

# UTILITIES

# CAPITAL PLAN - Utilities

\$9,028,000

Amount directly funded by rates

\$3,340,000

## How the Utility Capital Plan is deployed:

### Strategic Plan Projects

\$0

Amount directly funded by rates

\$0

### Master Plan Projects

\$4,100,000

Amount directly funded by rates

\$3,100,000

### Municipal Services Projects

\$4,928,000

Amount directly funded by rates

\$240,000

#### GROWTH (Incl. DCC)

\$3,500,000

Amount funded by rates

\$0

#### FACILITIES UPGRADES

\$0

Amount funded by rates

\$0

#### INFRASTRUCTURE UPGRADES & REPLACEMENTS

\$1,310,000

Amount funded by rates

\$240,000

#### EQUIPMENT UPGRADES & REPLACEMENT

\$118,000

Amount funded by rates

\$0

Capital Summary		ANNUAL COST					TOTAL	FINANCING TYPE					TOTAL
Ref #	Project Name	2021	2022	2023	2024	2025	COST	DCC's	DEBT	GRANTS	RESERVES	RATES	COST
<b>WASTE WATER</b>													
30	CP-DCC S2 WWTP Upsize Future Growth-Eng	3,000,000	8,500,000	-	-	-	11,500,000	2,000,000	-	8,550,000	950,000	-	11,500,000
31	CP - Mamquam Rd. Sewer Upgrade	700,000	-	-	-	-	700,000	-	-	-	700,000	-	700,000
32	CP-Sewer System Repair and Replacement-Eng	1,400,000	1,400,000	1,400,000	550,000	550,000	5,300,000	-	-	-	-	5,300,000	5,300,000
33	CP-WWTP Repair and Replacement-PW	300,000	300,000	300,000	300,000	300,000	1,500,000	-	-	-	-	1,500,000	1,500,000
34	CP - SCADA Hardware Replacement	30,000	30,000	30,000	30,000	30,000	150,000	-	-	-	-	150,000	150,000
35	CP-Sanitary Lift Station Pump Asset Management Program	50,000	25,000	50,000	50,000	50,000	225,000	-	-	-	-	225,000	225,000
36	CP - Portable Power Quality Meter	13,000	-	-	-	-	13,000	-	-	-	-	13,000	13,000
37	CP - Central to Queensway Forcemain Corrosion Control System	50,000	-	-	-	-	50,000	-	-	-	-	50,000	50,000
38	CP - Sewer Force Main Air Valve Replacement Program	20,000	20,000	-	-	-	40,000	-	-	-	-	40,000	40,000
39	CP - WWTP Power Quality Study	52,000	-	-	-	-	52,000	-	-	-	-	52,000	52,000
41	CP-DCC S8 S10 Chiefview & Tantalus Sewer Upgrade-Eng	-	-	2,500,000	-	-	2,500,000	2,500,000	-	-	-	-	2,500,000
42	CP-Queensway Lift Station Reconstruction WW-Eng	-	-	1,400,000	-	-	1,400,000	-	-	-	1,400,000	-	1,400,000
43	CP-New Tandem Axle Vacuum Truck (V9431)-PW	-	-	600,000	-	-	600,000	-	-	-	600,000	-	600,000
44	CP-Ford F550 Utility Service Truck Repl (V9431)-PW	118,000	-	-	-	-	118,000	-	-	-	118,000	-	118,000
45	CP - WWTP new garage roof	-	-	-	38,000	-	38,000	-	-	-	-	38,000	38,000
		<b>5,733,000</b>	<b>10,275,000</b>	<b>6,280,000</b>	<b>968,000</b>	<b>930,000</b>	<b>24,186,000</b>	<b>4,500,000</b>	<b>-</b>	<b>8,550,000</b>	<b>3,768,000</b>	<b>7,368,000</b>	<b>24,186,000</b>
<b>WATER</b>													
20	CP-DCC W15 New Reservoir-Eng	500,000	4,000,000	-	-	-	4,500,000	4,500,000	-	-	-	-	4,500,000
21	CP-Fire Hydrant Installation-PW	30,000	30,000	30,000	30,000	-	120,000	-	-	-	-	120,000	120,000
22	CP-Water Meter Installations-Eng	1,000,000	-	-	-	-	1,000,000	-	1,000,000	-	-	-	1,000,000
23	CP-Annual Water System Repair and Replacement-Eng	1,350,000	1,350,000	1,350,000	1,350,000	1,350,000	6,750,000	-	-	-	-	6,750,000	6,750,000
25	CP - Mini Excavator for Public Works Utilities	-	85,000	-	-	-	85,000	-	-	-	-	85,000	85,000
26	CP - Flow Meters for Power House Springs Wells	45,000	-	-	-	-	45,000	-	-	-	-	45,000	45,000
29	CP-Water Connections-PW	80,000	80,000	80,000	80,000	80,000	400,000	-	-	-	-	400,000	400,000
		<b>3,005,000</b>	<b>5,545,000</b>	<b>1,460,000</b>	<b>1,460,000</b>	<b>1,430,000</b>	<b>12,900,000</b>	<b>4,500,000</b>	<b>1,000,000</b>	<b>-</b>	<b>-</b>	<b>7,400,000</b>	<b>12,900,000</b>
<b>SOLID WASTE</b>													
1	CP-Landfill Gas Capture and Flare-Eng	200,000	-	-	-	-	200,000	-	-	-	200,000	-	200,000
2	CP - Transfer Station Fence	90,000	-	-	-	-	90,000	-	-	-	90,000	-	90,000
3	CP - Landfill Site Expansion	-	-	-	800,000	6,350,000	7,150,000	-	6,000,000	-	1,150,000	-	7,150,000
		<b>290,000</b>	<b>-</b>	<b>-</b>	<b>800,000</b>	<b>6,350,000</b>	<b>7,440,000</b>	<b>-</b>	<b>6,000,000</b>	<b>-</b>	<b>1,440,000</b>	<b>-</b>	<b>7,440,000</b>

