report.

New - Expenditure for new asset only

Renewal - Expenditure upgrades an existing asset and extends the service ability or

enhances technology in delivering that service

Replacement - Expenditure replaces an existing asset

Capital Project Title

Input title of project. For example "Asset Name - Roof Replacement", "Main Water

Pipe Replacement".

Capital Project Description

Briefly describe project scope and service benefits.

For example: "Full Roof Replacement of a 40 year old roof above the swimming pool area; The new roofing system is built current energy standards, designed to minimize maintenance and have an expected service life of 35 years".

Debt = Debenture Debt (new debt only)

ERF = Equipment Replacement Fund

Grant = Grants (Federal, Provincial)

<u>Total Project Budget</u> Funding Source Codes

Provide the total project budget, even if it extends beyond the 5 years of this capital plan.

S - Engineering Structure

Cap = Capital Funds on Hand

Other = Donations / Third Party Funding Res = Reserve Fund

STLoan = Short Term Loans

WU - Water Utility

If there is more than one funding source, use additional rows for the project.

Carryforward from 2021

Input the carryforward amount frin tge 2021 capital plan that is remaining to be spent Forecast this spending in 2022 to 2026. Project Drivers

Maintain Level of Service = Project maintains existing or improved level of service.

Advance Board or Corporate Priority = Project is a Board or Corporate priority. **Emergency** = Project is required for health or safety reasons.

Cost Benefit = Economic benefit to the organization.

Other = Project is not driven by one of the other options provided.

Long-term Planning

Master Plan / Servicing Plan = Plan that identifies new assets required to meet future needs.

Asset Management Plan / Sustainable Service Delivery Plan = Integrated plan that identifies asset replacements based on level of service, criticality, condition,

risk, replacement costs as well as external impacts.

Replacement Plan = Plan that identifies asset replacements based primarily on asset age or asset material/type.

Condition Assessment = Assessment that identifies asset replacements based on asset condition.

Cost Estimate Class

Class A $(\pm 10$ -15%) = Estimate based on final drawings and specifications; used to evaluate tenders.

Class B (±15-25%) = Estimate based on investigations, studies or prelimminary design; used for budget planning.

Class C ($\pm 25-40\%$) = Estimate based on limited site information; used for program planning.

Class D (\pm 50%) = Estimate based on little/no site information; used for long-term planning.

