

CAPITAL REGIONAL DISTRICT

2020 BUDGET

Regional Water Supply

COMMISSION REVIEW

OCTOBER 2019

DEFINITION:

To finance, install, operate and maintain a water supply local service in the Capital Regional District, as per the Water Supply Local Service Establishment Bylaw No. 2537.

The establishment and operation of a Regional Water Supply Commission is done by Bylaw No. 2539.

SERVICE DESCRIPTION:

Regional Water Supply is responsible for the water supply, treatment and transmission system for the Greater Victoria region, providing wholesale water to municipalities that operate municipal distribution systems. The service administration and operation is provided by the Integrated Water Services Department.

PARTICIPATION:

City of Victoria
District of Oak Bay
District of Saanich
Township of Esquimalt
District of Central Saanich

Town of Sidney
District of North Saanich
Town of View Royal
City of Colwood
City of Langford

District of Metchosin
District of Sooke
Juan de Fuca Electoral Area
District of Highlands

MAXIMUM LEVY:

No stated limit in establishment bylaw and no ability to requisition.

MAXIMUM CAPITAL DEBT:

Authorized:	\$137,700,000 Pre - (Consolidated MFA Loan Authorizations - Regional Water Supply Water Works Facilities)
Borrowed:	\$91,400,000 Pre - (Consolidated amounts borrowed - Regional Water Supply Water Works Facilities)
Expired:	\$46,300,000
Authorized:	\$60,000,000 (MFA Bylaw No. 3451 - Regional Water Supply Land Acquisition)
Borrowed:	\$60,000,000 (MFA Bylaw No. 3451 - Regional Water Supply Land Acquisition)
Authorized:	\$12,500,000 2014 - (MFA Bylaw No. 3902 - Regional Water Supply Water Works Facilities)
Borrowed:	\$9,500,000
Expired:	\$3,000,000

FUNDING:

Costs are recovered through the sale of bulk water.

Rate Base for 2020 Revenue Year

	2018 <u>Application</u>	2019 <u>Application</u>	End of 2019 <u>for '20 Applic.</u>	<u>Change</u>	
Wholesale System					
Physical Plant	\$ 226,180,350	\$ 232,755,867	\$ 231,437,695	\$ (1,318,172)	Note 1
Construction Work In Progress	9,205,888	4,667,513	6,285,937	1,618,424	Note 1
Cash Working Capital	1,782,018	1,840,531	1,991,738	151,207	
Inventory	<u>225,000</u>	<u>225,000</u>	<u>225,000</u>	<u>-</u>	
Total Wholesale Rate Base	\$ 237,393,256	\$ 239,488,911	\$ 239,940,370	\$ 451,459	

Note 1: Refer to the Schedule of Change in Physical Plant & work in Progress for details.

Revenue Requirements for 2020 Year

	2018 <u>Application</u>	2019 <u>Application</u>	2020 <u>Application</u>	<u>Change</u>	
Wholesale					
Operations & maintenance	\$ 14,454,145	\$ 14,928,749	\$ 16,155,207	\$ 1,226,458	
Depreciation	6,835,514	6,207,713	6,243,311	\$ 35,598	
Return on rate base	<u>9,190,400</u>	<u>10,948,000</u>	<u>11,626,400</u>	<u>\$ 678,400</u>	Note 1
Subtotal of above	\$ 30,480,059	\$ 32,084,462	\$ 34,024,918	\$ 1,940,456	
Non-rate revenue including unaccounted water revenue	<u>(582,100)</u>	<u>(582,060)</u>	<u>(582,060)</u>	<u>\$ -</u>	
Total wholesale	\$ 29,897,959	\$ 31,502,402	\$ 33,442,858	\$ 1,940,456	

Note 1: Return on rate base is calculated with reference to the long term Canada bond rate & the average debt rate.

Schedule of Change in Physical Plant & Work In Progress

Wholesale

Projected Asset Additions	Projected Assets Capitalized
Japan Gulch Treatment Plant Upgrades	\$ 8,938,307
Lubbe Dam Safety Improvements	3,161,583
Dam Actuators	338,280
Goldream River Bridge Replacement	300,000
Major Main Repairs	293,100
Dam Improvements	200,000
Meter Replacement	197,036
Stelly's Pump Station Assessment	183,704
Water Supply Eqpt Upgrades	160,000
Forrest Fuel Management Roads	150,000
Sooke Spillway Gate Standby Power	150,000
Watershed Security Enhancements	137,000
Leech River Restoration	108,986
SCDA Repairs and Equipment Replacement	100,000
Sooke Dam Safety Improvements	99,690
SRR Disinfection Facility component upgrades	98,377
Leech and Cragg River Stability Assesment	90,000
Computer upgrades	85,000
Transmission System Component Replacement	80,000
Leech Tunnel Intake Stop Log Replacement	75,000
Building Modification	60,000
Main Lab Equipment Replacement	59,856
Sooke Intake Screens Condition Assessment/Replacement	57,659
Wildlife Habitat Assessment	55,832
Humpback Overflow Channel Assessment	50,583
Other Projects (26 minor projects under \$50k)	663,675
Total projected assets capitalized	<u>\$ 15,893,668</u>
Less: current years depreciation	(5,716,491)
Less: change in prior year forecast addition estimates, & disposals.	(11,495,349)
Change in Physical Plant	<u><u>\$ (1,318,172)</u></u>

Projected Construction Work In Progress (CWIP)

Sooke Intake Screens Condition Assessment/Replacement	\$ 1,936,485
Sooke Dam Safety Improvements	801,384
Post Disaster Emergency Water Supply	602,847
Meter Replacement	436,488
Weeks Main Road Upgrade	300,000
Leech River Hydromet	270,000
Dam Safety Review	250,711
Japan Gulch Treatment Plant Upgrades	200,000
Strategic Asset Management Plan	138,073
Water Quality Main Lab Renovation	100,000
Fish Stream Assessments	85,138
Watershed Security Enhancements	78,665
Critical Equip Storage Building	75,000
Large Equipment Storage	75,000
Wildlife Habitat Assessment	75,000
Transmission system component upgrades	73,443
Asset Reconciliation/Transfer agreement study	72,708
SCDA Repairs and Equipment Replacement	69,421
Weeks Lake Pit Assessment	65,000
Water Quality Database Upgrade	52,022
Other Projects (21 minor projects under \$50k)	528,552
Projected CWIP	<u>\$ 6,285,937</u>
Less Prior years projected CWIP	(4,667,513)
Change in CWIP	<u><u>\$ 1,618,424</u></u>

Change in Budget 2019 to 2020
Service: 2.670 Regional Water Supply

	Total Expenditure	Comments
2019 Budget	32,111,512	
Change in Labour:		
Labour charges	403,220	Labour charges (Salaries and overhead)
Additional ongoing labour charges:	90,000	10a-2 Water Infrastructure Resilience
	180,000	10a-2 Water Infrastructure Resilience
	23,000	7a-1 Regional Coordination of Emergency Services
Total Change in Labour	<u>696,220</u>	
Other Changes:		
Transfers to Capital Funds	1,210,141	
Principal & Interest Payments	(492,717)	
One-time budget items	25,000	NSERC funding
One-time budget items	150,000	10d-3 Watershed Monitoring
Consultants	75,000	10a-2 Water Infrastructure Resilience
Agriculture Water Rate Funding	250,000	
Other	<u>30,242</u>	Minor budget changes
Total Other Changes	<u>1,247,666</u>	
2020 Budget	<u>34,055,398</u>	

Overall 2019 Budget Performance

(expected variance to budget and surplus treatment)

Revenue has increased by \$799,000 (2.5%) over budget due to higher than budgeted water sales. This additional revenue will partially be used to offset one time overages on operating costs associated with the Lubbe Dam project. The surplus was further increased by a 4.0% savings on interest expense from the refinancing of two loans (in November 2018 and June 2019). The net surplus of \$880,000 will be transferred to the services' Water Capital Fund.

2020 Demand Estimate

Wholesale Demand

Years	Actual Demand cu.metre	Budgeted Demand cu.metre
2016	47,602,000	43,152,000
2017	46,515,000	45,000,000
2018	48,300,036	45,000,000
2019	48,000,000*	46,500,000

2020 Demand Estimate

48,000,000

** Projected consumption for 2019*

Summary of Wholesale Water Rates

	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>Change</u>
Wholesale water rate						
Unit cost per cu.m.	\$0.6375	\$0.6375	\$0.6644	\$0.6775	\$0.6968	\$0.0193

Wholesale Water Rate Increase Impact on Residential Water Bill

Average Annual Consumption : 235.0 cubic metres

<u>Charge for Twelve Months Consumption</u>		<u>Annual Charge</u>	<u>2020 Annual Change \$</u>
Average Consumption	2019	\$ 159.21	
	2020	\$ 163.75	\$ 4.54
Half Average Consumption	2019	\$ 79.61	
	2020	\$ 81.87	\$ 2.27
Twice Average Consumption	2019	\$ 318.43	
	2020	\$ 327.50	\$ 9.07

CAPITAL REGIONAL DISTRICT

Program Group: CRD-Regional Water Supply

SUMMARY

Program Group: CRD-Regional Water Supply	2020 BUDGET REQUEST						FUTURE PROJECTIONS			
	2019 BOARD BUDGET 2	2019 ESTIMATED ACTUAL 3	2020 CORE BUDGET 4	2020 ONGOING 5	2020 ONE-TIME 6	TOTAL (COL 4, 5 & 6) 7	2021	2022	2023	2024
							8	9	10	11
SUMMARY	1									
<u>GENERAL PROGRAM EXPENDITURES:</u>										
WATERSHED PROTECTION	5,218,523	4,913,925	5,283,876	-	175,000	5,458,876	5,425,733	5,544,287	5,703,178	5,828,442
WATER MANAGEMENT	4,592,686	5,222,866	4,855,519	368,000	-	5,223,519	5,314,050	5,428,350	5,546,588	5,666,918
WATER QUALITY	1,530,548	1,548,364	1,609,091	2,500	-	1,611,591	1,652,301	1,664,579	1,702,594	1,736,433
CROSS CONNECTION	729,968	720,823	744,787	-	-	744,787	761,122	777,813	794,874	812,309
DEMAND MANAGEMENT	797,794	724,183	813,710	-	-	813,710	831,468	849,438	867,908	886,802
INFRASTRUCTURE ENGINEERING	486,260	441,400	494,110	-	-	494,110	528,485	540,113	551,993	564,136
FLEET OPERATION & MAINTENANCE	(274,302)	(274,350)	(299,294)	-	-	(299,294)	(305,879)	(312,607)	(319,485)	(326,513)
CUSTOMER TECHNICAL SERVICES & GM SUPPORT *	597,267	478,364	607,908	-	-	607,908	621,113	629,644	643,340	657,301
TOTAL OPERATING EXPENDITURES	13,678,744	13,775,575	14,109,706	370,500	175,000	14,655,206	14,828,393	15,121,617	15,490,990	15,825,828
Percentage increase over prior year's board budget			3.15%			7.14%	1.18%	1.98%	2.44%	2.16%
AGRICULTURAL WATER RATE FUNDING	1,250,000	1,450,000	1,500,000	-	-	1,500,000	1,550,000	1,600,000	1,650,000	1,750,000
			20.00%			20.00%	3.33%	3.23%	3.13%	6.06%
<u>CAPITAL EXPENDITURES & TRANSFERS</u>										
TRANSFER TO WATER CAPITAL FUND	7,895,496	8,779,350	9,107,214	-	-	9,107,214	9,800,000	10,300,000	11,300,000	16,600,000
TRANSFER TO EQUIPMENT REPLACEMENT FUND	274,301	274,301	299,294	-	-	299,294	305,878	312,607	319,484	326,513
TRANSFER TO DEBT RESERVE FUND	57,050	30,480	30,480	-	-	30,480	39,480	100,480	30,480	111,480
TOTAL CAPITAL EXPENDITURES & TRANSFERS	8,226,847	9,084,131	9,436,988	-	-	9,436,988	10,145,358	10,713,087	11,649,964	17,037,993
<u>DEBT</u>										
DEBT - INTEREST AND PRINCIPAL	8,955,921	8,601,254	8,463,204	-	-	8,463,204	8,484,204	8,706,477	8,276,713	3,499,130
TOTAL DEBT EXPENDITURES	8,955,921	8,601,254	8,463,204	-	-	8,463,204	8,484,204	8,706,477	8,276,713	3,499,130
<u>DEFICIT TRANSFERRED TO FOLLOWING YR</u>										
TRANSFER TO FOLLOWING YEAR DEFICIT CARRY FORWARD										
TOTAL EXPENDITURES	32,111,512	32,910,960	33,509,898	370,500	175,000	34,055,398	35,007,956	36,141,182	37,067,668	38,112,950
<u>SOURCES OF FUNDING</u>										
REVENUE - SALES	(31,502,402)	(32,300,000)	(32,897,358)	(370,500)	(175,000)	(33,442,858)	(34,395,416)	(35,528,642)	(36,455,128)	(37,500,410)
REVENUE - OTHER	(609,110)	(610,960)	(612,540)	-	-	(612,540)	(612,540)	(612,540)	(612,540)	(612,540)
TOTAL SOURCE OF FUNDING FROM OPERATIONS	(32,111,512)	(32,910,960)	(33,509,898)	(370,500)	(175,000)	(34,055,398)	(35,007,956)	(36,141,182)	(37,067,668)	(38,112,950)
TRANSFER FROM PRIOR YEAR	-	-	-	-	-	-	-	-	-	-
TRANSFER TO FOLLOWING YEAR SURPLUS CARRY FORWARD										
TOTAL SOURCES OF FUNDING	(32,111,512)	(32,910,960)	(33,509,898)	(370,500)	(175,000)	(34,055,398)	(35,007,956)	(36,141,182)	(37,067,668)	(38,112,950)
Percentage increase over prior year's board budget			4.35%			6.05%	2.80%	3.24%	2.56%	2.82%

