
To: Water Committee

From: Goran Oljaca, Director, Engineering and Construction, Water Services

Date: October 5, 2020 Meeting Date: October 8, 2020

Subject: **Water Services Capital Program Expenditure Update to August 31, 2020**

RECOMMENDATION

That the Water Committee receive for information the report dated October 5, 2020, titled “Water Services Capital Program Expenditure Update to August 31, 2020”.

EXECUTIVE SUMMARY

The capital expenditure reporting process as approved by the Board provides for regular status reports on capital expenditures 3 times per year. This is the second report for 2020 which includes both the overall capital program for Water Services with a multi-year view of capital projects and the actual capital spending for the 2020 fiscal year to August 31, 2020 in comparison to the prorated annual budget. In 2020 the annual capital expenditures for Water Services are \$148.1 million to date compared to a prorated annual capital budget of \$265.0 million.

Forecasted expenditures for the current Water Services capital program remain within the approved budgets through to completion.

PURPOSE

To report on the status of the Water Services capital program and financial performance for the 2020 fiscal year to August 31, 2020.

BACKGROUND

The capital expenditure reporting process as approved by the Board provides for regular status reports on capital expenditures with interim reports sent to the Water, Liquid Waste, Zero Waste, and Performance and Audit Committees, in July and October, with a final year-end report to the Committees and the Boards in April of each year.

This is the second in a series of three reports for 2020 and looks at both the overall capital program for Water Services with a multi-year view of capital projects and the actual capital spending for the 2020 fiscal year to August 31, 2020 in comparison to the prorated annual budget.

2020 CAPITAL EXPENDITURES

Capital Program Funding

The capital spending for Water Services is funded through the water operating budget by a combination of contribution to capital (pay-as-you-go funding) and debt service costs (principal and interest payments). As a result, the annual impact on the ratepayers is significantly less than the level of budgeted capital expenditures.

Overall Capital Program

The overall capital program for Water Services includes capital projects which require multiple years to complete. These projects are broken down into various phases such as project definition, pre-design, detailed design and construction. With the completion of each phase, more information is learned for the appropriate costing of subsequent phases.

It is expected that the capital spending on all Water Services capital projects completed in 2020 or ongoing at some point in 2020 will be under budget by approximately \$85.1 million, or within 1.6% of total budget.

Table 1 in Attachment 1 provides a summary of Water Services capital expenditures for both ongoing and completed projects. Completed Projects include a summary of actual spending compared to the Board approved spending limits while the Ongoing Projects include a summary of projected spending to completion compared to Board approved spending limits. With the rare exception, projects tend to complete with actual spending below the approved limits.

Attachment 2 provides the details behind the summary information including specific capital projects, summary financial information and notes where required. Attachment 3 provides additional project status information for some of the key projects included in Attachment 1 – Table 1.

2020 Capital Program Process

The Metro Vancouver financial planning process includes Board approval of both an annual Operating Budget (operations, contribution to capital and debt service) and an annual Capital Budget for the planned capital infrastructure projects. The annual Capital Budget comprises the projected spending for a list of capital projects either continuing or to be started within the calendar year.

In 2020, capital expenditures for Water Services are \$148.1 million to August 31, 2020 compared to a prorated annual capital budget of \$265.0 million. The total annual capital budget for 2020 is \$397.5 million.

The current underspend is due to several factors including delays in permitting and land acquisition, as well as COVID-19 impacts.

Forecasted expenditures for the current Water Services capital program remain within the approved budgets for 2020 and through to completion.

Table 2 in Attachment 1 provides a summary of the 2020 actual capital spending to August 31, 2020 compared to the Board approved capital budget and prorated budget to August 31, 2020.

Capital Program Impacts from COVID-19

During these unprecedented times of health and economic uncertainty, all departments have been monitoring the impacts of the pandemic on their operations. This includes capital program expenditures.

Overall, the impact to the Water Service's capital program has largely been schedule related, with some notable impacts to project expenditures confirmed to date. Staff are monitoring impacts on their projects

regularly. Some impacts to project schedules or expenditures are included under the respective project section of Attachment 3.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Capital expenditures are funded internally (pay as you go) and through debt service costs (interest and principal payments). As capital expenditures are incurred, short term financing is secured and converted twice per year to long term debt through the Municipal Finance Authority.

CONCLUSION

This is the second in a series of three reports on capital expenditures for 2020. Water Services is projecting to be under budget for capital projects ongoing or completed in 2020.

Forecasted expenditures for the current Water Services capital program are anticipated to remain within the approved budgets through to completion.