Service #: 3.798C

Service Name: **Debt - Core Area Wastewater Capital**

Asset Class

B - Buildings

V - Vehicles

L - Land

Project List and Budget

	Capital Expenditure Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carryforward from 2021	2022	2023	2024	2025	2026	5 - Year Total
MCLOUGH	LIN WASTEWATER	TREATMENT PLANT											
		s being commissioned and should be fully operational by December 31, 2020 erational performance and/or health and safety issues that may become known	 This is a new facility and should not require any significant projects in the first several years, but some upgrades wn after the plant is in full operation. 										
16-01a	New	CAWTP	Wastewater Treatment Project (including WWTP, RTF, Conveyance)	\$462,000,000	S	Grant	\$14,992,900	\$14,992,900	\$0	\$0	\$0	\$0	\$14,992,900
16-01b	New	CAWTP	Wastewater Treatment Project (including WWTP, RTF, Conveyance)	\$101,100,000	S	Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16-01c	New	CAWTP	Wastewater Treatment Project (including WWTP, RTF, Conveyance)	\$211,900,000	S	Cap	\$1,357,100	\$1,357,100	\$1,068,100	\$0	\$0	\$0	\$2,425,200
20-01a	New	IT Capital Purchases and Plant Optimization	IT hardware (monitors, computers, printers, etc.), software licenses, telephones, valves, meters etc.	\$900,000	E	Cap	\$120,000	\$120,000	\$0	\$0	\$0	\$0	\$120,000
20-02a	New	New Fleet Purchases	9 new vehicles (3 EIC, 3 mechanical trades, 3 operations); 1 spider crane; 1 scissor lift; 1 portable hotsy	\$1,400,000	V	Cap	\$220,000	\$220,000	\$0	\$0	\$0	\$0	\$220,000
PUMP STA	TIONS												
21-01	Renewal	Lang Cove Electrical and Building Upgrades	Renewals based upon Delcan's 2013 condition assessments and revised inspections. Work includes electrical (replace PLC, SCADApack, communications), and building upgrades.	\$350,000	S	Res	\$0	\$350,000	\$0	\$0	\$0	\$0	\$350,000
21-02	Renewal	Marigold Electrical and Building Upgrades	Renewals are based upon Delcan's 2013 condition assessments and revised inspections. Work includes electrical (replace MCC, PLC, VFD's, 480v to 600v upgrade, etc), and building upgrades.	\$2,250,000	S	Debt	\$2,200,000	\$2,200,000	\$0	\$0	\$0	\$0	\$2,200,000
21-03	Renewal	Currie Major Electrical and Siesmic Upgrades	Renewals based upon Delcan's 2013 condition assessments and revised inspections. Work includes electrical (replace VFDs, PLC, SCADApack, communications), siesmic upgrades and driveway repairs.	\$2,300,000	S	Debt	\$0	\$400,000	\$0	\$1,900,000	\$0	\$0	\$2,300,000
21-04	Renewal	Craigflower Odour Control Upgrade	Increasing flows and off-gassing from the cortex drop are generating higher odours than expected. Imrpovements are required to mitigate odours and address health and safety concerns.	\$400,000	S	Debt	\$400,000	\$400,000	\$0	\$0	\$0	\$0	\$400,000
21-05	Replacement	Harling PS - Complete Replacement	Replacement of Harling Point PS is based on Delcan's 2013 condition assessment.	\$1,900,000	S	Debt	\$200,000	\$200,000	\$1,700,000	\$0	\$0	\$0	\$1,900,000
22-01	Renewal	Odour Control HVAC Testing and Balancing	Based upon KWL's 2018 condition assessment review, upgrades are required to several odour control facilities (ie. carbon scrubbers, bioxide injection, etc). In addition, HVAC testing & balancing and process narratives are required.	\$200,000	s	Debt	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
22-05	Replacement	Lang Cove Discharge Isolation Valves	Replace failed isolation valves on at the Lang Cove pump station.	\$400,000	S	ERF	\$0	\$400,000	\$0	\$0	\$0	\$0	\$400,000
24-01	Renewal	Trent PLC Upgrade	The PLC needs to be upgraded to meet new software standards.	\$250,000	S	Debt	\$0	\$0	\$0	\$250,000	\$0	\$0	\$250,000
24-02	Renewal	Hood Mechanical and Electrical Renewal	Upgrades are based upon Delcan's 2013 condition assessments and revised inspections. The work includes pump replacement, installation of a new valve chamber, RTU upgrade, and site improvements.	\$420,000	S	Debt	\$0	\$0	\$0	\$420,000	\$0	\$0	\$420,000
24-03	Renewal	Currie Minor Mechanical and Electrical Renewal	Upgrades are based upon Delcan's 2013 condition assessments and revised inspections. The work includes pump and valve replacement.	\$230,000	s	Debt	\$0	\$0	\$0	\$230,000	\$0	\$0	\$230,000
24-04	Renewal	Humber Electrical and Mechanical Renewal	Upgrades are based upon Delcan's 2013 condition assessments and revised inspections. The work includes pump and valve replacements, PLC/RTU upgrade and site improvements.	\$290,000	S	Debt	\$0	\$0	\$0	\$290,000	\$0	\$0	\$290,000
24-05	Renewal	Rutland Electrical and Mechanical Renewal	Upgrades are based upon Delcan's 2013 condition assessments and revised inspections. The work includes pump and valve replacements, PLC/RTU upgrade and site improvements.	\$290,000	s	Debt	\$0	\$0	\$0	\$290,000	\$0	\$0	\$290,000
24-06	Renewal	Penrhyn Electrical and Mechanical Renewal	Upgrades are based upon Delcan's 2013 condition assessments and revised inspections. The work includes electrical (replace PLC and MCC), mechanical (replace pumps and upgrade HVAC), and structural/building upgrades.	\$670,000	S	Debt	\$0	\$0	\$0	\$120,000	\$550,000	\$0	\$670,000
22-06	Replacement	Pump Station Equipment Replacement	Replacement of pump station equipment at various locations. Equipment to replace includes power generators, variable frequency drives, and electrical upgrades	\$560,000	s	ERF	\$0	\$228,000	\$162,000	\$130,000	\$30,000	\$10,000	\$560,000