CAPITAL REGIONAL DISTRICT
FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2020 to 2024

SCHEDULE B

Service No.	2.670 Regional Water Supply	Carry Forward from 2019	2020	2021	2022	2023	2024	TOTAL
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EXPENDITURE

Buildings	B	\$225,000	\$590,000	\$1,700,000	\$2,000,000	\$50,000	\$0	\$4,340,000
Equipment	E	\$575,000	\$2,655,000	\$2,050,000	\$6,025,000	\$1,025,000	\$805,000	\$12,560,000
Land	L	\$205,000	\$1,245,000	\$750,000	\$530,000	\$570,000	\$400,000	\$3,495,000
Engineered Structures	S	\$5,269,000	\$14,709,000	\$6,610,000	\$7,240,000	\$7,065,000	\$18,315,000	\$53,939,000
Vehicles	V	\$0	\$492,000	\$185,000	\$150,000	\$50,000	\$250,000	\$1,127,000
		\$6,274,000	\$19,691,000	\$11,295,000	\$15,945,000	\$8,760,000	\$19,770,000	\$75,461,000

SOURCE OF FUNDS

Capital Funds on Hand	Cap	\$6,274,000	\$19,324,000	\$10,210,000	\$8,795,000	\$8,710,000	\$11,420,000	\$58,459,000
Debenture Debt (New Debt Only)	Debt	\$0	\$0	\$900,000	\$7,000,000	\$0	\$8,100,000	\$16,000,000
Equipment Replacement Fund	ERF	\$0	\$367,000	\$185,000	\$150,000	\$50,000	\$250,000	\$1,002,000
Grants (Federal, Provincial)	Grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Donations / Third Party Funding	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Fund	Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Short Term Loans	STLoan	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$6,274,000	\$19,691,000	\$11,295,000	\$15,945,000	\$8,760,000	\$19,770,000	\$75,461,000

CAPITAL REGIONAL DISTRICT
FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2020 to 2024

SCHEDULE B

Service No.	2.670/2.680							
Regional Water Supply & JDF Water Distribution Combo	Carry Forward from 2019	2020	2021	2022	2023	2024	TOTAL	

EXPENDITURE

Buildings	B	\$70,000	\$190,000	\$80,000	\$80,000	\$80,000	\$80,000	\$510,000
Equipment	E	\$450,000	\$1,315,000	\$655,000	\$365,000	\$365,000	\$365,000	\$3,065,000
Land	L	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Engineered Structures	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Vehicles	V	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$520,000	\$1,505,000	\$735,000	\$445,000	\$445,000	\$445,000	\$3,575,000

SOURCE OF FUNDS

Capital Funds on Hand	Cap	\$520,000	\$1,505,000	\$735,000	\$445,000	\$445,000	\$445,000	\$3,575,000
Debenture Debt (New Debt Only)	Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment Replacement Fund	ERF	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Grants (Federal, Provincial)	Grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Donations / Third Party Funding	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Fund	Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		\$520,000	\$1,505,000	\$735,000	\$445,000	\$445,000	\$445,000	\$3,575,000

CAPITAL REGIONAL DISTRICT CAPITAL PLAN

CAPITAL BUDGET FORM
2020 & Forecast 2021 to 2024

Service #:

2.670

Service Name:

Regional Water Supply

Capital Exp. 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

Funding Source Codes

Debt = Debenture Debt (new debt only)

ERF = Equipment Replacement Fund

Grant = Grants (Federal, Provincial)

Cap = Capital Funds on Hand

Other = Donations / Third Party Funding

Funding Source Codes (cont)

Res = Reserve Fund

STLoan = Short Term Loans

WU = Water Utility

Asset Class

L - Land

S - Engineering Structure

B - Buildings

V - Vehicles

E - Equipment

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".

Total Project Budget

This column represents the total project budget not only within the 5-year window.

FIVE YEAR FINANCIAL PLAN

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carry Forward from 2019	2020	2021	2022	2023	2024	5 - Year Total
WATERSHED PROTECTION													
Planning													
17-01	Renewal	Repair of Historic Goldstream Powerhouse Building	Repairs of historic Goldstream Powerhouse building	\$90,000	B	WU	\$0	\$0	\$0	\$0	\$50,000	\$0	\$50,000
17-04	New	Water Supply Area - Fish Stream Assessments	Inventory and assessment of fish, fish habitat, and stream channel stability in priority streams in the GVWSA.	\$325,000	L	WU	\$0	\$100,000	\$0	\$0	\$0	\$0	\$100,000
18-01	New	Post-Wildfire Debris Flow Modelling	Site specific modelling of the potential impact to Sooke Lake Reservoir and infrastructure of a significant wildfire in the Sooke WSA.	\$150,000	L	WU	\$100,000	\$100,000	\$0	\$0	\$0	\$0	\$100,000
18-10	Study	Species-at-Risk Wildlife Habitat	An assessment (office and field) and plan for managing wildlife habitat, in particular species-at-risk habitat, in the GVWSA.	\$135,000	L	WU	\$0	\$50,000	\$25,000	\$0	\$0	\$0	\$75,000
19-30	Study	Leech WSA Lakes/Tributaries Assessment	An assessment of the physical, chemical and biological parameters of the Leech WSA source waterbodies.	\$75,000	L	WU	\$25,000	\$75,000	\$0	\$0	\$0	\$0	\$75,000
20-05	Renewal	Leech WSA Terrestrial Ecosystem Mapping & Wetland Classification/Mapping	Classification and mapping of terrestrial ecosystems and wetlands and integration with Sooke and Goldstream data.	\$180,000	L	WU	\$0	\$0	\$180,000	\$0	\$0	\$0	\$180,000
20-06	Study	Addressing mining in Leech WSA (impacts, agreements)	Funding to support work to reduce the impact of mining claims in the Leech WSA	\$30,000	L	WU	-	\$15,000	\$15,000	\$0	\$0	\$0	\$30,000
20-27	Study	GVWSA Forest Resilience - wildfire/forest modelling and forest management field trials	Modelling forest and wildfire risk under climate change scenarios & forest/fuel management field trials.	\$260,000	L	WU	-	\$55,000	\$85,000	\$70,000	\$50,000	\$0	\$260,000
20-28	Study	GVWSA Forest Resilience - Assessments of forest health and resilience	Field assesments to better understand current forest health and resilience.	\$230,000	L	WU	-	\$75,000	\$95,000	\$60,000	\$0	\$0	\$230,000
22-03	Study	GVWSA Land Exchange/Acquisition	Land surveys, appraisals to support decisions regarding land exchange to increase catchment area or buffer water supply areas.	\$300,000	L	WU	-	\$0	\$0	\$100,000	\$100,000	\$100,000	\$300,000
23-02	Renewal	GVWSA LiDAR Mapping	Detailed contour mapping of ground, vegetation and tree cover (3D scanning)	\$120,000	L	WU	\$0	\$0	\$0	\$0	\$120,000	\$0	\$120,000

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carry Forward from 2019	2020	2021	2022	2023	2024	5 - Year Total
Capital													
09-01	Renewal	Leech River Watershed Restoration	A 17 year project to restore the Leech WSA lands for water supply.	\$5,756,000	L	WU	\$0	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,000,000
16-01	Renewal	Replace Gatehouse at Goldstream Entrance	The security/first aid gatehouse is past end of life and is to be replaced with more effective security infrastructure.	\$195,000	B	WU	\$140,000	\$190,000	\$0	\$0	\$0	\$0	\$190,000
17-09	Renewal	Goldstream Gate Upgrade	The main entrance gate in Goldstream is past end of life and requires replacement with lifting in/out gates.	\$75,000	S	WU	\$25,000	\$25,000	\$0	\$0	\$0	\$0	\$25,000
16-06	Renewal	Goldstream IWS Field Office	Renewal of Water Quality field office, lab and equipment and supplies storage and Watershed Protection office, training, emergency response, storage and interpretation space at Goldstream entrance, replacing temporary ATCO trailers.	\$4,050,000	B	WU	\$0	\$300,000	\$1,700,000	\$2,000,000	\$0	\$0	\$4,000,000
17-02	New	Leech River HydroMet System	Installation of a network of hydrometeorological stations to collect water quantity and quality information for the Leech WSA.	\$480,000	E	WU	\$0	\$100,000	\$25,000	\$0	\$0	\$0	\$125,000
17-06	New	Weeks Lake Area Environmental Assessment and Remediation	Assessment and remediation of the Weeks Lake gravel pit (lead from firearms) and Weeks Lake (metals and hydrocarbons from dumping).	\$365,000	L	WU	\$80,000	\$275,000	\$50,000	\$0	\$0	\$0	\$325,000
17-07	Renewal	Weeks Main Road Upgrade	Road upgrade and new construction to re-route Weeks Main and bring the road to regulatory standard.	\$175,000	S	WU	\$25,000	\$25,000	\$0	\$0	\$0	\$0	\$25,000
18-05	New	GVWSA Forest Fuel Management	Implementation of forest fuel management in strategic locations for wildfire risk management in the GVWSA.	\$650,000	L	WU	\$0	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$500,000
19-02	New	Whiskey Creek Bridge Replacement (Sooke WSA)	Replacement of the existing undersized bridge with a longer and higher concrete structure.	\$300,000	S	WU	\$0	\$0	\$0	\$300,000	\$0	\$0	\$300,000
19-19	New	Hydromet Upgrades Sooke and Goldstream	Install additional hydrology monitoring sites on Sooke Lake Reservoir inflow streams and increase instrumentation on meteorological stations in Sooke and Goldstream watersheds.	\$170,000	E	WU	\$0	\$130,000	\$0	\$0	\$0	\$0	\$130,000
20-01	Replacement	Kapoor Main Mile 1 Bridge and Asphalt Upgrade	Replacement of the existing undersized culvert with a large bridge as well as nearby asphalt repair or replacement.	\$450,000	S	WU	\$0	\$0	\$450,000	\$0	\$0	\$0	\$450,000
21-01	New	31N Bridge to Replace Undersized Culvert (Goldstream WSA)	Replacement of the existing undersized and failing culvert with a bridge structure.	\$200,000	S	WU	\$0	\$0	\$200,000	\$0	\$0	\$0	\$200,000
18-11	New	Large Equipment Storage (Field Operations Centre)	Two additional bays are to be added to the existing fire/spill equipment warehouse at the FOC to shelter large water supply infrastructure equipment.	\$185,000	B	WU	\$85,000	\$100,000	\$0	\$0	\$0	\$0	\$100,000
20-09	New	Small workboat for Goldstream WSA	Small boat dedicated to the Goldstream WSA for wildlife biology work	\$20,000	E	WU	-	\$20,000	\$0	\$0	\$0	\$0	\$20,000
20-29	Renewal	Gravel crushing 14G and 10S quarry (Sooke and Goldstream WSA)	Production of gravel at existing quarries in Sooke and Goldstream WSAs.	\$200,000	L	WU	-	\$200,000	\$0	\$0	\$0	\$0	\$200,000
20-30	Renewal	Surprise Creek Culvert Replacement (Sooke WSA)	Undersized culvert replacement	\$200,000	S	WU	-	\$200,000	\$0	\$0	\$0	\$0	\$200,000
22-02	New	Muckpile Bridge Supply and Install (Deception)	Replacement of undersized culverts with bridge which will allow for fish and western toad migration.	\$325,000	S	WU	-	\$0	\$0	\$325,000	\$0	\$0	\$325,000
23-03	New	Air curtain burner for fuel management	A transportable burner that provides more effective and rapid burning of woody debris with reduced smoke emissions.	\$50,000	E	WU	-	\$0	\$0	\$0	\$50,000	\$0	\$50,000
23-04	Renewal	17S/Sooke Main Bridge Replacement	Undersized bridge replacement	\$300,000	S	WU	-	\$0	\$0	\$0	\$300,000	\$0	\$300,000
24-01	Renewal	6M/Judge Creek Culvert Replacement (Sooke WSA)	Undersized culvert replacement	\$200,000	S	WU	-	\$0	\$0	\$0	\$0	\$200,000	\$200,000
Sub-Total Watershed Protection				\$16,241,000			\$480,000	\$2,335,000	\$3,125,000	\$3,155,000	\$970,000	\$600,000	\$10,185,000

