



INFORMATION ONLY COUNCIL REPORT
Engineering / Public Works
For the November 19, 2019 Council Meeting

DATE: October 28, 2019
TO: Paul Gipps, CAO
FROM: Mark Roberts, Flood Recovery Supervisor
RE: 2017 Flood Recovery Update

BACKGROUND:

The Central Okanagan received a large amount of snow in the late winter of 2016-2017. Normal snowmelt patterns were somewhat delayed due to a late, cold weather system. Heavy rains in March and April followed by an extreme storm cell system on May 4th and 5th caused ground saturation resulting in a change in surface flows and a deluge in local creek systems. A warming pattern that followed caused a rapid snowmelt that exceeded the ability to regulate lake levels, resulting in lakefront flooding.

As a result of this flooding, the City of West Kelowna identified 32 different recovery projects on Smith, McDougall and Powers Creeks, and other unnamed drainage ditches, and another 18 recovery projects on the shores of Okanagan Lake.

Disaster Financial Assistance Program

Applicable Disaster and Emergency costs are divided into two categories, Response and Recovery. Through the Emergency Operations Centre, Response costs are repaid at 100%.

Recovery costs, administered through the Disaster Financial Assistance (DFA) Program, with the physical recovery being completed and managed by local government, are repaid at 80%. The local government is responsible for the remaining 20%. In order for projects to be eligible for funding through this Recovery Program, City staff completed an extensive condition review of the creeks and lakefront that posed a threat to City infrastructure, and submitted a Recovery Plan to the Province for DFA consideration. This Recovery Plan was subsequently reviewed and approved in principle. The City then has to complete technical assessments and cost estimate for further approval. Once approved, recovery work is undertaken, and close out reports detailing the as constructed works are summarized. The City then prepares a recovery claim and submits to the Province for repayment.

Work Completed to Date

Project #	Project Name	Brief Description of Work	Public Infrastructure at Risk	Recovery Cost	EMBC Funding (up to 80%)	City Funding (20% minimum)	Non Eligible Funding (100% City Funding)	Status
01/15	Casa Loma Boat Launch	Clean out storm outfall, remove sediment from boat launch, rebuild groin	Dupuis Boat Launch & storm outfall	\$ 16,140	\$ 12,912	\$ 3,228	\$ -	Complete
02	Casa Loma Beach Park (Waterfront)	Remove debris, clean out storm outfall and street sweeping	Casa Loma Beach, Storm outfall	\$ 1,830	\$ 1,464	\$ 366	\$ -	Complete
03	Green Bay Rd	4 Catch Basins requiring cleaning	Green Bay Road	\$ -	\$ -	\$ -	\$ -	Complete
04	Pritchard Drive	6 Catch Basins + 3 Drywells requiring cleaning	Pritchard Drive	\$ -	\$ -	\$ -	\$ -	Complete
05	Glenrosa Rd: Turnbull to Country Pines	Rebuild ditching & culvert cleaning	Sewer, water and storm infrastructure, communications and gas infrastructure	\$ 23,789	\$ 18,747	\$ 4,687	\$ 356	Complete
06	McRobie Rd (Powers Basin)	Rebuild ditching & culvert cleaning	Sewer, water and storm infrastructure, communications and gas infrastructure	\$ -	\$ -	\$ -	\$ -	Complete
07	Inverness Rd @ Community Center (Powers Basin)	Dewatering of sediment catchment, diversion of water, excavate 468m3 of material, rebuild catchment and ditch, revegetation	Webber Road Community Centre, Inverness Road, Webber Road Community Park	\$ 77,230	\$ 61,784	\$ 15,446	\$ -	Complete