Attachments

1. Capital Expenditure Summary – Water Services (41236085)
2. Detailed Water Services Capital Expenditure Summary (41337886)
3. Water Services Capital Project Status Information (41234036)

41222344

ATTACHMENT 1

Metro Vancouver

Capital Expenditure Summary

Water Services

As at August 31, 2020

Table 1 – Ongoing and Completed Project Summary

	Total Projected to Completion	Total Budget	Projected Variance
Water Services			
Ongoing	\$ 6,345,491,000	\$ 6,405,691,000	\$ 60,200,000
Completed	4,912,000	6,700,000	1,788,000
Not Started	875,250,000	894,750,000	19,500,000
Cancelled	71,000	3,700,000	3,629,000
	\$ 7,225,724,000	\$ 7,310,841,000	\$ 85,117,000

Table 2 – August 2020 Capital Spending Summary

	2020 Budget	Prorated Budget to August 2020	Actual Expenditures	
Water Services				
Infrastructure Growth Capital	\$ 129,700,000	\$ 86,468,000	\$ 49,096,416	
Infrastructure Maintenance Capital	115,150,000	76,764,000	41,491,489	
Infrastructure Resilience Capital	132,550,000	88,366,000	50,616,915	
Infrastructure Upgrade Capital	19,100,000	12,733,000	6,921,669	
Opportunity Capital	1,000,000	667,000	-	
	\$ 397,500,000	\$ 264,998,000	\$ 148,126,489	55.9%

ATTACHMENT 2

Metro Vancouver
Water Services Capital Expenditures Summary
As of August 31, 2020