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carry Forward from 2019	2020	2021	2022	2023	2024	5 - Year Total
INFRASTRUCTURE ENGINEERING AND OPERATIONS													
Planning													
16-07	New	Asset Reconciliation / Transfer Agreements	Identify, confirm and reconcile supply system assets ownership.	\$100,000	S	WU	\$15,000	\$15,000	\$0	\$0	\$0	\$0	\$15,000
16-10	New	Post Disaster Emergency Water Supply	Identify and procure emergency systems for post disaster preparedness.	\$1,300,000	S	WU	\$0	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,000,000
17-13	New	Strategic Asset Management Plan	Development of a plan to inform future areas of study and highlight critical infrastructure improvements.	\$300,000	S	WU	\$20,000	\$85,000	\$0	\$0	\$0	\$0	\$85,000
17-14	Renewal	Hydraulic Actuators Assessment/Replacement	Assessment and replacement of hydraulic actuators that are key to operation of the water supply system.	\$450,000	E	WU	\$150,000	\$150,000	\$0	\$0	\$0	\$0	\$150,000
19-04	New	Seismic Assessment of Critical Facilities	Identified as a priority from Strategic Plan, a seismic assessment of critical facilities and a supply system resilience feasibility study will be undertaken.	\$255,000	S	WU	\$55,000	\$55,000	\$200,000	\$0	\$0	\$0	\$255,000
19-15	New	Hydraulic Capacity Assessment and Transient Pressure Analysis	Determine the existing level-of-service for the RWSC transmission system and conduct a transient pressure analysis	\$200,000	S	WU	\$100,000	\$100,000	\$100,000	\$0	\$0	\$0	\$200,000
19-28	Study	Goldstream System Hydraulic Analysis	Analysis and documentation of hydraulics of the Goldstream system.	\$50,000	S	WU	\$0	\$50,000	\$0	\$0	\$0	\$0	\$50,000
20-02	New	Supply System Resilience Feasibility Study	Identified as a priority from the Strategic Plan, a study of water supply system's resilience and high level measures to make important assets resilient will be undertaken	\$200,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
20-07	Study	Deep Northern Intake & Transmission Pipeline Study	A technical and business case analysis will be carried out with possible expansion and filtration study upstream of the head tank - this is to replace 2016-09	\$250,000	S	WU	\$0	\$250,000	\$0	\$0	\$0	\$0	\$250,000
20-08	Study	Regional Water DCC Program	Design of a Regional DCC Program	\$200,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
20-10	Study	Condition & Vulnerability Assessment	Conduct a condition assessment of critical supply infrastructure and assess its possibility of risk.	\$200,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
20-11	Study	Develop Strategic Plan	Develop a long term strategic plan to anticipate water demand, water treatment, and future siting of facilities.	\$500,000	S	WU	\$0	\$500,000	\$0	\$0	\$0	\$0	\$500,000
21-05	Study	Level of Service Agreement	From #19-15 & #20-11, develop level-of-service agreements for participating municipalities to address hydraulic capacity of infrastructure.	\$150,000	S	WU	\$0	\$0	\$150,000	\$0	\$0	\$0	\$150,000
Capital													
15-03	Renewal	Sooke Intake Screens Condition Assessment & Replacement	Renewal of the aging Sooke Intake Tower and equipment to maintain water supply.	\$2,205,000	S	WU	\$500,000	\$500,000	\$0	\$0	\$0	\$0	\$500,000
17-23	New	Japan Gulch Emergency Notification System	Design and implementation of an emergency notification system.	\$205,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
17-24	Replacement	SCADA Equipment Replacement Program	Planned replacement of SCADA equipment as recommended from the SCADA Master Plan.	\$825,000	E	WU	\$0	\$200,000	\$500,000	\$0	\$0	\$0	\$700,000
18-07	New	Replacement of UV System	Replacement of the UV system at the Goldstream Water Treatment Plant	\$5,400,000	E	WU	\$100,000	\$100,000	\$0	\$5,200,000	\$0	\$0	\$5,300,000
18-08	Replacement	Bulk Supply Meter Replacement Program	Planned replacement of aging bulk meter replacement based upon a condition assessment and water audit.	\$2,200,000	E	WU	\$200,000	\$600,000	\$400,000	\$200,000	\$200,000	\$200,000	\$1,600,000
18-15	Renewal	Cathodic Protection Program	Study deficiencies in the current material protection and implement recommendations.	\$420,000	S	WU	\$0	\$100,000	\$80,000	\$80,000	\$80,000	\$80,000	\$420,000
Sub-Total Page 1 Infrastructure Engineering and Operations				\$15,410,000			\$1,140,000	\$3,705,000	\$1,630,000	\$5,680,000	\$480,000	\$480,000	\$11,975,000

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carry Forward from 2019	2020	2021	2022	2023	2024	5 - Year Total
18-17	New	Sooke Spillway Gate Power	Addition of standby power to for the Sooke Spillway gates.	\$150,000	E	WU	\$20,000	\$20,000	\$0	\$0	\$0	\$0	\$20,000
18-18	Replacement	Main No.3 Segment Replacement	Replacement of segments of Main No. 3 based upon previous studies.	\$15,090,000	S	WU	\$140,000	\$140,000	\$250,000	\$4,900,000	\$4,900,000	\$4,900,000	\$15,090,000
19-05	Renewal	Repairs - Kapoor Shutdown	Repair items such as defects in the Kapoor tunnel, replacement of critical valves, intake exterior inspection and actuator replacement while the Kapoor tunnel is shutdown.	\$500,000	S	WU	\$250,000	\$500,000	\$0	\$0	\$0	\$0	\$500,000
19-23	New	Critical Spare Equipment Storage & Pipe Yard	Plan, design and construct a critical equipment storage building.	\$400,000	S	WU	\$0	\$200,000	\$200,000	\$0	\$0	\$0	\$400,000
20-12	Replacement	Valve Chamber Upgrades	Replace failing valves and appurtenances along the RWS supply system.	\$400,000	S	WU	\$0	\$100,000	\$100,000	\$100,000	\$100,000	\$0	\$400,000
20-13	New	Electrical Isolation Audit	Inspection audit of facilities to ensure that there is sufficient electrical separation and isolation for safety.	\$50,000	S	WU	\$0	\$50,000	\$0	\$0	\$0	\$0	\$50,000
20-14	Renewal	Parkdale Meter Decommission and Demolition	The Parkdale meter facility is no longer in use and has been identified as requiring decommissioning and demolition.	\$150,000	S	WU	\$0	\$150,000	\$0	\$0	\$0	\$0	\$150,000
20-15	Replacement	Cook & Somerset Meter Station Backflow Installation	To isolate backflow from the City of Victoria's distribution system into the RWS supply system backflow improvements are required at two facilities	\$75,000	S	WU	\$0	\$75,000	\$0	\$0	\$0	\$0	\$75,000
20-16	Replacement	St Giles & Cecelia Meter Replacements	Replacement of system monitoring and billing meters as well as their enclosures.	\$1,000,000	S	WU	\$0	\$1,000,000	\$0	\$0	\$0	\$0	\$1,000,000
20-17	Replacement	Decommission Smith Hill Site	Plan and decommission the abandoned Smith Hill reservoir site.	\$650,000	S	WU	\$0	\$150,000	\$0	\$0	\$500,000	\$0	\$650,000
20-18	Replacement	Goldstream Main #4 Replacement	Plan and replacement of the concrete pipe portion of Main #4.	\$12,150,000	S	WU	\$0	\$150,000	\$0	\$0	\$0	\$12,000,000	\$12,150,000
20-32	New	pH Adjustment Facility	Design and construct a pH adjustment facility based upon the results of the pH and corrosion study.	\$2,500,000	S	WU	\$0	\$500,000	\$2,000,000	\$0	\$0	\$0	\$2,500,000
22-01	Study	Kapoor Tunnel Inspection	Condition Inspection of the Kapoor Tunnel	\$100,000	S	WU	\$0	\$0	\$0	\$100,000	\$0	\$0	\$100,000
Sub-Total Infrastructure Engineering and Operations				\$48,625,000			\$1,550,000	\$6,740,000	\$4,180,000	\$10,780,000	\$5,980,000	\$17,380,000	\$45,060,000
DAM SAFETY PROGRAM													
16-16	Renewal	Implications from Goldstream Dam Safety Review	Conduct a dam safety review and some improvements for the Goldstream dams.	\$705,000	S	WU	\$30,000	\$180,000	\$100,000	\$75,000	\$75,000	\$75,000	\$505,000
16-17	Renewal	Butchart Dam No. 5 Remediation	Replacement of Butchart Dam No. 5	\$3,550,000	S	WU	\$3,000,000	\$3,200,000	\$0	\$0	\$0	\$0	\$3,200,000
17-25	Renewal	Implications from Sooke Dam Safety Review	Conduct a dam safety review and some improvements for the Sooke Dam.	\$1,350,000	S	WU	\$275,000	\$575,000	\$120,000	\$300,000	\$100,000	\$100,000	\$1,195,000
18-19	New	Sooke Lake Dam - Instrumentation System Improvements	Complete instrumentation system improvements for the Sooke Dam.	\$1,300,000	S	WU	\$475,000	\$750,000	\$200,000	\$100,000	\$150,000	\$100,000	\$1,300,000
18-20	New	Sooke Lake Dam - Breach Risk Reduction Measures	Implement measures to reduce Sooke Lake Dam breach.	\$400,000	S	WU	\$150,000	\$350,000	\$0	\$0	\$0	\$0	\$350,000
19-07	New	Integrate Dam Performance and Hydromet to SCADA	Integrate the dam performance piezometers and weirs and Hydromet stations to report to IO through the existing SCADA system - refer to MMC notes and relates to 17-24	\$1,100,000	E	WU	\$0	\$500,000	\$500,000	\$0	\$0	\$0	\$1,000,000
19-08	New	Charters Dam Decommissioning	Charters Dam has been retired from drinking water service, no other interested owners, plan to decommission - refer to MMC notes of Jan. 11, 2018 meeting with PES, relates to 21-02	\$1,800,000	S	WU	\$0	\$900,000	\$900,000	\$0	\$0	\$0	\$1,800,000
19-09	New	Cabin Pond Dams Decommissioning	The Cabin Pond Dams (x2) have been retired from drinking water service, no other interested owners, plan to decommission - refer to MMC notes of Jan. 11, 2018 meeting with PES	\$600,000	S	WU	\$0	\$500,000	\$0	\$0	\$0	\$0	\$500,000
19-12	New	Goldstream Dams Instrumentation Improvements	Conduct instrumentation improvements based upon Thurber's 2018 study results.	\$1,000,000	S	WU	\$100,000	\$500,000	\$400,000	\$0	\$0	\$0	\$900,000
19-13	New	HydroMet Station Upgrades	IE shares hydromet assets with WP, the equipment is getting older and will need to be replaced (does not include pending SCADA effort)	\$250,000	E	WU	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000
20-19	Replacement	Goldstream System High Level Outlet Valve Replacements	The Goldstream and Butchart high level outlet valves have been identified as requiring replacement.	\$200,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
20-20	Replacement	Saddle Dam Piezometer Installation	From 19-10 recommendations, piezometer installation is required to monitor the Saddle Dam to meet regulatory requirements	\$125,000	S	WU	\$0	\$125,000	\$0	\$0	\$0	\$0	\$125,000
20-21	Replacement	Reservoir Log Booms Replacement	Replace aging log booms and their anchoring systems in the Goldstream and Sooke water sheds.	\$200,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
Sub-Total Page 1 Dam Safety Program				\$12,580,000			\$4,030,000	\$8,030,000	\$2,270,000	\$525,000	\$375,000	\$325,000	\$11,525,000