08	Gellatly Rd @ Yacht Club (Powers Basin)	Ditch rebuild, culvert installation and sediment removal.	Gellatly Road, sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ 315	\$ 252	\$ 63	\$ -	Complete
09	Glenrosa Rd	14 Catch Basins requiring cleaning	Glenrosa Road	\$ -	\$ -	\$ -	\$ -	Complete
10	Westlake Rd @ Rosewood Dr	Cleanout of 450mm culvert inlet	Sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ 1,200	\$ 960	\$ 240	\$ -	Complete
11	Horizon Dr Pump house access lane	Import fill material for access road	Horizon Drive Pump House	\$ -	\$ -	\$ -	\$ -	Complete
12	Westlake Rd to Griffith	Ditch rebuild and catch basin cleaning w/ vac truck	Sewer, water and storm infrastructure, communications and gas infrastructure	\$ 1,484	\$ 1,187	\$ 297	\$ -	Complete
14	Rose Valley Reservoir Head gate	Dewatering & diversion of creek, fish salvage, removal of log jam, remove approx. 135m3 gravel, rebuilding of revegetation, fencing repair	Intake for Rose Valley Reservoir and weir	\$ 225,011	\$ 180,009	\$ 45,002	\$ -	Complete
16	Rotary Trails	Ditch rebuild, culvert installation and sediment removal. Traffic Control	Gellatly Road, sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ -	\$ -	\$ -	\$ -	Complete

17	Gellatly South Rd to Powers Creek Bridge (Powers Basin)	Cleaning 11 catch basins	Sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ -	\$ -	\$ -	\$ -	Complete
18	Lower McDougall Creek (Hitchner Rd)	Dewatering & diversion of creek, fish salvage, 260m3 aggraded gravel removed, rebuilding of channel and fish habitat, revegetation	Sewer lift station and associated infrastructure and pipes, communications, hydro and gas infrastructure	\$ 257,570	\$ 206,056	\$ 51,514	\$ -	Complete
19	Powers Creek @ Water Treatment Plant	Dewatering of intake reservoir, diversion of creek, fish salvage, excavation of 10,000m3 of material, trucking off site, rebuilding of intake reservoir, revegetation	Powers Creek Water Treatment Plant	\$ 934,899	\$ 747,919	\$ 186,980	\$ -	Complete
20	Lower Powers Creek near Gellatly Road Bridge & Rotary Trails Park	Dewatering & diversion of creek, fish salvage, 620m3 aggraded gravels removed, rebuilding channel and fish habitat, transport of material offsite, revegetation	Gellatly Rd, Gellatly Rd Bridge, pedestrian bridge, sewer & water infrastructure, communications, hydro and gas infrastructure	\$ 977,483	\$ 781,986	\$ 195,497	\$ -	Complete
21	Majoros Park	Dewatering of upper pond, building access road, diversion of creek, fish salvage, sediment removal of approx. 325m3 of material, transport offsite	Majoros Park	\$ 155,214	\$ 124,172	\$ 31,043	\$ -	Complete

22	Upper McDougall Creek - north and south of Shannon Lake Road Bridge	Dewatering of creek, diversion of creek, fish salvage, 2,180m3 aggraded gravels, rebuilding of creek channel and fish habitat structures, transport of material offsite, revegetation	Sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ 646,505	\$ 517,204	\$ 129,257	\$ 44	Complete
23	Byland Rd Bridge @ McDougall Creek	MoTI Right of Way	MoTI Right of Way	\$ -	\$ -	\$ -	\$ -	Cancelled
24	Ross Rd Bridge @ McDougall Creek	MoTI Right of Way	MoTI Right of Way	\$ -	\$ -	\$ -	\$ -	Cancelled
25	Middle McDougall Creek (Capri Rd)	Dewatering of creek, diversion of creek, fish salvage, 300m3 aggraded gravels, rebuilding of creek channel and fish habitat structures, transport of material offsite, revegetation	Sewer line infrastructure	\$ 211,639	\$ 169,298	\$ 42,328	\$ 12	Complete
13/26	Rock Ridge Park	Dewatering of sediment catchments, diversion of water, excavation of approx. 30m3 of material, rebuild two sediment catchments, clean & reinstate block culvert	Sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ 90,045	\$ 72,036	\$ 18,009	\$ -	Complete