**DISTRICT OF SQUAMISH 2021-2025 FINANCIAL PLAN  
CAPITAL PROJECTS - UTILITY FUND**

Ref #	Project Name	Project Description	Project Justification Benefits
<b>SOLID WASTE PROJECTS</b>			
1	<b>Landfill Gas Capture and Flare</b>	Complete design and installation of landfill gas capture system and flare stack to burn off methane and convert to carbon dioxide, thereby reducing the District's greenhouse gas production.	Installation of a landfill gas capture system can mitigate approximately 75% of the GHG emissions associated with the vertical expansion of the landfill. Reducing the District's GHG production will reduce the amount the District needs to purchase for carbon offsets.
2	<b>Transfer Station Fence</b>	Install a new fence around the transfer station.	Prevent trespassing, mischief, scavenging in Transfer Station, and protect electric wildlife fence
3	<b>Landfill Site Expansion</b>	This project entails design services and construction to expand landfill to accommodate waste management needs. Physical works include construction of road network, liner, and leachate collection system and treatment works for Phase 4 to be ready to receive waste in 2026. There is potential for this to be pushed by 1 year if capacity allows. 2019 capacity analysis indicated capacity will be reached between mid 2024 and early 2027. Project includes construction of expansion area for Transfer Station & Recycling Depot.	Landfill is expected to reach capacity by 2026 and requires expansion in order to continue to accept community solid waste.