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carry Forward from 2019	2020	2021	2022	2023	2024	5 - Year Total
21-03	New	Deception Dam - Dam Safety Review & Improvements	Conduct a dam safety review and some improvements for the Deception Dam.	\$300,000	S	WU	\$0	\$100,000	\$100,000	\$100,000	\$0	\$0	\$300,000
21-04	New	Saddle Dam - Dam Safety Review & Improvements	Conduct a dam safety review and some improvements for the Saddle Dam.	\$200,000	S	WU	\$0	\$100,000	\$100,000	\$0	\$0	\$0	\$200,000
23-01	New	Sooke Lake Dam Update Seismic Assessment	Conduct a seismic assessment of the Sooke Lake Dam as per the previous dam safety studies.	\$150,000	E	WU	\$0	\$0	\$0	\$0	\$150,000	\$0	\$150,000
Sub-Total Dam Safety Program				\$13,230,000	\$0	\$0	\$4,030,000	\$8,230,000	\$2,470,000	\$625,000	\$525,000	\$325,000	\$12,175,000
WATER QUALITY PROGRAM													
16-22	New	WQIS Database - Functional Enhancements	Upgrade of the water quality database with additional functionality.	\$100,000	E	WU	\$50,000	\$50,000	\$0	\$0	\$0	\$0	\$50,000
16-24	New	pH Corrosion Study	Study potential risks and solutions to corrosion due to low pH.	\$50,000	E	WU	\$20,000	\$20,000	\$0	\$0	\$0	\$0	\$20,000
18-09	New	WQ - Main Lab Renovation and Consolidation	Renovation of the water quality lab to consolidate services.	\$135,000	E	WU	\$35,000	\$35,000	\$0	\$0	\$0	\$0	\$35,000
18-26	New	Supply Management (Sooke Res) Modeling - Implications from Down-Scaled Climate Change Projections	Assess impacts of regional precipitation patterns on regional water supply.	\$75,000	S	WU	\$75,000	\$75,000	\$0	\$0	\$0	\$0	\$75,000
18-27	New	Paperless Data Management Project	Develop paperless system for records management	\$15,000	S	WU	\$7,000	\$7,000	\$0	\$0	\$0	\$0	\$7,000
19-26	New	Drinking Water Safety Plan for Sooke System	Expand the existing DWSP to include Sooke	\$10,000	S	WU	\$2,000	\$2,000	\$0	\$0	\$0	\$0	\$2,000
19-29	New	Leech River Water Quality Monitoring	Monitor water quality from the Leech River prior to utilizing it.	\$100,000	S	WU	\$25,000	\$25,000	\$0	\$0	\$0	\$0	\$25,000
20-03	New	Leech River Watershed - Implications for Supply Management	Develop program to evaluate water quality implications of adding Leech watershed to supply system.	\$40,000	S	WU	\$0	\$40,000	\$0	\$0	\$0	\$0	\$40,000
20-04	New	Sooke Lake HyDy Model Preparations	Installation of additional monitoring devices to inform model development	\$100,000	S	WU	\$0	\$100,000	\$0	\$0	\$0	\$0	\$100,000
20-31	New	Lab Information Management System	Procure and implement a Lab Information Management System to manage the data being recorded.	\$200,000	S	WU	\$0	\$200,000	\$0	\$0	\$0	\$0	\$200,000
21-06	New	Sooke Lake HyDy Model Development	Build a 3D hydrodynamic model of Sooke Lake Res.	\$100,000	S	WU	\$0	\$0	\$100,000	\$0	\$0	\$0	\$100,000
Sub-Total Water Quality Program				\$925,000			\$214,000	\$554,000	\$100,000	\$0	\$0	\$0	\$654,000
ANNUAL PROVISIONAL CAPITAL ITEMS													
17-27	Replacement	Watershed Bridge and Culvert Replacement	Replacement of small culverts and bridges throughout the GVWSA.	\$1,000,000	S	WU	\$0	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,000,000
17-28	Replacement	Watershed Security Infrastructure Upgrade and Replacement	New, upgrade and replacement of security infrastructure in the GVWSA.	\$915,000	E	WU	\$0	\$200,000	\$155,000	\$155,000	\$155,000	\$155,000	\$820,000
17-29	Replacement	Water Supply Area Equipment Replacement	Hydrometeorological, fireweather, wildfire suppression and water quality equipment replacement.	\$750,000	E	WU	\$0	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$750,000
17-30	Replacement	Major Transmission Main Repairs	Emergency repairs to the transmission mains.	\$850,000	S	WU	\$0	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$850,000
17-31	Replacement	Transmission System Components Replacement	Replacement and repair of transmission components.	\$400,000	S	WU	\$0	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$400,000
17-32	Replacement	Revenue Meter Replacement	Replacement of minor equipment associated with revenue meter sites.	\$230,000	E	WU	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$30,000	\$230,000
17-33	Replacement	Disinfection Equipment Parts Replacement	Replacement of incidental equipment and parts associated with the disinfection system.	\$600,000	E	WU	\$0	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$600,000
17-34	Renewal	Supply System Computer Model Update	Annual update of the regional hydraulic model.	\$50,000	S	WU	\$0	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
19-16	Replacement	Dam Improvements	Items not covered by Dam Safety Reviews, but brought up in Dam Safety Inspections	\$1,000,000	S	WU	\$0	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,000,000
19-22	Replacement	SCADA Repairs & Equipment Replacement	Items not covered by the SCADA Replacement and SCADA Master Plan, but integral in maintaining the SCADA System	\$500,000	E	WU	\$0	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$500,000
Sub-Total for Annual Provisional Capital Items				\$6,295,000			\$0	\$1,280,000	\$1,235,000	\$1,235,000	\$1,235,000	\$1,215,000	\$6,200,000
CUSTOMER AND TECHNICAL SERVICES													
17-35	Replacement	Vehicle & Equipment Replacement (Funding from Replacement Fund)	This is for replacement of vehicles and equipment used by CRD Water Services for the day-to-day operation and maintenance of the supply system.	\$2,495,000	V	ERF	\$0	\$367,000	\$185,000	\$150,000	\$50,000	\$250,000	\$1,002,000
20-22	New	Vehicle for the Dam Safety Program	New pick up	\$35,000	V	WU	\$0	\$35,000	\$0	\$0	\$0	\$0	\$35,000
20-23	New	Vehicle for the CSE Support Program	New Transit Van	\$45,000	V	WU	\$0	\$45,000	\$0	\$0	\$0	\$0	\$45,000
20-24	New	Vehicle for the Asset Integration Program	New pick up	\$35,000	V	WU	\$0	\$35,000	\$0	\$0	\$0	\$0	\$35,000
20-25	New	Compactor for Watershed Road Program	New compactor attachment/trailer for road maintenance	\$60,000	E	WU	\$0	\$60,000	\$0	\$0	\$0	\$0	\$60,000
20-26	New	Trailer for Watershed Protection	New trailer for the Goldstream Zodiac Boat	\$10,000	V	WU	\$0	\$10,000	\$0	\$0	\$0	\$0	\$10,000
Sub-Total for Customer and Technical Services				\$2,680,000			\$0	\$552,000	\$185,000	\$150,000	\$50,000	\$250,000	\$1,187,000
GRAND TOTAL				\$87,996,000			\$6,274,000	\$19,691,000	\$11,295,000	\$15,945,000	\$8,760,000	\$19,770,000	\$75,461,000

CAPITAL REGIONAL DISTRICT CAPITAL PLAN

CAPITAL BUDGET FORM
2020 & Forecast 2021 to 2024

Service #: 2.670/2.680
Service Name: Regional Water Supply & JDF Water Distribution Combo

Proj. No.
The first two digits represent first year the project was in the capital plan.

Capital Exp. 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

Funding Source Codes
Debt = Debenture Debt (new debt only)
ERF = Equipment Replacement Fund
Grant = Grants (Federal, Provincial)
Cap = Capital Funds on Hand
Other = Donations / Third Party Funding

Funding Source Codes (cont)
Res = Reserve Fund
STLoan = Short Term Loans
WU = Water Utility

Asset Class
L - Land
S - Engineering Structure
B - Buildings
V - Vehicles

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".

Total Project Budget
This column represents the total project budget not only within the 5-year window.

FIVE YEAR FINANCIAL PLAN

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Project Budget	Asset Class	Funding Source	Carry Forward from 2019	2020	2021	2022	2023	2024	5 - Year Total
SYSTEM REPLACEMENT AND UPGRADES THAT BENEFIT REGIONAL WATER SUPPLY AND JUAN DE FUCA DISTRIBUTION													
16-01	Renewal	Upgrades to Buildings at 479 Island Highway	Maintenance and changes to buildings and office layouts.	\$510,000	B	WU	\$70,000	\$190,000	\$80,000	\$80,000	\$80,000	\$80,000	\$510,000
17-01	Renewal	Voice Radio Upgrade	Replacement of end of life voice radio system repeaters, office, vehicle and handheld radios.	\$640,000	E	WU	\$270,000	\$270,000	\$290,000	\$0	\$0	\$0	\$560,000
19-02	New	Island Highway Cell Phone Coverage	Increase cell phone coverage within 479 Island Highway, IWS offices.	\$70,000	E	WU	\$70,000	\$70,000	\$0	\$0	\$0	\$0	\$70,000
19-04	New	Legistar - Granicus Implementation	Implement Legistar - Granicus software at IWS.	\$30,000	E	WU	\$20,000	\$20,000	\$0	\$0	\$0	\$0	\$20,000
20-01	New	Portable Pump Station	Portable pump station to provide backup when a pump station is offline, in construction or to bypass a section of pipe.	\$500,000	E	WU	\$0	\$500,000	\$0	\$0	\$0	\$0	\$500,000
Sub-Total System Replacement and Upgrades That Benefit Regional Water Supply and Juan de Fuca Distribution				\$1,750,000			\$430,000	\$1,050,000	\$370,000	\$80,000	\$80,000	\$80,000	\$1,660,000
ANNUAL PROVISIONAL CAPITAL ITEMS													
16-04	New	Implementation of a Fleet Management Solution (software)	Development and implementation of a fleet management system.	\$150,000	E	WU	\$90,000	\$90,000	\$0	\$0	\$0	\$0	\$90,000
17-02	Replacement	SCADA Hardware Upgrading and Replacement	Upgrade and replacement of SCADA equipment as required.	\$210,000	E	WU	\$0	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$175,000
17-03	Replacement	Office Equipment, Upgrades and Replacements	Upgrade and replacement of office equipment as required.	\$270,000	E	WU	\$0	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$225,000
17-04	Replacement	Computer Upgrades	Annual upgrade and replacement program for computers, copiers, printers, network equipment as required.	\$1,190,000	E	WU	\$0	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$850,000
17-05	New	Development of the Maintenance Management Systems	Develop maintenance management system.	\$215,000	E	WU	\$0	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000
17-06	Replacement	Small Equipment & Tool Replacement (Water Operations)	Replacement of tools and small equipment for Water Operations as required.	\$440,000	E	WU	\$0	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$400,000
17-07	Replacement	Small Equipment & Tool Replacement (Corporate Fleet)	Replacement of tools and small equipment for Fleet as required.	\$100,000	E	wu	\$0	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$75,000
Sub-Total for Annual Provisional Capital Items				\$ 2,575,000			\$ 90,000	\$ 455,000	\$ 365,000	\$ 365,000	\$ 365,000	\$ 365,000	\$1,915,000
GRAND TOTAL				\$4,325,000			\$520,000	\$1,505,000	\$735,000	\$445,000	\$445,000	\$445,000	\$3,575,000

Service: 2.670

Regional Water Supply

Proj. No.	17-01	Capital Project Title	Repair of Historic Goldstream Powerhouse Building	Capital Project Description	The Goldstream Powerhouse is an historic building near the Great Trail in the GVWSA. Repairs and a plan to conserve the building are to be developed.
Asset Class	Buildings	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale Located near the Japan Gulch Treatment Plant and the Great Trail (Trans Canada Trail), is an 1897 brick hydroelectric powerplant that served Victoria (notably the streetcars) for approx. 60 years. The Powerhouse has its own Wikipedia entry: http://en.wikipedia.org/wiki/Lubbe_Powerhouse and has captured public interest as a unique structure in BC history. An engineering condition assessment including engineered drawings, site plan and approximate cost of repairs was conducted in 2017. A major repair in the masonry on the north side of the building was completed in 2018. Funds are required in 2019 (\$10,000) to repair a smaller hole in the masonry on the south side. Funds to repair the roof envelope (\$50,000) are planned for 2023. Grant funding opportunities to conserve the building and its history will continue to be sought.					
Proj. No.	17-04	Capital Project Title	Water Supply Area - Fish Stream Assessments	Capital Project Description	Inventory and assessment of fish, fish habitat, and stream channel stability in priority streams in the GVWSA.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale Presence or absence of fish as well as fish habitat information has only been collected in the Water Supply Areas on an as-needed basis related to specific road projects. In order to adequately plan and manage for fish habitat and water quality a systematic inventory and assessment of fish habitat, stream channel stability, and the hydrological condition of stream corridors will be conducted over three field seasons. The funding for 2019 is insufficient to conduct fish stream assessments in the entire Leech Water Supply Area. An additional \$100,000 in 2020 will allow for fish stream surveys to be carried out in the western and northern portions of the Leech which cannot be completed in 2019.					
Proj. No.	18-01	Capital Project Title	Post-Wildfire Debris Flow Modelling	Capital Project Description	Site specific modelling of the potential impact to Sooke Lake Reservoir and infrastructure of a significant wildfire in the Sooke WSA.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale Erosion and debris flows from areas burned by wildfire in the Greater Victoria Water Supply Area could pose a major threat to the quality of water in source reservoirs. A pilot project was completed in 2014-15 to model post-wildfire erosion and debris flow for two drainages close to the intake of Sooke Lake Reservoir. The results were then used to develop an emergency rehabilitation plan for these two drainages. A larger modelling project for all areas draining directly into Sooke Lake Reservoir is proposed for 2019 in order to develop further site specific emergency rehabilitation plans.					
Proj. No.	18-10	Capital Project Title	Species-at-Risk Wildlife Habitat	Capital Project Description	An assessment (office and field) and plan for managing wildlife habitat, in particular species-at-risk habitat, in the GVWSA.
Asset Class	Land	Board Priority Area	Other	Corporate Priority Area	Drinking Water

Service: 2.670

Regional Water Supply

Project Rationale *An assessment (office and field) and conservation plan for managing wildlife habitat, in particular species-at-risk habitat, in the GVWSA. Funds in 2018 (\$35,000) will be used for compilation of existing knowledge of species, distribution, habitat, research. Funds in 2019 and 2020 (\$50,000 each) will be used to field verify species, critical habitat and movement corridors. Funds added in 2021 (\$25,000) are to develop a GVWSA specific conservation plan based on the office and field investigations.*

Proj. No. 19-07

Capital Project Title

Leech WSA Lakes/Tributaries Assessment

Capital Project Description

An assessment of the physical, chemical and biological parameters of the Leech WSA source waterbodies.

Asset Class Land

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale *To assess restoration of the Leech Water Supply Area and prepare for use of Leech River water to supplement Sooke Lake Reservoir, baseline monitoring of the hydrological, physical, chemical and biological parameters of the main Leech WSA source waterbodies will be conducted. The work will be undertaken in conjunction with the Water Quality division. (Action from the 2017 Strategic Plan for Regional Water Supply). The funding for this project has been moved forward to balance staff resources.*

Proj. No. 20-05

Capital Project Title

Leech WSA Terrestrial Ecosystem Mapping & Wetland Classification/Mapping

Capital Project Description

Detailed mapping of Leech WSA terrestrial ecosystems and wetlands from air photo interpretation.

Asset Class Land

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale *The existing Leech WSA terrestrial ecosystem mapping received from the previous landowner is not consistent with that of Sooke and Goldstream WSAs. The project is to renew the ecosystem mapping to a standard that matches Sooke and Goldstream for consistent data and analysis. There has been no detailed mapping of Leech WSA wetlands. The project is to conduct detailed wetland mapping in the Leech WSA to a standard that matches Sooke and Goldstream for consistent data and analysis. **The projects have been combined (ecosystem mapping (20-05) and wetland mapping (20-06) and moved forward from 2020 to 2021.***

Proj. No. 23-02

Capital Project Title

GVWSA LiDAR Mapping

Capital Project Description

To renew LiDAR mapping for the GVWSA.