Project Name	Project Location	Lifetime						Status	Project on Schedule?	Note	Comments
		Total Project Budget	Total Expenditures to Date	Remaining Budget	Projected Expenditures	Projected Remaining Budget	Percent Complete				
Infrastructure Growth Capital											
Annacis Main No. 5 (Marine Crossing)	New West/Surrey	488,000,000	30,616,682	457,383,318	488,000,000	-	6%	Ongoing	Y		
Annacis Main No. 5 (North)	New Westminster	51,500,000	385,991	51,114,009	51,500,000	-	1%	Ongoing	Y		
Annacis Main No. 5 (South)	Surrey	56,400,000	2,045,134	54,354,866	56,400,000	-	4%	Ongoing	Y		
Cape Horn Pump Station No. 3	Coquitlam	56,950,000	415,993	56,534,007	56,950,000	-	1%	Ongoing	Y		
Coquitlam Intake No. 2 & Tunnel	Coquitlam	1,369,230,000	7,574,709	1,361,655,291	1,369,230,000	-	1%	Ongoing	Y		
Coquitlam Intake No. 2 (Water Treatment)	Coquitlam	957,000,000	343,229	956,656,771	957,000,000	-	1%	Ongoing	Y		
Coquitlam Main No. 4 (Cape Horn)	Coquitlam	149,600,000	985,723	148,614,277	149,600,000	-	1%	Ongoing	Y		
Coquitlam Main No. 4 (Central Section)	Coquitlam	297,470,000	2,532,392	294,937,608	297,470,000	-	1%	Ongoing	Y		
Coquitlam Main No. 4 (South Section)	Coquitlam	227,650,000	2,570,497	225,079,503	227,650,000	-	1%	Ongoing	Y		
Fleetwood Reservoir	Surrey	43,367,000	3,322,080	40,044,920	43,367,000	-	8%	Ongoing	N		Project delayed due to property approval.
Grandview Reservoir Unit No. 2	Surrey	26,000,000	-	26,000,000	26,000,000	-	0%	Not Started	Y		
Haney Main No. 4 (West Section)	Port Coquitlam	74,050,000	319,341	73,730,659	74,050,000	-	1%	Ongoing	Y		
Hellings Tank No. 2	Delta	29,411,000	4,865,401	24,545,599	29,411,000	-	17%	Ongoing	Y		
Jericho Reservoir No. 1	Langley Township	38,065,000	30,286,261	7,778,739	38,065,000	-	80%	Ongoing	Y	(c)	
Kennedy Newton Main	Surrey	164,300,000	24,436,687	139,863,313	127,900,000	36,400,000	15%	Ongoing	N	(b)	Route selection delays.
Newton Pump Station No. 2	Surrey	50,800,000	3,123,978	47,676,022	50,800,000	-	6%	Ongoing	N		Property acquisition delays.
Newton Reservoir Connection	Surrey	27,050,000	-	27,050,000	27,050,000	-	0%	Not Started	Y		
Port Mann Main No. 2 (South)	Surrey	44,800,000	28,921,457	15,878,543	36,800,000	8,000,000	95%	Ongoing	N	(h)	Alignment coordination delays with City of Surrey.
South Surrey Main No. 2	Surrey	145,700,000	86,012	145,613,988	145,700,000	-	1%	Ongoing	Y		
Whalley Kennedy Main No. 2	Surrey	96,000,000	-	96,000,000	96,000,000	-	0%	Not Started	Y		
Whalley Main	Surrey	33,300,000	15,322,236	17,977,764	31,800,000	1,500,000	60%	Ongoing	Y	(a)	
		4,426,643,000	158,153,803	4,268,489,197	4,380,743,000	45,900,000					
Infrastructure Maintenance Capital											
Annacis Main No. 2 - Queensborough Crossover Improvement	New Westminster	1,200,000	-	1,200,000	1,200,000	-	0%	Not Started	N	(f)	Likely not required. MOTI not planning on relocating Queensborough Main.
Annacis Main No. 3 BHP Potash Facility Pipe Protection	Surrey	600,000	-	600,000	600,000	-	0%	Ongoing	Y	(f)	
Annacis Main No. 3 Fraser Grain Terminal Pipe Relocation and Protection	Surrey	600,000	13,899	586,101	600,000	-	2%	Ongoing	Y		
Boundary Road Main No. 2 & No. 3 Decommissioning	Burnaby	1,500,000	23,808	1,476,192	1,500,000	-	2%	Ongoing	Y		
Burnaby Mountain Main No. 2	Burnaby	10,200,000	-	10,200,000	10,200,000	-	0%	Not Started	Y		
Burnaby Mountain Pump Station No. 2	Burnaby	23,000,000	242,082	22,757,918	23,000,000	-	1%	Ongoing	Y		
Capilano Main No. 4 Abandoning	Dist of North Van	700,000	559,530	140,470	700,000	-	80%	Ongoing	Y		
Capilano Main No. 5 (South Shaft to Lost Lagoon)	Vancouver	249,000,000	7,756,212	241,243,788	249,000,000	-	5%	Ongoing	N		Delayed due to project approval timelines.
Capilano Main No. 7 Line Valve & Swing Connection	Dist of North Van	2,100,000	318,964	1,781,036	2,100,000	-	15%	Ongoing	Y		
Capilano Main No. 7 MOTI Hwy 1 Main / Dollarton Interchange Pipe Protection	Dist of North Van	500,000	-	500,000	500,000	-	0%	Ongoing	Y	(f)	
Capilano Raw Water Pump Station Bypass PRV Upgrades	Dist of North Van	1,200,000	10,875	1,189,125	1,200,000	-	1%	Ongoing	Y		
Capilano Watershed Security Gatehouse	Dist of North Van	2,300,000	493,980	1,806,020	2,300,000	-	21%	Ongoing	Y		
Central Park Main No. 2 (10th Ave to Westburnco)	Burnaby	28,350,000	-	28,350,000	28,350,000	-	0%	Not Started	N		Delayed due to project scope review.
Central Park Main No. 2 (Patterson to 10th Ave)	Burnaby	84,400,000	8,790,255	75,609,745	84,400,000	-	10%	Ongoing	Y		
Central Park PS Seismic Upgrade	Burnaby	3,700,000	70,835	3,629,165	71,000	3,629,000	2%	Cancelled	Y	(d)	Project not required due to design revisions.
Central Park Reservoir Structural Improvements	Burnaby	1,900,000	-	1,900,000	1,900,000	-	0%	Not Started	Y		
Central Park WPS Starters Replacement	Burnaby	8,000,000	884,567	7,115,433	8,000,000	-	11%	Ongoing	Y		
CLD & SFD Fasteners Replacement & Coating Repairs	Dist of North Van	900,000	179,027	720,973	900,000	-	20%	Ongoing	Y		
Cleveland Dam - Lower Outlet HBV Rehabilitation	Dist of North Van	5,900,000	263,740	5,636,260	5,900,000	-	4%	Ongoing	Y		
Cleveland Dam - Spillway Concrete Repairs	Dist of North Van	5,500,000	3,341,503	2,158,497	4,100,000	1,400,000	100%	Completed	N	(a)(b)	Project delayed due to operational considerations.
Cleveland Dam Drumgate Seal Replacement	Dist of North Van	1,250,000	269,056	980,944	1,250,000	-	22%	Ongoing	Y		
Cleveland Dam Elevator Decommissioning and Ladder Replacement	Dist of North Van	500,000	260,497	239,503	260,000	240,000	100%	Completed	Y	(a)(b)	
Coquitlam Pipeline Road Remediation	Coquitlam	2,000,000	298,459	1,701,541	2,000,000	-	15%	Ongoing	Y	(g)	
CWTP Ozone Sidestream Pump VFD Replacement	Coquitlam	1,400,000	15,095	1,384,905	1,400,000	-	1%	Ongoing	Y		
CWTP pH, Alkalinity Upgrades	Coquitlam	1,700,000	1,139,254	560,746	1,700,000	-	67%	Ongoing	Y		
Douglas Road Main No. 2 - Kincaid Section	Burnaby	12,300,000	9,705,838	2,594,162	12,300,000	-	79%	Ongoing	N		Alignment changes.
Douglas Road Main No. 2 (Vancouver Heights Section)	Burnaby	28,486,000	17,640,630	10,845,370	21,486,000	7,000,000	62%	Ongoing	N	(b)	Procurement delays.
Douglas Road Main No. 2 Still Creek	Burnaby	63,100,000	4,006,935	59,093,065	63,100,000	-	6%	Ongoing	N		Alignment changes.
Douglas Road Main Protection	Burnaby	1,500,000	-	1,500,000	1,500,000	-	0%	Not Started	Y	(f)	

Metro Vancouver
Water Services Capital Expenditures Summary
As of August 31, 2020