**DISTRICT OF SQUAMISH 2021-2025 FINANCIAL PLAN  
CAPITAL PROJECTS - UTILITY FUND**

Ref #	Project Name	Project Description	Project Justification Benefits
<b>WASTE WATER PROJECTS</b>			
30	<b>WWTP Upgrade for Future Growth</b>	This project will address an existing capacity shortage at the Wastewater Treatment Plant by expanding the bioreactor and completing associated works such as relocating the septage station and upgrading electrical and controls. The project also includes replacement of the existing blowers in a new blower building. This will significantly reduce energy consumption.	This upgrade is in line with the Liquid Waste Management Plan and is required to maintain compliance with the Provincial Municipal Wastewater Regulations. The project will also accommodate ongoing community growth.
31	<b>Mamquam Road Sewer Upgrade</b>	Upgrade 300m of sewers along Mamquam Rd to address existing capacity shortfalls and allow further growth at Quest University.	Project is necessary to allow further growth and is funded from developer reserves.
32	<b>Sewer System Repair and Replacement</b>	70% of the sanitary sewer system is comprised of asbestos-cement pipe which, according to the Asset Management Plan, has a remaining service life of 9-12 years. Much of the system will reach the end of its service life over a 10 year window between 2017-27. The asset management plan and long term financial plan recommend annual funding be provided for a) sewer replacement/rehabilitation or b) to contribute to sewer reserves so that funding is available when the majority of the system reaches the end of its service life over a short time period.	The District's sewer system has significant stormwater inflow and infiltration (I&I) which require that the mains, pump stations and treatment plants be over-sized to accommodate the peak wet weather flows. It also requires that the pump stations and the wastewater treatment plant use more energy since they are required to pump and treat stormwater flows in addition to sewage. I&I can be significantly reduced by replacing/rehabilitating the sewer system where leaks and cross connections are present. In addition, the cost of replacing sewer mains proactively, as opposed to reactively has been proven to be a much more cost effective approach to sewer infrastructure management.
33	<b>WWTP Repair and Replacement</b>	This project will repair and replace aging components of the wastewater treatment plant in accordance with the WWTP Asset Management Plan.	The wastewater treatment plant is a critical piece of infrastructure that maintains acceptable water quality in the Squamish River. Proper asset management is essential to ensure continued performance.
34	<b>SCADA Hardware Replacement</b>	Replace and upgrade existing SCADA software (computer system) that monitors and runs all of the District's Water, Sanitary Sewer and Storm infrastructure.	The current software is nearing the end of its useful life. An upgrade would allow better reporting and recordkeeping of data collected by the SCADA system to be used for various Public Works and Engineering studies, capital and operating projects. This project would put all Public Works infrastructure on a common SCADA software as it is currently divided between two.
35	<b>Sanitary Lift Station Pump Asset Management Program</b>	Replacement and rebuilding of sewage lift station pumps that are at end-of-life or have either failed or test results indicate that will fail soon.	Replacement of pumps that are at the end of their useful life and/or have already failed. Predictive and preventative replacement of lift station pumps on an Asset Management Plan schedule before they fail reduces the risk of private property sewage back ups and lift station overflows and also reduces costs related to call-outs and overtime when the pumps do fail.
36	<b>Portable Power Quality Meter</b>	Portable power quality meter to help electrical staff diagnose and investigate power supply issues	Currently renting this equipment at \$1000 / week and rental equipment does not provide adequate measurement resolution
37	<b>Central to Queens Way Forcemain Corrosion Control System</b>	Queens Way lift station condition assessment has identified that significant corrosion from H2S has reduced the expected service life of the infrastructure. A corrosion control dosing system is required for Central lift station to reduce long term effects.	Replacement of Queens Way lift station is estimated to cost upwards of \$3.5 million. Controlling ongoing corrosion issues will allow significant extension of the infrastructure lifespan over the current trajectory.
38	<b>Sewer Force Main Air Valve Replacement Program</b>	Replacement of nine sewer force main air valves over two years.	Best management practices for asset management. Public health and environmental protection.
39	<b>WWTP Power Quality Study</b>	Study and review of WWTP power quality.	Intermittent power quality issues (such as phase loss, transient voltage drop out and poor power harmonics) are experienced at the WWTP. These events can cause damage to expensive WWTP electrical, control and mechanical equipment.
40	<b>Waterfront Fiber Optic Cable Installation</b>	Installation of fiber optic cable from Lauralwood PRV to Scott Crescent Lift Station and both Waterfront Lift Stations	Buried fiber optic SCADA communication networks are more reliable than radio communications.
41	<b>Chiefview &amp; Tantalus Sewer Upgrade</b>	Chiefview & Tantalus Sewer Upgrade	Chiefview & Tantalus Sewer Upgrade - DCC 58 upsize for future growth
42	<b>Queens Way Lift Station Reconstruction WW-Eng.</b>	Pre-design for Queens Way Lift Station repair and replace wet well in 2023.	Based on the Public Works Infrastructure Asset Management Plan (endorsed by Council in 2011), the District should be investing approximately 2% annually in capital asset rehabilitation.