Asset Class Land

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale *LiDAR (which stands for Light Detection and Ranging) uses light in the form of a pulsed laser to measure ranges (distances). LiDAR can be acquired when orthophotography or other data is collected from the air. LiDAR provides three-dimensional information about the forest stand structure which can be used by GIS (Geographic Information Systems).*

Proj. No. 20-27

Capital Project Title

GVWSA Forest Resilience - wildfire/forest modelling and forest management field trials

Capital Project Description

Modelling forest and wildfire risk under climate change scenarios & forest/fuel management field trials.

Asset Class Land

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale *Projects to: a). model impact of climate change on forests, forest fuel types, and associated wildfire behavior and probability and potential effects of management options; and b). trial forest and fuel management treatments that reduce wildfire risk, such as prescribed fire and stand diversification, in the Leech WSA prior to considering those treatment options in Sooke or Goldstream WSAs.*

Service: 2.670

Regional Water Supply

Proj. No.	20-28	Capital Project Title	GVWSA Forest Resilience - Assessments of forest health and resilience	Capital Project Description	Field assesments to better understand current forest health and resilience.
Asset Class	Land	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Field assessments to better understand current forest health and resilience including: increasing pine mortality, increase in bark beetle killed trees, existing advance regeneration in the understory, sedimentation sources from roads.				
Proj. No.	20-06	Capital Project Title	Addressing mining in Leech WSA (impacts, agreements)	Capital Project Description	Funding to support work to reduce the impact of mining claims in the Leech WSA
Asset Class	Land	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Assessment and/or studies to determine and mitigate impacts from mining activities in the Leech Water Supply Area.				
Proj. No.	20-03	Capital Project Title	GVWSA Land Exchange/Acquisition	Capital Project Description	Land surveys, appraisals to support decisions regarding land exchange to increase catchment area or buffer water supply area lands.
Asset Class	Land	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	There are opportunities to increase the catchment area of Sooke, Goldstream and the Leech WSA by purchase or land exchange with surrounding land owners. Funds would be used to undertake appraisals, legal surveys, and legal fees for work to develop agreements to purchase or exchange lands.				

Service: 2.670

Regional Water Supply

Proj. No.	09-01	Capital Project Title	Leech River Watershed Restoration	Capital Project Description	A 17 year project to restore the Leech WSA lands for water supply.
Asset Class	Land	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	A 17 year project to 2025 to restore the Leech WSA lands for water supply. An update of projects completed and planned was provided in June 2019 (RWSC Report #19-13). Annual funding has been increased during this 5 year plan from \$150,000 to \$200,000 per year in order to match the overall project budget of \$5,756,000 in the last 7 years of the project.				
Proj. No.	16-01	Capital Project Title	Replace Gatehouse at Goldstream Entrance	Capital Project Description	The security/first aid gatehouse is past end of life and is to be replaced with more effective security infrastructure.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Enhanced security is required at the Goldstream entrance to the Water Supply Area. The existing gatehouse/first aid trailer is unsuitable and located inside the secured area. An in/out road with upgraded autogates is also being established. Current cost estimates indicate additional funding is needed in 2020 (\$50,000) to meet building functionality needs and the current construction market.				
Proj. No.	17-09	Capital Project Title	Goldstream Gate Upgrade	Capital Project Description	The main entrance gate in Goldstream is past end of life and requires replacement with lifting in/out gates.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The security autogates are past end of life and are to be replaced with more effective security infrastructure. This project has been delayed in order to coordinate with construction of a replacement Gatehouse at the Goldstream entrance (16-01).				
Proj. No.	16-06	Capital Project Title	Goldstream IWS Office	Capital Project Description	Renewal of Water Quality field office, lab and equipment and supplies storage and Watershed Protection office, training,
Asset Class	Buildings	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Watershed Protection staff (26 FTE and 6 seasonal auxiliaries) are currently located in 2 trailers and a house at the Goldstream Gate entrance to the water supply area, and in office space at the Integrated Water Services office in View Royal. The ATCO trailers were considered temporary office space since their implementation over 10 years ago. The trailers are old, prone to leaks and a concern for mold. Water Quality field staff are located in another converted facility in the Goldstream area. The separation of staff between various Goldstream facilities and the View Royal location causes inefficiencies and organizational difficulties. In addition, there are insufficient facilities for training, equipment storage, emergency management and public education. An initial investment in 2016 was used to develop a needs assessment for the building and surrounding Goldstream entrance area. Funds in 2020 will be used to develop a design with building and site construction planned for 2021 and 2022.				

Service: 2.670

Regional Water Supply

Proj. No.	17-02	Capital Project Title	Leech River HydroMet System	Capital Project Description	Installation of a network of hydrometeorological stations to collect water quantity and quality information for the Leech WSA.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	A 17 year \$ 5.756 M capital plan is being carried out to restore the Leech Water Supply Area (Project #09-01) to prepare for future water needs. Currently only one hydrological measuring station is capturing flow and turbidity measurements 3.8 km downstream of the future water intake on the Leech River. In order to understand and predict the effect of precipitation, storm events and various restoration management measures on Leech River water quality and quantity, a network of hydrological measuring stations is needed further upstream in the Leech River watershed. This capital project first funded a design study of the most effective and efficient monitoring system that could be implemented (\$10,000) prior to funding implementation beginning in 2018 (\$80,000). Additional funding requests of \$30,000 in 2020 (new total \$100,000) and \$10,000 in 2021 (new total \$25,000) to provide assistance in accessing and addressing safety issues at new weather and hydrology monitoring sites and installing the equipment. Funding requests reflect difficult terrain and access to reach monitoring locations.				
Proj. No.	17-06	Capital Project Title	Weeks Lake Area Environmental Assessment and Remediation	Capital Project Description	Assessment and remediation of the Weeks Lake gravel pit (lead from firearms) and Weeks Lake (metals and hydrocarbons from dumping).
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Weeks Lake and the surrounding area are suspected to be contaminated by historic use of the area for unregulated public activities. An assessment for lead contamination in the Weeks Lake gravel pit from firearms use began in 2017 with remediation works planned for 2019. The assessment completed in 2018 found surficial soil contamination in the top 15 cm throughout most of the northern half of the gravel pit. A remediation plan (2019) estimated a cost of \$250,000 to remove and dispose of the contaminated soil (classed as hazardous waste). Additional funding of \$145,000 has been added to the original 2020 request to adequately fund the gravel pit remediation work. Funds in 2021 are estimated for further sampling and possible remediation of Weeks Lake which was found to have minor contamination in the lake sediment.				
Proj. No.	17-07	Capital Project Title	Weeks Main Road Upgrade	Capital Project Description	Road upgrade and new construction to re-route Weeks Main and bring the road to regulatory standard.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This 500 m section at the north end of Weeks Main is prone to flooding in two areas and the streams are fish bearing. The road will be re-routed and upgraded to avoid an alluvial fan with multiple braided streams and a new bridge installed to cross the fish bearing stream further upslope. The bridge portion of the project will be funded under the Leech Watershed Restoration project (09-01).				

Service: 2.670

Regional Water Supply

Proj. No.	18-05	Capital Project Title	GVWSA Forest Fuel Management	Capital Project Description	Implementation of forest fuel management in strategic locations for wildfire risk management in the GVWSA.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Wildfire is the greatest threat to water quality in the GVWSA. In 2014 - 2018 CRD staff completed two new fuel reduction corridor projects. Funding to tender contract projects is required in order to complete priority fuel management projects over and above existing staff effort which will be focused on maintenance of existing fuel managed sites. A requested increase from \$75,000 to \$100,000 annually reflects costs experienced in the first year of tendering fuel management work. The need for fuel management to address priority areas will be ongoing and funding is required annually for the 5 year period.				
Proj. No.	19-02	Capital Project Title	Whiskey Creek Bridge Replacement	Capital Project Description	Replacement of the existing undersized bridge with a longer and higher concrete structure.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Whiskey Creek bridge is located on the Leechtown Main Road, one of the main access routes to Sooke Lake Dam and other critical IWS infrastructure. Whiskey Creek requires a larger bridge as it has been overtopped by storm events in the past and this poses water quality, environmental and safety risks.				
Proj. No.	19-19	Capital Project Title	Hydromet Upgrades Sooke and Goldstream	Capital Project Description	Install additional hydrology monitoring sites on Sooke Lake Reservoir inflow streams and increase instrumentation on meteorological stations in Sooke and Goldstream watersheds.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Only the main tributary inflows into Sooke Lake Reservoir are monitored. To better understand the hydrology of the Sooke watershed, additional hydrology monitoring sites are required. The existing meteorological stations in Sooke and Goldstream watersheds have only basic instrumentation and would benefit from additional sensors and upgrades to improve the quality of the meteorological data. The proposed funds for 2020 have been increased by \$20,000 to cover the costs associated with site preparation, addressing site safety issues and assistance with station installation.				
Proj. No.	20-01	Capital Project Title	Kapoor Main Mile 1 Bridge and Asphalt Upgrade	Capital Project Description	Replacement of the existing undersized culvert with a large bridge as well as nearby asphalt repair or replacement.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The existing culvert at Mile 1 on Kapoor Main is undersized, has evidence of buried organics in the fill material and has oversteepened, unstable banks. The culvert will be removed and a bridge installed to improve water carrying capacity at peak flows, fish passage and bank stability. The asphalt section uphill of the bridge will also be repaired or replaced as a component of the project. The project has been moved forward from 2020 to 2021 to allow higher priorities to be addressed first.				

Service: 2.670

Regional Water Supply

Proj. No.	21-01	Capital Project Title	31N Bridge to Replace Undersized Culvert	Capital Project Description	Replacement of the existing undersized and failing culvert with a bridge structure.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The undersized and failing culvert on the 31N Road in the Goldstream Water Supply Area requires replacement with a bridge structure.				
Proj. No.	18-11	Capital Project Title	Large Equipment Storage	Capital Project Description	Two additional bays are to be added to the existing fire/spill equipment warehouse at the FOC to shelter large water supply infrastructure equipment.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Increased protected storage is required for IWS equipment at the Field Operations Centre in Goldstream. The existing Fire and Spill Equipment Warehouse and adjacent covered storage is sound and fully utilised. Funds are for additional covered storage bays to accommodate additional large IWS equipment. The upgrade was recommended in the Building Needs Assessment for the Watershed Protection Operations Centre (16-06). Additional funds of \$100,000 are requested in 2020 to supplement the original project amount given bids received on a 2019 tender for the project.				
Proj. No.	20-29	Capital Project Title	Gravel Crushing 14G and 10S Quarry (Sooke and Goldstream WSAs)	Capital Project Description	Production of gravel at existing quarries in Sooke and Goldstream WSAs.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The current supply of 19 mm road surfacing gravel needs to be replenished. A five year supply is planned to be produced at the 14G5 quarry, as well as crushing existing rough shot rock at the 10S quarry for road surfacing.				
Proj. No.	20-30	Capital Project Title	Surprise Creek Culvert Replacement (Sooke WSA)	Capital Project Description	Undersized bridge replacement
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This undersized culvert is located on Leechtown Main, an important access route in the watershed. The culvert will be replaced with a larger structure.				

Service: 2.670

Regional Water Supply

Proj. No.	20-09	Capital Project Title	Small workboat for Goldstream WSA	Capital Project Description	Small boat dedicated to the Goldstream WSA for wildlife biology work.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	With development of a Biosecurity Strategy for the GVWSA, it is recommended that boats and water sampling equipment be dedicated to specific water supply areas to avoid the potential for spreading aquatic species between water supply systems. A larger aluminum workboat is already available for the Goldstream WSA, but given the need for shallow shoreline biology work as well as the need to be able to respond to emergencies in shallow water, a smaller inflatable workboat is required. A trailer to transport the boat is being requested by CRD Fleet Services.				
Proj. No.	22-02	Capital Project Title	Muckpile Bridge Supply and Install (Deception watershed)	Capital Project Description	Replacement of undersized culverts with a bridge which will allow for fish and western toad passage.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Replacement of undersized culverts with a concrete deck L100 bridge which will also improve fish passage and western toad migration.				
Proj. No.	23-04	Capital Project Title	17S/Sooke Main Bridge Replacement (Sooke WSA)	Capital Project Description	Undersized bridge replacement
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The current structure (3 concrete culverts side-by-side with a concrete deck) does not allow adequate room to pass potential storm debris. The most recent engineering inspection stated this recycled structure is in fair shape, with spalling of the concrete. The structure is planned to be replaced with a free span concrete bridge.				
Proj. No.	23-03	Capital Project Title	Air curtain burner for fuel management	Capital Project Description	A transportable burner that provides more effective and rapid burning of woody debris with reduced smoke emissions.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	In order to prevent forest fuels from accumulating from clearing and forest fuel management projects, the woody debris is chipped and dispersed as possible, and the remainder is piled and burned. Opening burning of woody debris is restricted by the Open Burning Smoke Control Regulation, which restricts the days and conditions under which woody debris can be burned in order to reduce the amount and dispersion of smoke generated, especially near urban areas. This limits the timing of burning in the GVWSA to few opportunities and may not allow all required burning to be completed in a given year. An air curtain burner can be transported to a site, fed with woody debris, and very little if any smoke is generated as the fuel is burned quickly by feeding it with air and an "air curtain" contains the smoke within the burner.				