Lifetime											
Project Name	Project Location	Total Project Budget	Total Expenditures to Date	Remaining Budget	Projected Expenditures	Projected Remaining Budget	Percent Complete	Status	Project on Schedule?	Note	Comments
E2 Shaft Phase 3	Dist of North Van	16,500,000	15,092,188	1,407,812	16,500,000	-	91%	Ongoing	Y		
First Narrows Tunnel Isolation Chamber Improvements	Dist of North Van	7,000,000	1,235,761	5,764,239	7,000,000	-	18%	Ongoing	Y		
Improvements to Capilano Mains No. 4 and 5	Dist of North Van	1,700,000	107,495	1,592,505	1,700,000	-	6%	Ongoing	Y		
Kersland Reservoir No. 1 Structural Improvements	Vancouver	5,750,000	303,463	5,446,537	5,750,000	-	6%	Ongoing	Y		
Little Mountain Reservoir Roof Upgrades	Vancouver	1,500,000	107,732	1,392,268	1,500,000	-	7%	Ongoing	Y		
Lulu Island - Delta Main - Scour Protection Phase 2	Richmond	3,550,000	-	3,550,000	3,550,000	-	0%	Not Started	N	(f)	
Lulu Island - Delta Main No. 2 (Marine Crossing)	Richmond	370,000,000	-	370,000,000	370,000,000	-	0%	Not Started	Y		
Maple Ridge Main West Lining Repairs	Maple Ridge	3,500,000	177,590	3,322,410	3,500,000	-	7%	Ongoing	N		Additional scope of work identified.
Newton Rechlorination Station No. 2	Surrey	5,000,000	-	5,000,000	5,000,000	-	0%	Not Started	N		Project delayed to coordinate with Newton Pump Station Project.
Port Mann Main No. 1 (Fraser River Crossing Removal)	Coq/Surrey	13,500,000	255,000	13,245,000	13,500,000	-	2%	Ongoing	Y		
Port Moody Main No. 1 Christmas Way Relocation	Coquitlam	2,350,000	-	2,350,000	2,350,000	-	0%	Not Started	Y	(f)	
Port Moody Main No. 3 Dewdney Trunk Rd Relocation	Coquitlam	2,700,000	4,685	2,695,315	2,700,000	-	1%	Ongoing	Y	(f)	Developer is in the process of confirming development permits with Coquitlam.
Port Moody Main No. 3 Scott Creek Section	Coquitlam	4,750,000	93,967	4,656,033	4,750,000	-	2%	Ongoing	Y		
Queensborough Main Royal Avenue Relocation	New Westminster	7,500,000	6,844	7,493,156	7,500,000	-	1%	Ongoing	Y		
Rechlorination Station SHS Storage Tank Replacement	Regional	1,200,000	28,459	1,171,541	1,200,000	-	2%	Ongoing	Y		
Rechlorination Station Upgrades	Regional	14,200,000	167,391	14,032,609	14,200,000	-	1%	Ongoing	Y		
Rehabilitation of AN2 on Queensborough Bridge	New West/Delta	2,500,000	-	2,500,000	2,500,000	-	0%	Ongoing	Y		
Relocation and Protection for MOTI Expansion Project Broadway	Vancouver	8,900,000	44,151	8,855,849	8,900,000	-	1%	Ongoing	Y		
Relocation and Protection for MOTI George Massey Crossing Replacement	Regional	2,450,000	-	2,450,000	2,450,000	-	0%	Not Started	N	(f)	
Relocation and Protection for Translink Expansion Project Surrey Langley SkyTrain	Regional	6,600,000	-	6,600,000	6,600,000	-	0%	Not Started	N	(f)	
Sasamat Reservoir Joint Upgrades	UEL	700,000	552,017	147,983	552,000	148,000	100%	Completed	Y	(a)	
SCFP Clearwell Membrane Replacement	Dist of North Van	17,400,000	-	17,400,000	17,400,000	-	0%	Not Started	N		
SCFP Concrete Coatings	Dist of North Van	6,500,000	2,068,704	4,431,296	3,400,000	3,100,000	75%	Ongoing	N	(h)	Delays due to operational requirements. Project scope changed.
SCFP Filter Underdrain Repairs	Dist of North Van	29,000,000	22,029,154	6,970,846	29,000,000	-	90%	Ongoing	Y		