**DISTRICT OF SQUAMISH 2021-2025 FINANCIAL PLAN  
CAPITAL PROJECTS - UTILITY FUND**

Ref #	Project Name	Project Description	Project Justification Benefits
43	<b>New Tandem Axle Vacuum Truck (V9431)-PW</b>	Tandem axle combination truck. Unit is capable of hydroexcavating, sanitary and storm sewer flushing, lift station cleaning, WWTP tank cleaning, catch basin cleaning and other general solid / liquid vacuum pick up.	Sanitary Sewer and Stormwater Master Plans both recommend regular flushing and cleaning of the sanitary and storm sewer collection systems. Currently the DOS owns 23 sanitary sewer lift stations that require quarterly and sometimes monthly cleaning. This is currently completed using contracted combination vacuum trucks from the city as there are no vacuum truck contractors in Squamish. An additional 4 lift stations will be added through growth in 2019 and 2020 which will require regular cleaning.
44	<b>Ford F550 Utility Service Truck Repl (V9431)-PW</b>	Identified for replacement by the Fleet Replacement Plan as enacted by the District of Squamish Equipment Replacement Reserve Fund Bylaw No. 538,1976.	Identified for replacement by the Fleet Replacement Plan as enacted by the "District of Squamish Equipment Replacement Reserve Fund Bylaw No.538, 1976"
45	<b>WWTP new garage roof</b>	Replacement roof for 1970's building per facilities asset management best practice.	Maintenance of assets extends useful life
<b>WATER PROJECTS</b>			
20	<b>DCC W15 - New Reservoir</b>	In accordance with the Water Master Plan, a new reservoir is needed in order to address an existing deficiency and allow for continued growth, a new reservoir is needed to service infill redevelopment and new growth areas. The new reservoir will also help to address pump cycling issues at the Powerhouse Springs wellfield.	Address existing fire storage deficiency. Address pump cycling issues. Allow for continued community growth.
21	<b>Fire Hydrant Installation</b>	Install fire hydrants in areas that are known to be deficient. Last few years of an ongoing upgrading program. Scheduled to end in 2024.	Reduce risk in existing neighbourhoods.
22	<b>Water Meter Installations</b>	Add water meters to all remaining institutional, commercial and industrial and multi-family residential customers as well as all municipal facilities. Year three of a planned four year process. Continuation of work from 2018 -2020.	Metering ICI, MF + municipal facilities will allow for better water tracking and will allow for equitable billing based on usage amongst those customers. This strategy was adopted by Council.
23	<b>Water System Repair and Replacement</b>	Repair and replace watermains, pressure reducing valves and other water system components in accordance with Water Master Plan.	Based on the Public Works Infrastructure Asset Management Plan (endorsed by Council in 2011), the District should be investing approximately 2% annually in capital asset rehabilitation. Currently, over 70% of the water system is comprised of AC (asbestos concrete) pipe at or nearing the end of its life. Replace these mains will reduce frequency of breaks and emergency repairs resulting in lower overall costs. Replacement will also reduce water loss due to leaking pipes.
24	<b>Ford F550 Utility Service Truck Replacement (V9431)</b>	Replacement of the Water Departments Ford F550 Utility Service Truck.	Identified for replacement by the Fleet Replacement Plan as enacted by the "District of Squamish Equipment Replacement Reserve Fund Bylaw No. 538,1976." As of 2019 there is \$98,480 in the Fleet Replacement Fund for this vehicle.
25	<b>Mini Excavator for Public Works Utilities</b>	Mini excavator for Public Works use (Utilities, Roads and Drainage, Parks).	Currently renting equipment.
26	<b>Flow Meters for Power House Springs Wells</b>	Installation of flow meters for Power House Springs Wells No. 1 and No. 2.	Currently PHS wells No. 1 and No. 2 do not have flow meters. Well water production data (flow) is required to conduct ongoing monitoring for well capacity reductions that occur over time. Not having this data may result in undetected well failure potentially creating a situation where Power House Springs cannot meet water demand which could result in activation of an emergency surface water source and ultimately necessitating a boil water advisory as advised by VCH and reduced consumer confidence.