Service: 2.670

Regional Water Supply

Proj. No.	24-01	Capital Project Title	6M/Judge Creek Culvert Replacement (Sooke WSA)	Capital Project Description	Undersized bridge replacement
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<i>This culvert is very undersized on a slow moving section of creek, which seasonally can be overtopped and unpassable for vehicles. This culvert will be replaced with a larger, fish-friendly structure.</i>				
Proj. No.	16-07	Capital Project Title	Asset Reconciliation / Transfer Agreements	Capital Project Description	Identify, confirm and reconcile supply system assets ownership.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<i>The supply system has evolved over the past century and has been developed under different ownership. This item will identify specific water system assets and assign ownership, under agreement, between the CRD and the wholesale customers including the finalizing the agreement with the District of Saanich, and initiating agreements with the City of Victoria and the District of Oak Bay.</i>				
Proj. No.	16-10	Capital Project Title	Post Disaster Emergency Water Supply	Capital Project Description	Identify and procure emergency systems for post disaster preparedness.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<i>In the event of a disaster, it is proposed to have in place the ability to source, treat (if required) and distribute drinking water during the initial and sustained response and recovery phases to the public. This item will see the study of the issue in 2016 and 2017 with the anticipated purchase of one or more emergency distribution systems in 2017. Initial investigation has highlighted areas, such as having hardened hydrants/standpipes that the CRD should be investing in. Additional funds are required to start implementing these additional works.</i>				

Service: 2.670

Regional Water Supply

Proj. No.	17-13	Capital Project Title	Strategic Asset Management Plan	Capital Project Description	Development of a plan to inform future areas of study and highlight critical infrastructure improvements.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This plan will bring various components together from items 14-01, 16-07, 16-08, 16-09, 16-10 and 16-11 and form a strategic plan that will identify future study and construction requirements with capital replacement budgets and schedules. Additional funds are required to complete additional investigations highlighted in the 2017 study.				
Proj. No.	17-14	Capital Project Title	Hydraulic Actuators Assessment/Replace	Capital Project Description	Assessment and replacement of hydraulic actuators that are key to operation of the water supply system.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	There are 16 hydraulic actuators that control valves and gates in the watershed that are nearing the end of their service life (installed in 1977). These actuators need replacement and evaluation of the existing actuators is required to determine optimum actuator technology, replacement strategy, associated mitigative improvements for each location. The 2017 work will result in an actuator replacement program with a defined schedule, scope and costs. The 2018 – 5 year Capital Budget has been adjusted to reflect initial findings in the 2017 assessment.				
Proj. No.	19-04	Capital Project Title	Seismic Assessment of Critical Facilities	Capital Project Description	Identified as a priority from Strategic Plan, a seismic assessment of critical facilities will be undertaken.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	A Water Supply System Strategic Plan update occurred in 2017. Seismically assessing critical facilities and ensuring water supply is resilient has been highlighted as a priority to ensure a functioning water supply system after a seismic event. With the exception of dams, all critical facilities including the Japan Gulch and Sooke River Road Disinfection facility will be seismically assessed in a desktop study and confirmed through field inspections to determine if they meet current post-disaster requirements. Additionally, a feasibility study of critical infrastructure will identify and assess whether plans, procedures and necessary infrastructure are in place in the event key infrastructure fails. The results of the assessment will inform future investigation and capital improvements if required. Funds are required to retain a consultant to seismically assess critical facilities within the water supply system.				

Service: 2.670

Regional Water Supply

Proj. No. 19-15

Capital Project Title Hydraulic Capacity Assessment and Transient Pressure Analysis

Capital Project Description Determine the existing level-of-service for the RWSC transmission system and conduct a transient pressure analysis

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The RWSC transmission is complex with all the connection points to it. Funding is required to determine the available pressures and flows throughout the transmission system and whether it is susceptible to transient pressure waves.

Proj. No. 19-28

Capital Project Title Goldstream System Hydraulic Analysis

Capital Project Description Analysis and documentation of hydraulics of the Goldstream system.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale A study to quantify the volume and available flow rate from the Goldstream system is required to qualify the operational conditions in the event it is used as an emergency backup for the Sooke Lake system.

Proj. No. 20-02

Capital Project Title Supply System Resilience Feasibility Study

Capital Project Description Identified as a priority from the Strategic Plan, a study of water supply system's resilience and high level measures to make important assets resilient will be undertaken

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The RWSC currently has one primary water supply and one backup water supply with single feeds from each system. Funding is required to assess the water supply system's resilience and outline high level measures to make important assets resilient.

Service: 2.670

Regional Water Supply

Proj. No. 20-07

Capital Project Title Deep Northern Intake & Transmission Pip

Capital Project Description A technical and business case analysis will be carried out with possible expansion and filtration study upstream of the head tank

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale A technical and business case analysis will be carried out on an additional intake from the deeper, northern area of the Sooke Lake Reservoir. Additionally, a filtration siting study will be undertaken due to the interconnectedness of the two works.

Proj. No. 20-08

Capital Project Title Regional Water DCC Program

Capital Project Description Design of a Regional DCC Program

Asset Class Study

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The municipalities are developing and growing and may result in upgrades to maintain the level of service due to development. Funds are required to design a Regional Water Development Cost Charge program.

Proj. No. 20-10

Capital Project Title Condition & Vulnerability Assessment

Capital Project Description Conduct a condition assessment of critical supply infrastructure and assess its possibility of risk.

Asset Class Study

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The RWSC is a large system with infrastructure of various ages and condition. Funding is required to conduct a condition assessment of critical infrastructure, such as Humpback PRV, and assess their risk of failure and provide a high level timeline for replacement/renewal.

Service: 2.670

Regional Water Supply

Proj. No.	20-11	Capital Project Title	Develop Strategic Plan	Capital Project Description	Develop a long term strategic plan to anticipate water demand, water treatment, and future siting of facilities.
Asset Class	Study	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The RWSC is providing water to an increasing population in the CRD. Due to the size and complexity of the supply system, improvements to increase capacity has to be identified and planned out well in advance of the need for the additional water. Funding is required to assess water demand vs available water supply, assess water treatment and future siting of facilities that may be required.				
Proj. No.	21-05	Capital Project Title	Level of Service Agreement	Capital Project Description	From #19-15 & #20-11, develop level-of-service agreements for participating municipalities to address hydraulic capacity of infrastructure.
Asset Class	Study	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The RWSC supplies water directly and indirectly to 12 municipalities. Based upon Capital Projects #19-15 and #20-11, level-of-service agreements for participating municipalities will be developed to address hydraulic capacity of infrastructure.				
Proj. No.	15-03	Capital Project Title	Sooke Intake Screens Condition Assessr	Capital Project Description	Renewal of the aging Sooke Intake Tower and equipment to maintain water supply.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The Intake Tower is an integral part of the Regional Water System and is the primary raw water feed to Japan Gulch and Sooke River Road Water Treatment Plants. Currently there is no redundancy within the structure in the event of mechanical failure. In 2016 Stantec Consulting Ltd. completed an assessment of the overall structure including major components consisting of: Travelling Screen, Sluice Gates/Actuators, and Electrical System. The assessment identified required remedial works to the major components that will be carried out over 2017 and 2018. In 2016 a Seismic Structural Analysis will be completed to assess the vulnerability of this structure and identify options of upgrades or replacement of the structure to meet current seismic codes. In 2017 Stantec had provided renewal and replacement options for the Intake Tower, additional funds are required to renew the Intake Tower to ensure proper functioning screens, sluice gates/actuators and electrical system.				
Proj. No.	17-23	Capital Project Title	Japan Gulch Emergency Notification Syst	Capital Project Description	Design and implementation of an emergency notification system.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	An emergency notification system is required at the Japan Gulch Disinfection Facility to meet regulatory compliance related to gas release and other hazards (e.g. wildfire). The need was evaluated and solution described in detail in the Gas Release Risk Assessment and Communication Plan; Japan Gulch Disinfection Facility; June 30, 2016. This work will include installation of a new siren system (and associated controls) at the plant and fund CRD assistance in the development of an emergency mass notification system. Additional funds are required to implement the emergency notification system. This work has been deferred so that it may be carried out with a possible notification system for dam safety.				

Service: 2.670

Regional Water Supply

Proj. No.	17-24	Capital Project Title	SCADA Equipment Replacement Program	Capital Project Description	Planned replacement of SCADA equipment as recommended from the SCADA Master Plan.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale A study of the existing SCADA equipment was completed by Stantec Consulting and they proposed short-term and long-term SCADA equipment replacements. It is proposed to replace the equipment based on priority and defined by deterioration and/or age. Funding is required to upgrade the following equipment over the next 10 years: 2017 - Watershed SCADA sites, upgrade of PCS & Communications; 2020 - Replacement of some bulk meter SCADA sites; 2021 - Replacement of some bulk meter SCADA sites, watershed SCADA sites and upgrade of PCS & Communications.					
Proj. No.	18-07	Capital Project Title	JGTP - UV Reactor Lines 9 & 10 Installation	Capital Project Description	Installation of additional UV reactors.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale Two 24" UV disinfection units that were decommissioned from the old Charters Creek plant are required to be installed at the JG plant along with electrical and control connections. Inlet and outlet valves are in place, but require 24" stainless steel piping to insert units into place. Funding is required to relocate existing UV disinfection units to the JG plant and provide electrical & control and piping connections.					
Proj. No.	18-08	Capital Project Title	Bulk Supply Meter Replacement Program	Capital Project Description	Planned replacement of aging bulk meter replacement based upon a condition assessment and water audit.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale This item is to replace, upgrade and install new bulk water meters and related equipment that measure flow and volumes of water delivered to the wholesale customers. Many of the meter stations are in need of upgrading. In 2017, KWL completed a bulk water system audit and recommended that the Admirals and Cecelia sites are priority for 2017 and 2018, in 2019 Layritz and Maplewood, in 2020 Blue Ridge, Alderley and Holland, in 2022 St Giles be replaced. Funding is required to replace the flow meter and appurtenances.					
Proj. No.	18-15	Capital Project Title	Cathodic Protection Program	Capital Project Description	Study deficiencies in the current material protection and implement recommendations.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale This item is to assess, design and implement cathodic protection for the various infrastructure, including steel pipes, that are susceptible to corrosion. The supply system has various implementations of cathodic protection ranging from interior/exterior coatings for pipe and passive anodes to impressed current systems with variable results and condition. Funding is required to retain a specialist to conduct a high level assessment of existing infrastructure with recommendations for additional investigation or areas that require immediate attention.					

Service: 2.670

Regional Water Supply

Proj. No.	18-17	Capital Project Title	Sooke Spillway Gate Power	Capital Project Description	Addition of standby power to for the Sooke Spillway gates.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This item is to provide emergency power to the Sooke Spillway Gates so that they can be operated during a power failure. This item was identified during an assessment and predesign of the Sooke Intake, this work is required to ensure proper function of the spillway gates during a power outage. Funding is required to retain a consultant to conducted detailed design and for procurement of a standby generator for the spillway gates.				
Proj. No.	18-18	Capital Project Title	Main No.3 Segment Replacement	Capital Project Description	Replacement of segments of Main No. 3 based upon previous studies.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The existing Main No. 3 is approximately 70 years old. Some section of the 22 km main are steel pipe in known potentially corrosive soils. It is proposed to eventually replace a segment of Main #3 on Wale Road, Island Hwy. and Adams Place in Colwood and View Royal. Conceptual design and options analysis will be undertaken in 2018 with detailed design and construction commencing in 2019 to 2022. Funding is required to retain a consultant to undertake design and to construct a replacement to Main No. 3.				
Proj. No.	19-05	Capital Project Title	Repairs - Kapoor Shutdown	Capital Project Description	Repair items such as defects in the Kapoor tunnel, replacement of critical valves, intake exterior inspection and actuator replacement while the Kapoor tunnel is shutdown.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	During the 2016 Kapoor Tunnel inspection numerous deficiencies were noted. Some of the repairs were made and inspected in 2017. Funds are required to complete remaining identified repairs as well as conduct other works, such as head tank valve maintenance, dive inspection of the Intake Tower, hydraulic actuator line replacement, that can only be conducted when the Kapoor Tunnel is offline .				
Proj. No.	19-23	Capital Project Title	Critical Spare Equipment Storage & Pipe Yard	Capital Project Description	Plan, design and construct a critical equipment storage building.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Additional and accessible storage is required at the pipe yard for critical spare equipment such as repair bands and clamps. Funds are required to pland, design and construct an equipment storage building accessible by loading vehicles.				

Service: 2.670

Regional Water Supply

Proj. No. 20-12

Capital Project Title Valve Chamber Upgrades

Capital Project Description Replace failing valves and appurtenances along the RWS supply system.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale There are numerous valve chambers within the RWSC in various states of condition. Operation of the valves is critical to supply system. Funding is required to replace failed valves, flushes, water proof chambers, replace rungs, ... throughout the RWS system.

Proj. No. 20-13

Capital Project Title Electrical Isolation Audit

Capital Project Description Inspection audit of facilities to ensure that there is sufficient electrical separation and isolation for safety.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The RWSC has numerous facilities with electrical and mechanical equipment within the same room. Funds are required to conduct and inspection of the facilities and ensure there is sufficient separation to reduce the risk of failure and for safety.

Proj. No. 20-14

Capital Project Title Parkdale Meter Decommission and Demolition

Capital Project Description The Parkdale meter facility is no longer in use and has been identified as requiring decommissioning and demolition.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale Funding is required to decommission and demolition the Parkdale meter facility that is no longer in operation and no longer required.

Proj. No. 20-15

Capital Project Title Cook & Somerset Meter Station Backflow Installation

Capital Project Description To isolate backflow from the City of Victoria's distribution system into the RWS supply system backflow improvements are required at two facilities

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale An assessment in 2018 highlighted that water from the City of Victoria's water system was backflowing in the RWSC system at the Cook and Somerset meter stations. Funding is required to install backflow preventors.