SCFP OMC Building Expansion	Dist of North Van	2,450,000	5,514	2,444,486	2,450,000	-	1%	Ongoing	Y		
SCFP Polymer System Upgrade	Dist of North Van	2,950,000	227,000	2,723,000	2,950,000	-	8%	Ongoing	Y		
Second Narrows Crossing 1 & 2 (Burrard Inlet Crossing Removal)	Dist of North Van	21,500,000	-	21,500,000	21,500,000	-	0%	Not Started	Y		
South Delta Main No. 1 - Ferry Road Check Valve Replacement	Delta	600,000	9,169	590,831	600,000	-	2%	Ongoing	Y		
South Fraser Works Yard	Regional	32,000,000	-	32,000,000	32,000,000	-	0%	Not Started	Y		
South Surrey Main No. 1 Nickomekl Dam Relocation	Surrey	7,100,000	-	7,100,000	7,100,000	-	0%	Not Started	N	(f)	
Sunnyside Reservoir Unit 1 Upgrades	Surrey	8,050,000	5,788,319	2,261,681	8,050,000	-	72%	Ongoing	Y		
Tilbury Main North Fraser Way Valve Addition	Burnaby	3,100,000	255,899	2,844,101	3,100,000	-	8%	Ongoing	Y		
Westburnco Pump Station No. 2 VFD Replacements	New Westminster	2,550,000	72,743	2,477,257	2,550,000	-	3%	Ongoing	Y		
		1,158,836,000	104,918,284	1,053,917,716	1,143,319,000	15,517,000					
Infrastructure Resilience Capital											
Barnston/Maple Ridge Pump Station - Back-up Power	Pitt Meadows	9,000,000	162,083	8,837,917	9,000,000	-	2%	Ongoing	Y		
Burnaby Mountain Tank No. 2	Burnaby	21,650,000	45,415	21,604,585	21,650,000	-	1%	Ongoing	Y		
Burnaby Mountain Tank No. 3	Burnaby	21,400,000	-	21,400,000	21,400,000	-	0%	Not Started	Y		
Cambie Richmond Main No. 3 (Marine Crossing)	Richmond/Van	405,250,000	622,005	404,627,995	405,250,000	-	1%	Ongoing	Y		
Cape Horn Pump Station 2 - Back-Up Power	Coquitlam	8,000,000	61,057	7,938,943	8,000,000	-	1%	Ongoing	Y		
Capilano Mid-Lake Debris Boom	Dist of North Van	750,000	36,860	713,140	750,000	-	5%	Ongoing	Y		
Capilano Raw Water Pump Station - Back-up Power	Dist of North Van	33,000,000	5,404,133	27,595,867	33,000,000	-	16%	Ongoing	N		Site selection delays.
Capilano Reservoir Boat Wharf	Dist of North Van	850,000	69,235	780,765	850,000	-	8%	Ongoing	Y		
Clayton Langley Main No. 2	Surrey	36,400,000	-	36,400,000	16,900,000	19,500,000	0%	Not Started	Y	(h)	
Cleveland Dam Power Resiliency Improvements	Regional	1,700,000	5,017	1,694,983	1,700,000	-	1%	Ongoing	Y		
Coquitlam Intake Tower Seismic Upgrade	Coquitlam	25,500,000	848,797	24,651,203	25,500,000	-	3%	Ongoing	Y		
Critical Control Sites - Back-Up Power	Regional	1,800,000	-	1,800,000	1,800,000	-	0%	Not Started	Y		
CWTP Ozone Back-up Power	Coquitlam	7,450,000	-	7,450,000	7,450,000	-	0%	Not Started	Y		
Emergency Power Strategy for Regional Water Facilities	Regional	400,000	-	400,000	400,000	-	0%	Ongoing	N		Coordinating with Comprehensive Regional Water System Plan.
Grandview Pump Station Improvements	Surrey	2,600,000	87,476	2,512,524	2,600,000	-	3%	Ongoing	Y		
Mackay Creek Debris Flow Mitigation	Dist of North Van	9,700,000	8,975,946	724,054	9,700,000	-	91%	Ongoing	N		
Pebble Hill Pump Station Seismic Upgrade	Delta	1,650,000	-	1,650,000	1,650,000	-	0%	Not Started	N	(e)	Coordinating with City of Delta.
Pebble Hill Reservoir No. 3 Seismic Upgrade	Delta	8,900,000	303,092	8,596,908	8,900,000	-	3%	Ongoing	Y		
Pebble Hill Reservoir Seismic Upgrade	Delta	14,800,000	372,376	14,427,624	14,800,000	-	3%	Ongoing	N		Design delays due to geotechnical conditions.