# SPECIAL PROJECTS - Utilities

\$706,800

Amount directly funded by rates

\$493,500

## How the Utility Special Projects Plan is deployed:

Master Plan Projects **\$200,000**

Amount directly funded by rates **\$200,000**

Municipal Services Projects **\$506,800**

Amount directly funded by rates **\$236,000**

**CAPACITY BUILDING** **\$89,800**

Amount funded by rates **\$21,500**

**CYCLICAL OPERATIONS** **\$0**

Amount funded by rates **\$0**

**INFRASTRUCTURE  
OPERATIONS & MAINTENANCE** **\$299,500**

Amount funded by rates **\$179,500**

Net impact on tax revenue required over 2018 **0.0%**

**FACILITIES  
OPERATIONS & MAINTENANCE** **\$60,000**

Amount funded by rates **\$35,000**

Net impact on tax revenue required  
over 2018 **0.0%**

**GROWTH (Incl. DCC)** **\$57,500**

Amount funded by rates **\$57,500**

SPECIAL OPERATING PROJECTS		ANNUAL COST					TOTAL
Ref #	Project Name	2021	2022	2023	2024	2025	COST
<b>SOLID WASTE</b>							
1	SP-Landfill Expansion Pre-Design & Permitting	57,500	78,750	30,000	-	-	166,250
3	SP - Landfill electrical upgrades	10,000	-	-	-	-	10,000
4	SP-Solid Waste Bylaw Outreach-Solid Waste	68,300	-	-	-	-	68,300
5	SP-Landfill Security/IT System Upgrades-Eng Study	15,000	-	-	-	-	15,000
5	SP-Curbside Collection Analysis	35,000	-	-	-	-	35,000
6	SP-Recycling Depot Pre-Design	30,000	20,000	-	-	-	50,000
	SP-Landfill Hydrogeology and Hydrology						
7	Characterization Report	20,000	-	-	-	-	20,000
8	SP-Landfill Camp Clean Up	35,000	-	-	-	-	35,000
<b>SOLID WASTE</b>		<b>270,800</b>	<b>98,750</b>	<b>30,000</b>	<b>-</b>	<b>-</b>	<b>399,550</b>
<b>WASTE WATER</b>							
30	SP-Major Tools Replacement-Waste Water PW	10,000	10,000	-	-	-	20,000
31	SP-Fall Arrest Upgrades-Waste Water Services PW	10,000	-	-	-	-	10,000
32	SP-Sewer System Electrical Safety Upgrades- PW	25,000	25,000	25,000	25,000	-	100,000
33	SP-WW Replace/Upgrade Aging SCADA Software-PW	50,000	50,000	50,000	-	-	150,000
34	SP - WWTP fire safety upgrades	35,000	-	-	-	-	35,000
35	SP-Specialty Sewer Tools	11,500	-	-	-	-	11,500
	SP-WWTP Outfall Extension Pre-Design/ Environmental						
36	Impact Study Update	100,000	-	-	-	-	100,000
<b>WASTE WATER</b>		<b>241,500</b>	<b>85,000</b>	<b>75,000</b>	<b>25,000</b>	<b>-</b>	<b>426,500</b>
<b>WATER</b>							
20	SP-Plateau/Thunderbird Reservoir Condition Assessment:	-	50,000	50,000	-	-	100,000
21	SP-Water Master Plan Update/Rate Study	100,000	-	-	-	-	100,000
22	SP-Confined Space Entry Program Review & Update	58,000	-	-	-	-	58,000
23	SP-SCADA VT Software Replacement & Upgrade	26,500	38,000	13,500	-	-	78,000
24	SP-Feasibility Assessment For Fiber Optic Connection	10,000	-	-	-	-	10,000
<b>WATER</b>		<b>194,500</b>	<b>88,000</b>	<b>63,500</b>	<b>-</b>	<b>-</b>	<b>346,000</b>
<b>TOTAL - UTILITIES</b>		<b>706,800</b>	<b>271,750</b>	<b>168,500</b>	<b>25,000</b>	<b>-</b>	<b>1,172,050</b>