Service: 2.670

Regional Water Supply

Proj. No.	20-16	Capital Project Title	St Giles & Cecelia Meter Replacements	Capital Project Description	Replacement of system monitoring and billing meters as well as their enclosures.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The St Giles and Cecelia meters are aging and in hard to maintain locations. Funding is required to construct new meter sites and decommission and demolition the old sites.				
Proj. No.	20-17	Capital Project Title	Decommission Smith Hill Site	Capital Project Description	Plan and decommission the abandoned Smith Hill reservoir site.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The Smith Hill reservoir has not been in operation for many years. Funds are required to plan for decommission the site in 2020 and then carry out decommissioning in 2023.				
Proj. No.	20-18	Capital Project Title	Goldstream Main #4 Replacement	Capital Project Description	Plan and replacement of the concrete pipe portion of Main #4.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The Main #4 transmission main going through Goldstream Ave in Langford is concrete pipe and should be replaced. Funds are required to plan a new alignment and logistics of replacement in 2020 with actual replacement starting in 2024.				
Proj. No.	20-32	Capital Project Title	pH Adjustment Facility	Capital Project Description	Design and construct a pH adjustment facility based upon the results of the pH and corrosion study.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	From the 2019 Capital Project, pH and Corrosion Study, a new facility to adjust pH in the transmission system will be designed and constructed.				
Proj. No.	22-01	Capital Project Title	Kapoor Tunnel Inspection	Capital Project Description	Condition Inspection of the Kapoor Tunnel
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Funds are required to complete an inspection of the Kapoor Tunnel and inspect the 2019 repair works.				

Service: 2.670

Regional Water Supply

Proj. No. 16-16	Capital Project Title Goldstream Dams Safety Review & Impr	Capital Project Description Conduct a dam safety review and some improvements for the Goldstream dams.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale <i>The Goldstream Dams Dam Safety Review was initiated in 2015 and delivered in 2016 (\$80k) and the study provided recommendations for dam safety improvements at the suite of 11 dams in the Goldstream Watershed. Upcoming studies and capital work to be completed includes:</i> <ol style="list-style-type: none"> Dam Breach Assessment and Inundation Mapping (\$175k) – 2018 Goldstream Dam – Install Riprap at Spillway (\$10k) - 2018 Survey work (\$15k) – 2018 Japan Gulch Spillway Hydraulic Assessment (\$25k) – 2019 Update Seismic Hazard (\$50k) – 2019 Seismic Deformation Analysis (\$75k) – 2019 Evaluate Core and Shell Materials – (\$100k) - 2020 Lubbe Dam #1 – low level outlet inspection (\$10k) – 2021 Lubbe Dams #2 and #3 – Install Seepage Weir at each dam (\$50k) – 2021 Lubbe Dam #2 – Install Riprap at upstream face of dam (\$15k) - 2021 		
Proj. No. 16-17	Capital Project Title Butchart Dam No. 5 Remediation	Capital Project Description Replacement of Butchart Dam No. 5
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale <i>Butchart Dam #5 was observed to have a sinkhole on the downstream slope. The earthfill dam was founded on limestone in the about 1905 and seepage issues have occurred since that time. A geotechnical investigation was conducted in 2016, and remediation has been recommended by geotechnical consultant. It is proposed to complete detailed design of remediation in 2018 and construction of repairs in 2019.</i>		
Proj. No. 17-25	Capital Project Title Sooke Dam Safety Review and Implicatio	Capital Project Description Conduct a dam safety review and some improvements for the Sooke Dam.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale <i>The 2016 Dam Safety Review Audit was completed in 2016 and provided a list of recommended improvements. Upcoming capital work to be completed includes:</i> <ol style="list-style-type: none"> Repairs to spillway gates (\$200k) – 2018 Further testing of spillway underdrainage system (\$100k) – 2018 Review video inspection data for Low Level Outlet Pipes (\$10k) - 2018 Upgrade roadside ditches near left abutment and add fill to abutment (\$100k) - 2019 Failure Modes Analysis (\$120k) – 2019 Emergency Drawdown Assessment (\$100k) - 2019 Risk Analysis and Assessment (\$100k) 2020 Freeboard Analysis – wind and wave run-up assessment (\$20k) – 2020 Reservoir Slope Stability Assessment (\$200k) – 2021 Structural Assessment of Intake Tower Footings during rapid reservoir drawdown scenario (\$100k) - 2021 		

Service: 2.670

Regional Water Supply

Proj. No. 18-19	Capital Project Title Sooke Lake Dam - Instrumentation Syste	Capital Project Description Complete instrumentation system improvements for the Sooke Dam.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale Development of a more robust surveillance system suitable for an "extreme" consequence classification dam that includes new instrumentation, and will allow for improved observation and timely analysis of critical dam safety related data. This was identified as a recommended action from the 2016 Dam Safety Review Audit. Results of planning study (#14-04) will inform the phasing priorities for the capital works. Initial planned phased are to be confirmed and currently consist of: <ol style="list-style-type: none"> 1. Phase 1 – Detailed design and installation of new vibrating wire piezometers (\$600k) – 2018/2019 2. Phase 2 – Installation of new seepage weirs (\$200k) - 2019 3. Phase 3 – SCADA upgrades (\$200k) - 2020 4. Phase 4 – New data processing and training (\$100k) - 2021 5. Phase 5 – Install Seismograph (\$150k) - 2022 		
Proj. No. 18-20	Capital Project Title Sooke Lake Dam - Breach Risk Reductio	Capital Project Description Implement measures to reduce Sooke Lake Dam breach.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale A dam breach assessment and inundation mapping project is being completed in 2017 by an engineering consultant. The study will include assessment of the dam consequence classification. Recommendations from the study are anticipated to include structural and non-structural risk mitigation measures to lower risks associated with an emergency dam breach. Mitigation measures are anticipated to be implemented in future years and may include: <ol style="list-style-type: none"> 1. Stockpile of riprap near dam site (\$200k) - 2018 2. Installation of early warning systems and structural improvements (\$200k) - 2019 		
Proj. No. 19-07	Capital Project Title Integrate Dam Performance and Hydromet to SCADA	Capital Project Description Integrate the dam performance piezometers and weirs and Hydromet stations to report to IO through the existing SCADA system - refer to MMC notes and relates to 17-24
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale Based on capital project 18-19, dam performance piezometers and weirs and Hydromet stations will be integrated through the SCADA system.		
Proj. No. 19-08	Capital Project Title Charters Dam Decommissioning	Capital Project Description Charters Dam has been retired from drinking water service, no other interested owners, plan to decommission - refer to MMC notes of Jan. 11, 2018 meeting with PES, relates to 21-02
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale The Charters Dam has been retired from drinking water service with no other interested owners. Funds are required to plan and implement decommissioning of the dam prior to the next legislated Dam Safety Review.		

Service: 2.670

Regional Water Supply

Proj. No.	19-09	Capital Project Title	Cabin Pond Dams Decommissioning	Capital Project Description	The Cabin Pond Dams (x2) have been retired from drinking water service, no other interested owners, plan to decommission - refer to MMC notes of Jan. 11, 2018 meeting with PES
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The two Cabin Pond Dams has been retired from drinking water service with no other interested owners. Funds are required to plan and implement decommissioning of the dams.				
Proj. No.	19-12	Capital Project Title	Goldstream Dams Instrumentation Improvements	Capital Project Description	Conduct instrumentation improvements based upon Thurber's 2018 study results.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Thurber completed a study on the Goldstream Dam instrumentation and found numerous deficiencies with respect to dam safety. Funds are required to design and implement improvements to the Goldstream Dam instrumentation.				
Proj. No.	19-13	Capital Project Title	HydroMet Station Upgrades	Capital Project Description	IE shares hydromet assets with WP, the equipment is getting older and will need to be replaced (does not include pending SCADA effort)
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Aging Hydromet stations maintained by Infrastructure Engineering require replacement so that ongoing monitoring within the watersheds can be maintained. Funds are required for upgrades and replacement of existing Hydromet Stations.				
Proj. No.	20-19	Capital Project Title	Goldstream System High Level Outlet Valve Replacements	Capital Project Description	The Goldstream and Butchart high level outlet valves have been identified as requiring replacement.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Through dam safety inspections and routine operations, the Goldstream and Butchart high level outlet valves have been identified as requiring replacement. Funds are required to design and replace the valves.				

Service: 2.670

Regional Water Supply

Proj. No. 20-20

Capital Project Title Saddle Dam Piezometer Installation

Capital Project Description

From 19-10 recommendations, piezometer installation is required to monitor the Saddle Dam to meet regulatory requirements

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale From the 2019 Capital Project, #19-10, recommendations were made for piezometer installation at Saddle Dam to meet regulatory requirements. Funds are required to design and implement piezometer installation.

Proj. No. 20-21

Capital Project Title Reservoir Log Booms Replacement

Capital Project Description

Replace aging log booms and their anchoring systems in the Goldstream and Sooke water sheds.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale There are numerous log booms used within the Goldstream and Sooke water sheds to protect dams and facilities. Funds are required to design and replacement a number of them.

Proj. No. 21-03

Capital Project Title Deception Dam - Dam Safety Review & I

Capital Project Description

Conduct a dam safety review and some improvements for the Deception Dam.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale Deception Dam has a consequence classification of "very high" and a dam safety review is required to be completed every ten years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2011. The dam safety review is anticipated to be an "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. Project includes budget for subsequent year to complete recommended dam safety improvements.

Proj. No. 21-04

Capital Project Title Saddle Dam - Dam Safety Review & Imp

Capital Project Description

Conduct a dam safety review and some improvements for the Saddle Dam.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale Saddle Dam has a consequence classification of "very high" and a dam safety review is required to be completed every ten years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2011. The dam safety review is anticipated to be an "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. Project includes budget for subsequent year to complete recommended dam safety improvements.

Service: 2.670

Regional Water Supply

Proj. No. 23-01	Capital Project Title Sooke Lake Dam Update Seismic Assessment	Capital Project Description Conduct a seismic assessment of the Sooke Lake Dam as per the previous dam safety studies.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale The Sooke Lake Dam requires periodic seismic assessment updates. Funds are required to retain a consultant to conduct an update to the Sooke Lake Dam Seismic Assessment.		
Proj. No. 16-22	Capital Project Title WQIS Database - Functional Enhanceme	Capital Project Description Upgrade of the water quality database with additional functionality.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale Funds are required to update the existing database with additional functionality to remain consistent with the data being recorded.		
Proj. No. 16-24	Capital Project Title pH Corrosion Study	Capital Project Description Study potential risks and solutions to corrosion due to low pH.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale As part of the strategic planning process, a study of the potential risks and solutions to corrosion due to low pH is required.		
Proj. No. 18-09	Capital Project Title WQ - Main Lab Renovation and Consolid.	Capital Project Description Renovation of the water quality lab to consolidate services.
Asset Class Buildings	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale The main lab will be redesigned, upgraded and consolidated with the SPWWTP lab within the existing main lab space. All laboratory services (drinking water, wastewater) and staff will be located within one accredited facility.		
Proj. No. 18-26	Capital Project Title Supply Management (Sooke Res) Modeli	Capital Project Description Assess impacts of regional precipitation patterns on regional water supply.
Asset Class Engineered Structures	Board Priority Area Other	Corporate Priority Area Drinking Water
Project Rationale This item is to study the implications of shifts in regional precipitation patterns associated with climate change will be applied to the regional water supply.		

Service: 2.670

Regional Water Supply

Proj. No.	18-27	Capital Project Title	Paperless Data Management Project	Capital Project Description	Develop paperless system for records management
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This item is for design and implementation of paperless laboratory for process improvement: reduction of paper work, increased efficiency, automating regulatory compliance, reducing cost and paper waste. The goal is to integrate with new EQIS system when it is live and using electronic records as official records.				
Proj. No.	19-26	Capital Project Title	Drinking Water Safety Plan for Sooke System	Capital Project Description	Expand the existing DWSP to include Sooke
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	A drink water safety plan is required for the the Sooke system. Funds are required to expand the drinking water safety plan to include the Sooke system.				
Proj. No.	19-29	Capital Project Title	Leech River Water Quality Monitoring	Capital Project Description	Monitor water quality from the Leech River prior to utilizing it.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Prior to utilizing the Leech River as an additional drinking water source, water quality monitoring is required to determine if it is a suitable water source with the current treatment technology utilized. Funds are required to monitor and analyze the water quality from the Leech River.				
Proj. No.	20-03	Capital Project Title	Leech River Watershed - Implications for	Capital Project Description	Develop program to evaluate water quality implications of adding Leech watershed to supply system.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This item is to develop and implement a research program to evaluate the implications of adding Leech Watershed water supply to existing Sooke Reservoir when future demand exceeds current supply				
Proj. No.	20-04	Capital Project Title	Sooke Lake HyDy Model Preparations	Capital Project Description	Installation of additional monitoring devices to inform model development
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This item for installation of additional monitoring devices and equipment to inform the hydy model development.				

Service: 2.670

Regional Water Supply

Proj. No. 20-31

Capital Project Title Lab Information Management System

Capital Project Description Procure and implement a Lab Information Management System to manage the data being recorded.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale To maintain the water quality lab certification and manage the data being recorded, funds are required to procure and implement a Lab Information Management System.

Proj. No. 21-06

Capital Project Title Sooke Lake HyDy Model Development

Capital Project Description Build a 3D hydrodynamic model of Sooke Lake Res.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale This item is construct a hydrodynamic model of the Sooke Lake Reservoir to inform water quality and possible future capital works.

Proj. No. 17-27

Capital Project Title Watershed Bridge and Culvert Replacement

Capital Project Description Replacement of small culverts and bridges throughout the GVWSA.