Metro Vancouver
Water Services Capital Expenditures Summary
As of August 31, 2020

											Lifetime	
Project Name	Project Location	Total Project Budget	Total Expenditures to Date	Remaining Budget	Projected Expenditures	Projected Remaining Budget	Percent Complete	Status	Project on Schedule?	Note	Comments	
Reservoir Isolation Valve Automation	Regional	6,450,000	1,133,344	5,316,656	6,450,000	-	18%	Ongoing	N		Delayed due to scope refinement.	
SCFP UPS Reconfiguration	Dist of North Van	1,270,000	1,020,345	249,655	1,070,000	200,000	99%	Ongoing	Y	(a)		
Second Narrows Crossing (Tunnel)	Burnaby/DNV	468,550,000	161,965,439	306,584,561	468,550,000	-	35%	Ongoing	N		Permitting and property acquisition delays.	
Seymour Falls Boat Wharf	Dist of North Van	800,000	89,493	710,507	800,000	-	11%	Ongoing	Y			
Seymour Lake Debris Boom	Dist of North Van	800,000	287,175	512,825	800,000	-	36%	Ongoing	Y			
Seymour Main No. 2 Joint Improvements	Dist of North Van	3,252,000	488,220	2,763,780	3,252,000	-	57%	Ongoing	N		Work delayed until Fall 2021.	
Seymour Main No. 5 III (North)	Dist of North Van	236,900,000	3,699,949	233,200,051	236,900,000	-	2%	Ongoing	Y			
Seymour Reservoir Mid-Lake Debris Boom	Dist of North Van	2,300,000	136,074	2,163,926	2,300,000	-	8%	Ongoing	N		Project scope revised.	
Sunnyside Reservoir	Surrey	17,300,000	6,481,456	10,818,544	17,300,000	-	37%	Ongoing	Y			
System Seismic Upgrade	Regional	116,400,000	-	116,400,000	116,400,000	-	0%	Not Started	Y			
Vancouver Heights System Resiliency Improvements	Regional	1,500,000	-	1,500,000	1,500,000	-	0%	Not Started	Y			
Westburnco Pump Station - Back-up Power	New Westminster	27,000,000	686,573	26,313,427	27,000,000	-	3%	Ongoing	N		Design delay, scope modification.	
		1,493,322,000	192,981,560	1,300,340,440	1,473,622,000	19,700,000						
Infrastructure Upgrade Capital												
Burwell Alpine Reservoir Valve Improvements	Electoral Area A	650,000	504,990	145,010	650,000	-	78%	Ongoing	Y			
Cleveland Dam East Abutment Additional GV Series Pump Wells	Dist of North Van	750,000	621,851	128,149	750,000	-	83%	Ongoing	N		Coordinating with Regional Parks.	
CWTP Ozone Generation Upgrades for Units 2 & 3	Coquitlam	12,000,000	2,471,132	9,528,868	8,000,000	4,000,000	21%	Ongoing	N	(b)	Delay due to operational requirements.	
Lower Seymour Conservation Reserve Learning Lodge Replacement	Dist of North Van	5,000,000	620,168	4,379,832	5,000,000	-	12%	Ongoing	N		Delayed due to project scope review.	
Online Chlorine Monitoring Stations	Regional	3,600,000	-	3,600,000	3,600,000	-	0%	Not Started	Y			
Sapperton Main No. 1 New Line Valve and Chamber	New Westminster	3,800,000	825,087	2,974,913	3,800,000	-	22%	Ongoing	N		Tie-ins delayed to Fall 2021.	
SCFP Interior Lighting Efficiency Upgrade	Dist of North Van	500,000	142,785	357,215	500,000	-	29%	Ongoing	Y			
South Delta Main No. 1 - 28 Ave to 34B Ave	Delta	19,650,000	17,866,311	1,783,689	19,650,000	-	97%	Ongoing	N		Construction delays due to unforeseen environmental and geotechnical conditions.	
South Delta Mains - 28 Ave Crossover	Delta	10,500,000	8,456,273	2,043,727	10,500,000	-	81%	Ongoing	N		Utility conflicts and additional scope of work.	
Water Meter Upgrades	Regional	22,400,000	2,899,256	19,500,744	22,400,000	-	13%	Ongoing	N		Procurement delays.	
Water Optimization - Flow Meters (Non-billing) Phase 1	Regional	16,500,000	-	16,500,000	16,500,000	-	0%	Not Started	Y			
Water Optimization - Flow Meters (Non-billing) Phase 2	Regional	18,000,000	-	18,000,000	18,000,000	-	0%	Not Started	Y			
Water Optimization - Instrumentation	Regional	9,900,000	-	9,900,000	9,900,000	-	0%	Not Started	Y			
Water Optimization Automation & Instrumentation	Regional	9,540,000	6,141,102	3,398,898	9,540,000	-	64%	Ongoing	N		Procurement delays.	
		132,790,000	40,548,955	92,241,045	128,790,000	4,000,000						
Opportunity Capital												
Capilano Hydropower	Dist of North Van	99,250,000	218,368	99,031,632	99,250,000	-	1%	Ongoing	Y			
		99,250,000	218,368	99,031,632	99,250,000	-						
Grand Total Water Services												
		7,310,841,000	496,820,970	6,814,020,030	7,225,724,000	85,117,000						

Notes:

- (a) Contingency not required.
- (b) Construction costs lower than estimated.
- (c) City of Surrey share - 33.72%, Township of Langley share - 66.28%.
- (d) Project cancelled.
- (e) Cost sharing proposal with City of Delta
- (f) Project start is dependent on a 3rd party. External agency yet to begin work.
- (g) GVWD Cost Share City of Coquitlam, Fortis and BC Hydro
- (h) Extent of construction scope less than originally anticipated.

						Variance %	
Grand Total Ongoing	6,405,691,000	492,596,117	5,913,094,883	6,345,491,000	60,200,000	1%	Ongoing
Grand Total Completed	6,700,000	4,154,018	2,545,983	4,912,000	1,788,000	27%	Completed
Grand Total Not Started	894,750,000	-	894,750,000	875,250,000	19,500,000	2%	Not Started
Grand Total Cancelled	3,700,000	70,835	3,629,165	71,000	3,629,000	98%	Cancelled

Capital Project Status Information

August 31, 2020

GREATER VANCOUVER WATER DISTRICT (Water Services)

Major GVWD capital projects are generally proceeding on schedule and within budget. The following capital program items and exceptions are highlighted:

Infrastructure Growth Program

- **Annacis Main No. 5 (Marine Crossing)** – A 2.3 km long, 4.5 m diameter water supply tunnel is required under the Fraser River to meet growing water demand south of the Fraser and to provide increased system resiliency. Detailed design, which was awarded to Hatch Corporation, is now substantially complete. Property acquisition along the tunnel alignment continues, and construction management services have been awarded. The RFQ for construction was issued in late summer 2020, and the RFP for construction will be issued in late 2020.
- **Annacis Main No. 5 (South)** – This project comprises approximately 3.0 km of 1.8 m diameter steel pipe connecting the south shaft of the Annacis Water Supply Tunnel to the Kennedy Reservoir in the City of Surrey. Preliminary design has been completed and detailed design is in progress and expected to be complete in December 2020.
- **Cape Horn Pump Station No. 3** – Cape Horn Pump Station No. 3 with a back-up power system, will supplement the existing pump station to deliver Coquitlam source water to meet growing demand in the municipalities south of the Fraser River. Preliminary design of the new station started Q1 2020 and is expected to be complete Q2 2021.
- **Coquitlam Intake No. 2** – A new intake, tunnel and treatment plant are proposed at the Coquitlam Reservoir to increase the supply and transmission capacity from this source. The Draft Project Definition Report was received in December 2019. A Value Engineering workshop was held in May 2020 to review options to reduce risks, confirm costs and improve the schedule. A Final Project Definition Report, which will incorporate suitable options identified in the Value Engineering, will be completed in Q4 2020.
- **Coquitlam Main No. 4** – This 12 km long steel water main, consisting of the Central, South and Cape Horn Sections, will increase the transmission capacity from the Coquitlam Water Treatment Plant to the Cape Horn Pump Station and Reservoir in the City of Coquitlam. This project is required to address capacity constraints in the existing Coquitlam transmission system and also provide additional transmission capacity for the Coquitlam Intake No. 2. Detailed design of the Central and South Sections continues. A Request for Proposal for the 2.3 km tunnel portion of the South Section will be issued in Q3 2020. Construction of the Prebuild Section on Pipeline Road from Robson Street to Guildford Way is anticipated to commence in Q4 2021.
- **Fleetwood Reservoir** – Phase 1 of the Fleetwood Reservoir project includes a 13.6 ML reservoir, valve chamber, piping, access building and associated work located at Meagan Ann MacDougall Park in the City of Surrey. Detailed design is nearing completion, after the project was delayed due to property issues. The City of Surrey is finalizing the Property Lease Agreement and construction is expected to commence in Q1 2021.

- **Jericho Reservoir** – Phase 1 of the Jericho Reservoir project includes a 20.6 ML reservoir, chambers, piping and associated work located at 20400 73A Avenue in the Township of Langley. Construction commenced in December 2018 and is projected to be completed in December 2020. Tie-ins completion to be performed by MV construction group is scheduled for the first quarter of 2021. The contractor has indicated that they are experiencing delays due to Covid-19.
- **Kennedy Newton Main** – This project comprises approximately 9.0 km of 1.8 m diameter steel water main between the Kennedy Reservoir and the Newton Reservoir in the City of Surrey. The project is divided into 3 phases and construction of Phase 1, between 72nd Avenue and 84th Avenue, commenced in October 2019 and the construction contract for Phase 2, between 72nd Avenue and Newton reservoir has been awarded with construction expected to commence September 2020. Design of the remaining Phase 3, from 84th Avenue to Kennedy reservoir, is in progress and expected to be completed in December 2020.
- **Newton Pump Station No. 2** – This project, located at 6287 128th Street in the City of Surrey, comprises replacing the existing Newton Pump Station and includes full back-up power redundancy, connections to existing and future infrastructure, and installation of new outlets to the existing Newton Reservoir. The preliminary design phase was completed in December 2019 and detailed design is in progress with completion expected in December 2020.
- **Port Mann Main No. 2 (South)** – This 2.8 km long, 1.5 m diameter steel water main will twin the existing Port Mann Main No. 1 between the south shaft of the Port Mann Water Supply Tunnel and the Whalley Main in the City of Surrey. The project is required to meet growing water demand south of the Fraser River. The main installation construction contract was completed in July 2020 with final tie-ins and commissioning planned for spring 2021. A portion of main connecting to the Whalley Reservoir at the Hjorth Road Elementary School has been postponed until the required property rights can be finalized.
- **Whalley Main** – This 2.0 km long, 1.5 m diameter steel main will twin the existing Whalley Clayton Main between the Whalley Reservoir and the Whalley Kennedy Link Main in the City of Surrey. The main installation construction contract commenced in June 2019 and is 90% complete with completion anticipated by the end of 2020. Tie-ins and commissioning are planned for spring 2021.

Infrastructure Maintenance Program

- **Douglas Road Main No. 2 – Still Creek Section** - This project comprises approximately 2.5 km of 1.5 m diameter steel pipe with trenchless crossings of Highway 1, Still Creek and the BNSF rail line. The water main alignment has been finalized in consultation with the City of Burnaby. The detailed design phase is in progress and the required rights of ways are in the process of being secured. The Project is planned to be constructed in three phases, with the 560 m North Section commencing in fall 2020. Design of the remaining two phases is underway.
- **Douglas Road Main No. 2 – Vancouver Heights Section** - This project comprises approximately 2.0 km of 1.5 m diameter steel pipe connecting the Vancouver Heights Reservoir to the Douglas Road Main No. 2 at Beta Avenue and Albert Street in the City of Burnaby. The installation construction contract is expected to be complete in November 2020. The contractor has indicated that they are experiencing delays due to Covid-19. Final tie-ins and commissioning is planned for spring 2021.