**DISTRICT OF SQUAMISH 2021-2025 FINANCIAL PLAN  
SPECIAL OPERATING PROJECTS - UTILITY FUND**

Ref #	Project Name	Project Description	Project Justification Benefits
<b>SOLID WASTE PROJECTS</b>			
1	<b>Landfill Expansion Pre-Design &amp; Permitting</b>	Complete a pre-design to determine estimated construction cost and land requirements to construct a horizontal landfill expansion.	The current vertical expansion of the landfill is anticipated to provide several additional years of space at the landfill, however, a horizontal expansion will be required in approximately 5-10 years (depending on success of waste reduction initiatives) and it is necessary to begin planning to complete consultation, secure crown land tenure and gain necessary approvals.
2	<b>Landfill Security/IT System Upgrades</b>	Increased and comprehensive security system at the Landfill as well as IT upgrades to ensure consistent connectivity for the software and security systems to run on.	To ensure security and safety at the site of both contractors and the public, as well as for liability purposes as there is currently no one onsite at night.
3	<b>Landfill Electrical Upgrades</b>	The staffing facility at the landfill is used daily year round. The current cooling unit is end of life and no longer efficient. Baseboards are used for heating. This project proposes to replace the wall unit and baseboards with a dual wall unit that will provide heat and cooling. Wiring in the building will be updated at the same time.	This will reduce reliance on an inefficient cooling unit. The heating baseboards are not suitable for such an environment as space is cramped and they get covered in dirt. The new unit and wiring will provide an improved and safe occupant experience.
4	<b>Solid Waste Bylaw Update - Outreach and Engagement</b>	A part-time position will provide education, outreach and engagement regarding single-use plastic reduction and source-separation of organic and recyclables to multi-family homes (MFH) and institutional, commercial and industrial (ICI) properties. Funds will support all these activities.	This project ensures that MFH and ICI properties are supported in the transition to mandatory recycling for compliance in align with the Solid Waste Utility Bylaw. The implementation of an organics and recyclable disposal ban (via the Solid Waste Bylaw) is considered a priority due to the growth that the District is currently experiencing, the limited airspace remaining in the Squamish landfill. Additionally, this project supports the District's efforts in reducing single-use item usage within the community.
5	<b>Curbside Collection Analysis</b>	Conduct a review of the existing residential curbside collection system and investigate alternatives (in keeping with the BCMP), that could include: a communal waste collection system for residential neighbourhoods; create fully fenced and staffed transfer stations; requirements for metal sheds for tote storage for new residential developments, etc. The analysis will identify options available to reduce access based on strategies used in other communities, and Squamish-specific constraints.	While the existing totes provided by GFL are certified to be bear-resistant, they are still being accessed by bears, even when used correctly. The purpose of the Curbside Collection Analysis is to address the wildlife attractant issues associated with the current collection system, to protect the safety of residents and bears.
6	<b>Recycling Depot Pre-Design</b>	Complete pre-design and analysis for an alternate recycling depot in the event that GFL discontinues the depot on Queens Way.	GFL has the option of giving notice to discontinue operating a RecycleBC Depot at their Queens Way location in 2021 (6 months notice). The District would need to find an alternative site and/or expand the Depot at the Landfill.
7	<b>Landfill Hydrogeology and Hydrology Characterization Report</b>	Complete hydrologic and hydrogeologic assessment to determine surface and groundwater impacts resulting from precipitation on the landfill site	This is a requirement of the Operational Certificate with the BC Ministry of Environment.
8	<b>Landfill Camp Clean Up</b>	A significant volume of waste materials have accumulated in several camps in the buffer zone around the Landfill, due to unauthorized scavenging and occupation. Clean up costs will be split between DOS and the Province, and this is the estimate for the DOS portion. Clean up will be coordinated by Public Works and will require contractor services for heavy equipment and manual labour.	These camps pose a risk to public health and the environment, and need to be cleaned up in accordance with the DOS lease agreement with the Province.