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Service #:

Service Name: Debt - Core Area Wastewater Capital

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Project List and Budget

Project Number	Capital Expenditure Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carryforward from 2021	2022	2023	2024	2025	2026	5 - Year Total
GRAVITY SEV	WERS AND MANH	IOLES											
21-06	Renewal	Shoreline Trunk Sewer Upgrade	The hydraulic model and capacity assessment of the system by KWL in 2018-19, has identified that the Shoreline Trunk must be twinned to prevent overflows into Portage Inlet.	\$2,400,000	S	Debt	\$200,000	\$200,000	\$2,000,000	\$0	\$0	\$0	\$2,200,000
21-07	New	Western Trunk Sewer Twinning	The hydraulic model and capacity assessment of the system by KWL in 2018-19, has identified that the Western Trunk Sewer must be twinned from Aldeane to Craigflower PS to prevent overflows upstream of Parson's siphon. Complete an options study in 2022 and detailed design/construction between 2026-2030.	\$15,000,000	S	Debt	\$400,000	\$400,000	\$0	\$0	\$0	\$0	\$400,000
21-08	Replacement	Boundary Odour Control Replacement	The Boundary UV odour control unit has failed. Based on the 2018 KWL Odour Control Assessment review, a new carbon scrubber located closer to Gorge Siphon inlet chamber maybe more effective.	\$400,000	S	Res	\$0	\$400,000	\$0	\$0	\$0	\$0	\$400,000
21-09	Renewal	Bowker Sewer Rehabilitation	Based on results of CCTV inspection about 1,685m of sewer from North Dairy to Richmond and 1,860m from Foul Bay to Currie PS needs to be relined.	\$8,600,000	S	Debt	\$4,175,000	\$8,475,000	\$0	\$0	\$0	\$0	\$8,475,000
21-10	Renewal	Sewer Cleaning and Inspection	Regional sewers should be cleaned and inspected on a 5-year cycle. The trunk sewers from Prospect to Currie PS and from Bushby to Clover PS will be inspected in 2022. The 5-year cycle will recommence in 2024.	\$600,000	s	Debt	\$75,000	\$75,000	\$0	\$150,000	\$150,000	\$150,000	\$525,000
21-11	Renewal	Manhole Repairs and Replacement	Based upon CCTV and staff inspections on manholes, high priority repairs and replacement of deteriorated MH's.	\$1,500,000	S	Debt	\$500,000	\$500,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,500,000
23-01	Renewal	Cecelia Ravine Pipe Protection	Based on geotechnical review, a section of the exposed NWT in Cecelia Ravine should be covered & protected from falling rocks upslope from the pipe.	\$300,000	s	Debt	\$0	\$0	\$300,000	\$0	\$0	\$0	\$300,000
PRESSURE PI	IPES AND APPURT	TENANCES											
21-12	Renewal	Gorge Siphon Inlet Chamber Upgrade	The control gates are siezed on this chamber and they need to be replaced so that the individual siphons can be isolated or activated.	\$500,000	S	Res	\$0	\$475,000	\$0	\$0	\$0	\$0	\$475,000
21-13	New	Craigflower Forcemain Twinning	The hydraulic model and capacity assessment of the system by KWL in 2018-19, has identified that the Craigflower Forcemain must be twinned to prevent overflows into Portage Inlet.	\$9,600,000	S	Debt	\$300,000	\$300,000	\$300,000	\$4,500,000	\$4,500,000	\$0	\$9,600,000