- **Central Park Main No. 2 – Patterson to 10th Ave** - This project comprises approximately 7.0 km of 1.2 m diameter steel pipe connecting the Central Park Pump Station in Burnaby to the existing Central Park Main in New Westminster at 10th Avenue. The water main is planned to be constructed in three phases with the 500 m long Maywood Pre-build completed in summer 2020. Design of Phase 1 of the project has been completed and the installation contract for this phase has been awarded with construction expected to commence in September 2020. Design of Phase 2 is underway.
- **E2 Shaft Replacement** – The E2 Shaft, which has controlled ground water in the East Abutment of Cleveland Dam since the 1950's is nearing the end of its service life and needs to be replaced by a system of horizontal drains. A total of 6 horizontal drains have now been completed, and continue to be monitored. The project consultants are analyzing the information and will provide a recommendation on whether additional work is required.
- **Capilano Main No. 5 (Stanley Park Section)** – This 1.4 km long steel water main, in a tunnel, will **replace** the existing Capilano Main No. 4 through Stanley Park to meet growing water demand and provide increased system resiliency. Preliminary design has been completed. Detailed design has commenced and is anticipated to be complete in Q1 2021. The procurement phase for construction will commence in mid-2021, with construction anticipated to start in 2022.
- **SCFP Filter Underdrain Repair** – This project consists of a phased replacement of the existing underdrains in the 24 filters. New underdrains have been installed in all 24 filters and the filters returned to service. The project is scheduled for completion in October 2020.
- **Sunnyside Reservoir Unit No. 1 – Seismic Upgrade and Upgrades (Non-Seismic)** – The key components of the seismic upgrade work are external shear walls, replacement of existing roof slab and thickening of perimeter walls and footings. Other upgrades include drainage improvements, a new inlet pipe, underground valve chamber, access road and dechlorination system. Construction commenced early October 2019 with completion scheduled for December 2020.

Infrastructure Resilience Program

- **Clayton Reservoir** – This project comprises a new 22.5 ML reservoir located at 72nd Avenue and 190th Street in Surrey that increases storage capacity, meets current seismic standards and replaces the existing Clayton Tank. The new reservoir is now in service with all deficiencies corrected.

Mackay Creek Debris Flow Mitigation – Detailed design and construction engineering services for this project were awarded to BGC Engineering Inc. Detailed design was completed in early 2019. The construction contract was awarded to BEL Contracting. Construction commenced in spring 2019 and was completed in March 2020. Site replanting will be undertaken in the Fall.

- **Second Narrows Water Supply Tunnel** – This project comprises a 1.1 km long, 6.5 m diameter water supply tunnel under Burrard Inlet, between North Vancouver and Burnaby, to increase the reliability of supply in the event of a major seismic event and provide additional long term supply capacity. The contract for construction was awarded to the Traylor-Aecon General Partnership in October 2018. Mobilization and site preparation commenced in early 2019. Construction of the north shaft is complete and construction of the south shaft is progressing well. The Tunnel Boring Machine was setup at the bottom of the north shaft and excavation commenced in late summer.

- **Capilano Raw Water Pump Station – Back-up Power** – This project consists of installing diesel generators to provide 8 MW back-up power to the pump station. Shop drawing submittals for the pre-purchased electrical equipment are ongoing, with the equipment anticipated to arrive in 2021. Construction is anticipated to start in 2021 with overall project completion in 2022/3.
- **Coquitlam Intake Tower Seismic Upgrade** – The Coquitlam Intake Tower is located in the southeast corner of the Coquitlam Lake. Constructed in 1913, the tower provides the GVWD its primary intake of water from Coquitlam Lake. The Tower is a 27 m high and 5.5 m diameter unreinforced concrete structure, founded on bedrock. Detailed design of a seismic upgrade is 50% complete. Completion of detailed design is expected in early 2021. Due to coordination with BC Hydro work and water supply operations, construction will be completed in 2 stages (winter of 2023 and fall 2024/spring 2025).
- **Pebble Hill Reservoir No. 1, 2 and 3 Seismic Upgrade** – Pebble Hill Reservoir in south Delta is comprised of three units. Detailed design for the seismic upgrade is complete. Construction is scheduled to be completed in stages, taking only one unit out of service at any time. Construction of Units 1 and 2 will commence in 2021 and Unit 3 in 2023. All three units are expected to be completed by 2024.
- **Westburnco Pump Station – Back-up Power** – This project consists of installing diesel generators to provide 5 MW back-up power to the pump station. Preliminary design was completed in 2019 and detailed design continues in 2020.

Infrastructure Upgrade Program

- **South Delta Main No. 1 Replacement – 28th Avenue to 34B Avenue** – This project consists of replacement of the existing South Delta Main No. 1 on 53rd Street from 28th Avenue to 34B Avenue, and on 28th Avenue between 52nd Street and 53rd Street. Phase 3 consists of approximately 1.6 km of 900 mm diameter welded steel pipe and a crossing of the BC Rail tracks at Deltaport Way. Phase 3 construction is complete with the new main commissioned in early July 2020. The work was coordinated with the City of Delta’s storm drain installation project and upcoming road reconstruction.
- **Coquitlam Ozone Upgrade** – This project consists of upgrades to the ozone generators at the Coquitlam Water Treatment Plant. The generators for units 1 and 2 have been replaced. Units 1 and 2 are in service. Unit 3 will be upgraded in Q4 2020, considering operating requirements.

41234036