Asset Class Engineered Structures

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale This provides annual funding for the replacement of culverts and bridges that have reached end of life and/or are undersized given present knowledge of potential peak water flows and anticipated climate change effects. With the completion of peak flow modelling of all major structures in the Sooke and Goldstream WSAs in 2017, additional funds are required beginning in 2018 to upgrade identified structures to current standards. Costs of upgrades have increased significantly in the last 5 years.

Proj. No. 17-28

Capital Project Title Watershed Security Infrastructure Upgrade and Replacement

Capital Project Description New, upgrade and replacement of security infrastructure in the GVWSA.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The outer boundary of the Leech, Sooke and Goldstream Water Supply Areas is approximately 119 kilometers in length. Main access roads are gated and there are 11 kilometers of existing security fencing. A constant effort is needed to maintain a Closed Watershed Policy. Through monitoring, high incident areas are identified, security plans are developed, and security infrastructure (fencing, gates and signage) is installed or upgraded where required. An uplift in provisional funding requirement is foreseen in 2017 to upgrade and maintain Weeks Lake area security after the CRD Board decision to close the area to unauthorized public access; and, for additional fencing and/or gates to maintain a secure GVWSA with the implementation of the Sooke Hills Wilderness Trail (Trans Canada Trail).

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Proj. No.	17-29	Capital Project Title	Water Supply Area Equipment Replacement	Capital Project Description	Hydrometeorological, fireweather, wildfire suppression and water quality equipment replacement.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This provides annual funding for the replacement or upgrading of equipment for wildfire suppression and spill response, fire weather stations, hydro-meteorological monitoring and water quality sampling and monitoring equipment. Given an expansion of the hydrology and meteorology network of stations and sensors, an additional \$50,000 per year is added in 2020 and going forward.				
Proj. No.	17-30	Capital Project Title	Major Transmission Main Repairs	Capital Project Description	Kapoor Tunnel inspection and emergency repairs to the transmission mains.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Each year a visual inspection of this critical supply tunnel is carried out by CRD staff. This capital item allows for minor repairs that are discovered during these inspections. This also allows for annual funding for repair of emergency breaks on large diameter supply mains.				
Proj. No.	17-31	Capital Project Title	Transmission System Components Repl	Capital Project Description	Replacement and repair of transmission components.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This is an annual allowance for the capital costs for the replacement and repair of supply system components that fail under normal operation and maintenance during the year.				
Proj. No.	17-32	Capital Project Title	Revenue Meter Replacement	Capital Project Description	Replacement of minor equipment associated with revenue meter sites.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This is an annual allowance for minor equipment replacement or repair related to the revenue water meters, vaults and electrical and electronic equipment.				

Service: 2.670

Regional Water Supply

Proj. No.	17-33	Capital Project Title	Disinfection Equipment Parts Replaceme	Capital Project Description	Replacement of incidental equipment and parts associated with the disinfection system.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The annual work includes the replacement of the plastic gas feed piping that has become very brittle, installing air valves on the ammonia solution lines, installing and replacing shut off valves on the booster pumps supply piping, installing indicator stems on UV cooling water valves, relocating the UV cooling water feed pipes, improving the landscaping around the UV building to reduce dust and other minor upgrades.				
Proj. No.	17-34	Capital Project Title	Supply System Computer Model Update	Capital Project Description	Annual update of the regional hydraulic model.
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This item is to allow for staff and consultant time each year to keep the hydraulic computer model current.				
Proj. No.	19-16	Capital Project Title	Dam Improvements	Capital Project Description	Items not covered by Dam Safety Reviews, but brought up in Dam Safety Inspections
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Dam Satey Inspections are carried out throughout the year and result in minor improvements at each dam annually. These improvements are minor in nature and are typically not covered in the Dam Safety Review. Funds are required to carry out the dam safety improvements resulting from Dam Safety Inspections.				
Proj. No.	19-22	Capital Project Title	SCADA Repairs & Equipment Replaceme	Capital Project Description	Items not covered by the SCADA Replacement and SCADA Master Plan, but integral in maintaining the SCADA System
Asset Class	Engineered Structures	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This item is to allow for unplanned SCADA repairs and equipment replacement not covered by the capital projects SCADA Replacement.				

Service: 2.670

Regional Water Supply

Proj. No.	17-35	Capital Project Title	Vehicle & Equipment Replacement (Fund	Capital Project Description	This is for replacement of vehicles and equipment used by CRD Water Services for the day-to-day operation and maintenance of the supply system.
Asset Class	Vehicles	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	This is for replacement of vehicles and equipment used by CRD Water Services for the day-to-day operation and maintenance of the supply system. The Equipment Replacement Fund is used to fund the expenditure.				
Proj. No.	20-22	Capital Project Title	Vehicle for the Dam Safety Program	Capital Project Description	New pick up
Asset Class	Vehicles	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	An additional pick up is required for the dam safety program.				
Proj. No.	20-23	Capital Project Title	Vehicle for the CSE Support Program	Capital Project Description	New Transit Van
Asset Class	Vehicles	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	A new Transit van is required to support the Confined Space Entry Support program.				
Proj. No.	20-24	Capital Project Title	Vehicle for the Asset Integration Program	Capital Project Description	New pick up
Asset Class	Vehicles	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	An additional pick up is required for the Asset Integration Program to aid in operational support of the RWSC.				
Proj. No.	20-25	Capital Project Title	Compactor for Watershed Road Program	Capital Project Description	New compactor attachment/trailer for road maintenance
Asset Class	Vehicles	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	To maintain the gravel roads within the Sooke and Goldstream Watershed areas a new compactor attachment/trailer is required.				

Service: 2.670/2.680

Regional Water Supply & JDF Water Distribution Combo

Proj. No. 16-01

Capital Project Title Upgrades to Buildings at 479 Island Highway

Capital Project Description Maintenance and changes to buildings and office layouts.

Asset Class Buildings

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The budget includes the following funds to upgrade and renew the buildings at 479 Island Highway:

- Repairs, upgrades and changes to the buildings (provisional \$50,000)
- Painting of hte buildings. (provisional \$10,000 annually)
- Repair and replacement of carpets, floors and walls. (provisional \$10,000 annually)
- Repair, refurbishment and replacement of equipment and property. (provisional \$10,000 annually)

Proj. No. 17-01

Capital Project Title Voice Radio Upgrade

Capital Project Description Replacement of end of life voice radio system repeaters, office, vehicle and handheld radios.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale Service Life and projected replacement:

- The service life of the mobile and portable units was forecast as 10 years at minimum, 15 years at maximum in 2005.
- The present radio models used in the system have just been taken out of production by the manufacturer, there will be no new units available for purchase as of July 1, 2015.
- Support for repairs and maintenance of the present radio will continue for the next 3 years at least.
- There are no pressing issues with equipment maintenance or repairs, present repair rates suggest we can maintain the system for the next few years, and perhaps reach a 12-15 year lifespan on the present equipment.

Mobile Radios: There are 100 Mobile radios in the system at present, all will need to be replaced.

Portable Radios: There are 90 Portable radios in the system at present all will need to be replaced.

Proj. No. 19-02

Capital Project Title Island Highway Cell Phone Coverage

Capital Project Description Increase cell phone coverage within 479 Island Highway, IWS offices.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale Cell phone coverage within 479 Island Highway, IWS Offices, is very poor. Funds are required to increase cell phone coverage.

Service: 2.670/2.680

Regional Water Supply & JDF Water Distribution Combo

Proj. No. 19-04

Capital Project Title Legistar -Granicus Implementation

Capital Project Description Implement Legistar - Granicus software at IWS.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The Legistar - Granicus software is a corporate standard for legislative agendas, approvals and publishing. Funds are required to implement this software at IWS.

Proj. No. 20-01

Capital Project Title Portable Pump Station

Capital Project Description Portable pump station to provide backup when a pump station is offline, in construction or to bypass a section of pipe.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale The RWS and JdF operation numerous water mains and pump stations. There are situations, when a pump station fails, construction of a pump station or bypassing a section of pipe, where a portable pump station is required to maintain the level of service. Funds will be used in 2020 to design and procure a portable pump station.

Proj. No. 16-04

Capital Project Title Implementation of a Fleet Management Solution (software)

Capital Project Description Development and implementation of a fleet management system.

Asset Class Equipment

Board Priority Area Other

Corporate Priority Area Drinking Water

Project Rationale It is proposed that IT undertake an evaluation to determine if the present CRD ERP software meets the needs of Corporate Fleet Management. A fleet management needs document has been compiled and IT has been consulted on fleet requirements, the first indication is that the existing system are not able to meet the requirements in a cost effective manner. The next step is to provide funding for an in depth review by the CRD of the present systems' ability to provide a business solution for Fleet Management. This was a recommendation from the 2011 Fleet Management Working Group. Pending the outcome of the evaluation, provision has been made for the configuration changes of the SAP modules to meet the needs or the implementation of a fleet management software solution. Having an acceptable solution available will ensure that all aspects of fleet management is integrated to the existing systems, to do fleet planning and achieve regulatory compliance. At present not all data required for optimum fleet management is being captured and the systems that are in place are not linked together resulting in extensive staff hours to assemble reports, statistics and forecasts. i.e. provincial GHG reporting, vehicle replacement cycles, driver records etc.

Service: 2.670/2.680

Regional Water Supply & JDF Water Distribution Combo

Proj. No.	17-02	Capital Project Title	SCADA Hardware Upgrading and Replacement	Capital Project Description	Upgrade and replacement of SCADA equipment as required.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	The SCADA system needs continuous upgrading and repairs to keep it at present day standards. If the system is allowed to age, replacement components are more difficult to obtain, as well the utilization of the system becomes limited. Electronic components fail due to a variety of reasons and it is difficult to project their life expectancy. Provision includes budget for the replacement of radios that fail before the planned future upgrade of the radio system and an allowance for a study to evaluate the use of the Motorola versus the SCADA pack data handling devices. The outcome of this study will have an impact on the future radio replacements.				
Proj. No.	17-03	Capital Project Title	Office Equipment, Upgrades and Replacements	Capital Project Description	Upgrade and replacement of office equipment as required.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	Funds will be used for the replacement and upgrading of office equipment and furniture, as required.				
Proj. No.	17-04	Capital Project Title	Computer Upgrades	Capital Project Description	Annual upgrade and replacement program for computers, copiers, printers, network equipment as required.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<p>This is an annual upgrading and replacement program of computers, photocopiers, network, monitoring and associated equipment, as required. This item has been increased from \$160,000 to \$175,000 annually to reflect actual costs.</p> <p>Capital Budget Network Switch Maintenance \$10,000 Additional Wireless Access Points and Maintenance \$15,000 Photocopier Replacement \$20,000 Additional Data Storage \$15,000 Replacement Computers \$75,000 Equipment Maintenance (contingency) \$23,000 Replace Access Control System - Gates/ Video Cameras \$12,000 Total Capital \$170,000</p>				

Service: 2.670/2.680

Regional Water Supply & JDF Water Distribution Combo

Proj. No.	17-05	Capital Project Title	Development of the Maintenance Management Systems	Capital Project Description	Develop maintenance management system.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<i>The maintenance management system needs further development to meet user needs and to facilitate reporting. It is proposed that funds be approved for the following IT related projects:-</i> <ul style="list-style-type: none">• <i>Develop a dashboard to display information.</i>• <i>Investigate standardization of SAP mobile platform.</i>				
Proj. No.	17-06	Capital Project Title	Small Equipment & Tool Replacement (Water Operations)	Capital Project Description	Replacement of tools and small equipment for Water Operations as required.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<i>Funds will be used for replacement of a variety of Operations and Welding equipment such as cutting saws, portable generators, gas detectors, Hilti drills, plasma cutter, wire welder, etc.</i>				
Proj. No.	17-07	Capital Project Title	Small Equipment & Tool Replacement (Corporate Fleet)	Capital Project Description	Replacement of tools and small equipment for Fleet as required.
Asset Class	Equipment	Board Priority Area	Other	Corporate Priority Area	Drinking Water
Project Rationale	<i>Funds will be used for replacement of a variety of Fleet small equipment and tools as required. This includes provision to replace the Vehicle OBD reader for reading engine codes and the shop air compressor.</i>				

2.670 Regional Water Supply
Asset/ Reserve Schedule
2020 - 2024 Financial Plan

Asset Profile

Regional Water Supply

System assets include the lands, dams and source water reservoirs within the water supply areas, intake and source conduits, two water treatment plants, pressure regulating facilities, nine supply mains, three balancing reservoirs and revenue water meters in the water transmission system.

Equipment Replacement Reserve Schedule

Reserve Fund: 2.670 Regional Water Supply Equipment Replacement Reserve (covered by CRD-ERF Bylaw)

Fund: 1022 Fund Center: 101454

	Actual	Estimate	Budget				
	2018	2019	2020	2021	2022	2023	2024
Beginning Balance	2,520,718	2,510,919	2,112,720	2,100,064	2,248,692	2,433,799	2,710,783
Equipment purchases (Based on Capital Plan)	(438,602)	(850,000)	(367,000)	(185,000)	(150,000)	(50,000)	(250,000)
Transfer from Operating Budget	268,920	274,301	299,294	305,878	312,607	319,484	326,513
Proceeds on disposals	109,210	127,500	55,050	27,750	22,500	7,500	37,500
Interest Income*	50,673	50,000					
Ending Balance \$	2,510,919	2,112,720	2,100,064	2,248,692	2,433,799	2,710,783	2,824,796

General Comments:

Reserve Fund is used for the purpose of replacing fleet vehicles including heavy equipment and associated mobile components, as outlined in the capital plan. Proceeds from disposals are estimated at 15% of replacement equipment purchases. Note not all vehicles are sold within the year in which they are replaced.

* Interest should be included in determining the estimated ending balance for the current year. Interest in planning years nets against inflation which is not included.