21-14	Renewal	Marigold Siphon Assessment	The Marigold Siphon section is a pressurized (pre-stressed concrete pipe), nearing 50 years old, and has never been assessed. Assessment and eventual replacement of the pipe is required.	\$8,300,000	S	Debt	\$400,000	\$400,000	\$0	\$0	\$7,900,000	\$0	\$8,300,000
22-02	Renewal	Gorge and Harriet Siphon Assessment	The Gorge and Harriet Siphons are ductile iron pipe, nearing 50 years old, and have never been flushed or assessed. Flushing and assessment of the pipe is required.	\$250,000	S	Res	\$0	\$250,000	\$0	\$0	\$0	\$0	\$250,000
23-02	Renewal	Penrhyn Siphon Assessment	The Penrhyn Siphon is PVC pipe, and has never been flushed or assessed. Flushing and assessment of the pipe is required.	\$400,000	S	Debt	\$0	\$0	\$400,000	\$0	\$0	\$0	\$400,000
24-07	Renewal	Parsons Siphon Assessment	The Parsons Siphons are PVC and steel pipe, and have never been flushed or assessed. Flushing and assessment of the pipe is required.	\$400,000	S	Debt	\$0	\$0	\$0	\$400,000	\$0	\$0	\$400,000
25-01		Admirals Siphon Assessment	The Admirals Siphon is PVC pipe, and has never been flushed or assessed. Flushing and assessment of the pipe is required.	\$400,000	S	Debt	\$0	\$0	\$0	\$0	\$400,000	\$0	\$400,000
LOW METER	RS												
21-15		Parsons Meter Replacement	Based on KWL's 2018-19 Flow Meter Audit review, Parsons meter is to be replaced with two doppler meters and one magmeter on Wilfert PS (includes install of meters, kiosk and conduit).	\$250,000	S	Debt	\$225,000	\$225,000	\$0	\$0	\$0	\$0	\$225,000
21-16	New	Gorge & Chapman Meter	Based on KWL's 2018-19 Flow Meter Audit review, KWL recommended a new flodar meter to measure the unmetered	\$130,000	S	Debt	\$130,000	\$130,000	\$0	\$0	\$0	\$0	\$130,000
21-17	New	Esquimalt Nation Meter	Based on KWL's 2018-19 Flow Meter Audit review, KWL recommended a new custom weir, kisok and conduit to measure the unmetered Esquimalt Nation catchment.	\$200,000	S	Debt	\$200,000	\$200,000	\$0	\$0	\$0	\$0	\$200,000
21-18	New	Shoreline Trunk Meter	Based on KWL's 2018-19 Flow Meter Audit review, KWL recommended a new flodar meter to measure the unmetered Shoreline catchment. Includes installation of FloDar meter, kiosk and conduit.	\$240,000	S	Debt	\$50,000	\$240,000	\$0	\$0	\$0	\$0	\$240,000
21-19	New	Selkirk Meter	Based on KWL's 2018-19 Flow Meter Audit review, KWL recommended a new flume meter to measure the unmetered Selkirk catchment (install weir, kiosk and conduit).	\$190,000	S	Debt	\$190,000	\$190,000	\$0	\$0	\$0	\$0	\$190,000
21-20	Replacement	Haultain, Hereward, Langford Replacement	Based on KWL's 2018-19 Flow Meter Audit review, ultrasonic meters are to be replaced with new LUT-440 models.	\$40,000	S	Debt	\$40,000	\$40,000	\$0	\$0	\$0	\$0	\$40,000
21-21	Replacement	Penrhyn Meter	Based on KWL's 2018-19 Flow Meter Audit review, the ADFM insertion probe meter is damaged and needs to be replaced.	\$90,000	S	Debt	\$90,000	\$90,000	\$0	\$0	\$0	\$0	\$90,000