**DISTRICT OF SQUAMISH 2021-2025 FINANCIAL PLAN  
SPECIAL OPERATING PROJECTS - UTILITY FUND**

Ref #	Project Name	Project Description	Project Justification Benefits
<b>WASTE WATER PROJECTS</b>			
30	<b>SP-Major Tools Replacement-Waste Water PW</b>		
31	<b>Fall Arrest Upgrades</b>	2016 engineering review recommended additional safety and fall arrest upgrades at numerous wastewater collection facilities and at the wastewater treatment plant. This program is to remediate safety deficiencies and gain compliance with WorksafeBC.	Out of compliance with WorkSafeBC regulations. Engineering review has identified numerous deficiencies.
32	<b>Sewer System Electrical Safety Upgrades</b>	Multi-year project to address safety risks identified by Electrical Department.	Existing electrical cabinets do not meet current electrical codes and poses a safety risk to staff. Electrocution Risk!
33	<b>Replace / Upgrade Aging SCADA Software</b>	Replace and upgrade existing SCADA software (computer system) that monitors and runs all of the District's Water, Sanitary Sewer and Storm infrastructure.	The current software is nearing the end of its useful life. An upgrade would allow better reporting and recordkeeping of data collected by the SCADA system to be used for various Public Works and Engineering studies, capital and operating projects. This project would put all Public Works infrastructure on a common SCADA software as it is currently divided between two.
34	<b>SP - WWTP fire safety upgrades</b>	Some of the fire safety equipment such as strobe lights and emergency exit lights is end of life and requires replacing in the solids and grit rooms at the WWTP. The Canadian Electrical Code (CEC) now stipulates that all sewage handling facilities are considered explosive gas hazardous locations as per Section 18, Hazardous Locations of the CEC due to the presence of flammable liquids, chemicals and hydrogen sulfide. As such the equipment needs to be explosion proof so that it does not produce a spark. This project will replace the fixtures in these 2 buildings as per code.	The new fixtures will provide a safer environment for staff and will also last longer as the equipment is in casings that will protect the equipment from corrosion.
35	<b>SP-Specialty Sewer Tools</b>	Specialty tools for the Utilities Department (Wastewater) group	Specialty tools are required to prepare Sewer Utility operators to respond to sanitary and storm sewer main blockages and will allow operators and labourers to conduct their work more quickly, efficiently and safely thereby optimizing the use of their time and reducing injury rates.
36	<b>SP-WWTP Outfall Extension Pre-Design/ Environmental Impact Study Update</b>	Flows in the Squamish river in proximity to the WWTP outfall have been significantly changed due to significant growth of a large gravel bar that has cut off the main channel of the river from the outfall. This has resulted in inadequate mixing and dilution of effluent in the river which could lead to environmental and health issues. The District has completed a study to identify potential solutions. The recommended solution is to relocate the outfall roughly 400m south. This project will complete effluent mixing modeling (to ensure adequate effluent dilution), update the Environmental Impact Study and complete a preliminary design and cost estimate for the outfall extension.	It will be necessary to extend the outfall to ensure environmental protection and the safety of recreational water users in the Squamish River.

DISTRICT OF SQUAMISH 2021-2025 FINANCIAL PLAN SPECIAL OPERATING PROJECTS - UTILITY FUND			
Ref #	Project Name	Project Description	Project Justification Benefits
<b>WATER PROJECTS</b>			
20	<b>Plateau/Thunderbird Reservoir Condition Assessments</b>	Inspect reservoirs to assess condition and determine whether reservoirs should continue to be utilized in the future and any necessary remedial measures to reduce leakage.	Plateau/Thunderbird Reservoir Condition Assessments
21	<b>Water Master Plan Update/Rate Study</b>	The District completed its last Water Master Plan in 2015. The District has completed many of the recommendations in the report and requires new input to refine water system capital priorities and associated funding requirements. In addition, the District will complete installation of water meters in 2021 and implement a new water rate structure in 2022. This plan will include analysis and recommendations for the new water rate structure.	This project will follow Official Community Plan policy to "Prepare and review water, sewer and stormwater master plans every 5 years to identify existing capacities, short-term upgrading requirements and the long-term viability of the District's infrastructure systems." . IN addition, a rate study is required to implement a new water rate structure that achieves the goals of equitable billing, water conservation and full-cost recovery for the water utility.
22	<b>SP-Confined Space Entry Program Review &amp; Update</b>	Review and revision for the Districts Confined Space Entry Program.	The Districts Confined Space Entry program was last updated more than ten years ago and regulations relating to confined space entry have been updated / amended and a revision of the Districts confined space's and entry procedures need to be updated to meet the new regulatory standards.
23	<b>SP-SCADA VT Software Replacement &amp; Upgrade</b>	Replacement of the existing ClearSCADA software that monitors and controls all of the Districts Water, Sewer and Drainage infrastructure (62 sites in total) with VT SCADA.	Existing software product nearing end-of-life. An upgraded SCADA software platform will allow better operational data analysis to enable more efficient operations, support business case development, provide easy access to historical data for Public Works and Engineering capital and operating projects and will inform future infrastructure management decisions. Information is power!
24	<b>SP-Feasibility Assessment For Fiber Optic Connection</b>	Feasibility assessment to determine scope and cost to install fiberoptic SCADA communications cable to from Robin Drive to Power House Springs.	Risk. Critical infrastructure redundancy. Currently SCADA communication to / from Power House Springs is achieved via radio. If the radio signal were to be compromised, Public Works could lose SCADA monitoring and control capability at Power House Springs, ultimately requiring the station to be controlled locally (having staff on-site).