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Service #:

Service Name: Debt - Core Area Wastewater Capital

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Project List and Budget

Project Lis	st and Budget												
Project Number	Capital Expenditure Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carryforward from 2021	2022	2023	2024	2025	2026	5 - Year Total
GENERAL													
21-22	Study	Asset Management Plan Update	Previous condition assessment studies will be updated and incorporated into a long-term asset management plan to meet expected level-of-service requirements.	\$250,000	S	Debt	\$250,000	\$250,000	\$0	\$0	\$0	\$0	\$250,000
21-23	Study	DCC Program Development	With the completion of CAWTP and amendment of the Service Establishment Bylaw, it was noted that a DCC Program would be established to fund future wastewater projects related to growth. This project is to create the program, consult with stakeholders and prepare a new DCC bylaw.	\$400,000	S	Debt	\$100,000	\$200,000	\$0	\$0	\$0	\$0	\$200,000
21-24	Renewal	Record Drawing and Wastewater Agreement Updates	The old as-built drawings, connection points and wastewater agreements with the contributing municipalities has not been updated in many years. Updates are required to reflect changes in the system, identify clear demarcation points, and reflect updates in the LWMP.	\$600,000	S	Debt	\$50,000	\$150,000	\$100,000	\$100,000	\$100,000	\$100,000	\$550,000
21-25	Renewal	SCADA and Radio Assessment	Majority of the radio and SCADA equipment are nearing end of life, technological advances do not allow for straight replacements, funding is required for assessments of existing equipment and site requirements. Replacement will happen over many years commencing in 2022.	\$3,150,000	S	Debt	\$50,000	\$800,000	\$750,000	\$750,000	\$750,000	\$0	\$3,050,000
22-03	Renewal	Acquisition of Outstanding Right-of-Ways	Some of the infrastructure is located on privately owned land that do not have right-of-ways. A plan is being developed to acquire SRW's for all infrastructure over time. Initial spending requires a study and plan prior to acquisition.	\$1,200,000	S	Debt	\$0	\$200,000	\$0	\$0	\$1,000,000	\$0	\$1,200,000
21-26	Replacement	Annual Provisional Emergency Repairs	Unforeseen and unplanned emergency repairs can occur which require immediate attention.	\$5,000,000	S	Debt	\$0	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000
22-04	New	Microwave Radio Upgrades	To provide a high bandwidth communications backbone to the CAWWT system, a microwave communications system will be installed.	\$200,000	s	ERF	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
OUTFALLS													
24-08	Renewal	Clover Point Outfall Retrofit	The existing outfall will see a significant reduction in usage once the Clover Point Pump Station is commissioned and wastewater flows up to 3 times ADWF are redirected to the McLoughlin WWTP. As a result, the existing outfall will need to be assessed for best operational and maintenance practices based on expected limited use instead of current continuous use.	\$500,000	S	Debt	\$0	\$0	\$0	\$500,000	\$0	\$0	\$500,000
25-02	Renewal	Macaulay Point Outfall Retrofit	A section of coating the emergency short outfall has failed and the pipe is corroding, and the long outfall needs to be modified to suit reduced usage. This project is to repair the coating, provide shoreline protection, and modify the deep outfall.	\$750,000	S	Debt	\$0	\$0	\$0	\$0	\$750,000	\$0	\$750,000
RESIDUAL S													
21-29	Renewal	Quonset removal	Demo old storage facility	\$100,000	S	Debt	\$0	\$50,000	\$0	\$0	\$0	\$0	\$50,000
		1	GRAND TOTAL	\$849,750,000			\$26,915,000	\$36,508,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$74,708,100

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