28-33, 35	Repaving section of Green Bay, Glenrosa and Shannon Lake Roads	Re-pave road, and re-crush and gravel shoulder where necessary	City Roads	\$ 117,834	\$ 94,267	\$ 23,567	\$ -	Complete
34	Gellatly Rd Slope Failure	Dewatering & diversion of creek, fish salvage, sediment removal & rebuilding of channel, rebuilding of road structure and supporting shoulders, revegetation	Gellatly Road, sewer, water and storm infrastructure, communications and gas infrastructure	\$ 498,719	\$ 336,975	\$ 99,744	\$ 62,000	Complete
36	Smith Creek Culverts	Work was completed when creek was dry. Removed aggraded gravels, rebuilt creek channel, transported material offsite, revegetation in 5 different locations	Sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ 85,621	\$ 67,897	\$ 17,124	\$ 600	Complete
41	Pritchard Park	trucking topsoil & fill material, levelling, and re-sodding	Pritchard Park	\$ 1,536	\$ 1,229	\$ 307	\$ -	Complete
42	Rotary Beach	Isolation of Okanagan Lake, repair and replace riprap retaining wall, and repair and replace concrete retaining wall.	Rotary Beach	\$ 381,443	\$ 305,154	\$ 76,289	\$ -	Complete
44	Powers Point Park	High water and wave action eroded soil behind concrete barriers	Gellatly Boat Launch	\$ -	\$ -	\$ -	\$ -	Complete

45	Gellatly Walkway	Rebuilding approx. 800 meters walkway with rip rap and angular fill material	Gellatly Road, sewer, water and storm infrastructure, communications, hydro and gas infrastructure	\$ 248,616	\$ 198,893	\$ 49,723	\$ -	Complete
46	Gellatly Boat Launch	Isolation and dewatering of Okanagan Lake, remove aggraded gravels, remove and replace lock block retaining wall with sheet piles, transport of material offsite, rebuild boardwalk and docks	Gellatly Boat Launch	\$ 314,190	\$ 251,352	\$ 62,838	\$ -	Complete
47	Heart Nut Park	Isolation of Lake, repair and replace rip rap material	Heartnut Park	\$ 9,768	\$ 7,814	\$ 1,954	\$ -	Complete
48-50	Administrative Costs							
51	CNR Wharf	Excavate ramp, install geotextile barrier, replace rip rap and angular material below floating headwall and around peninsula	CNR Wharf Park	\$ 31,870	\$ 25,496	\$ 6,374	\$ -	Complete
			SUB-TOTAL	\$ 5,309,949	\$ 4,185,063	\$ 1,061,874	\$ 63,013	
			TOTAL	\$ 5,309,949	\$ 4,185,063	\$	1,124,887	

Outstanding Projects

Project #	Project Name	Brief Description of Work	Public Infrastructure at Risk	Recovery Cost	Status
43	Willow Beach	Isolation of Okanagan Lake, fish salvage, repair and replace gabion baskets and concrete retaining wall with rip rap retaining similar to rest of shoreline, revegetation	Willow Beach	\$ 385,000	Scheduled for winter 2019/2020
26.1	Rock Ridge Park - Phase 2	Rebuild the degraded channel by regrading the vertical side walls and stabilizing the channel bed	Scott Crescent, water, storm and sewer infrastructure	\$ 528,900	Scheduled for spring/summer 2020
			Total	\$ 914,200	

FINANCIAL IMPLICATIONS:

The total approved cost for the 2017 flood recovery is **\$6,940,539**. Based on current projections, project estimates are trending below the estimated budget.

2017 Freshet Flood	Estimate of total Recovery Costs
Total Flood Recovery Budget	\$ 6,940,539
Total Eligible DFA Recovery Up to 80%	\$ 5,552,431
West Kelowna Non-Recoverable 20% minimum	\$ 1,388,108

Cost Summary to Date

2017 Freshet Flood Total Expenses Spent to Date	\$ 5,309,949
2017 Remaining Flood Recovery Budget	\$ 1,490,590
2017 Remaining Administrative Costs	\$ 140,000
DFA Recovery Claim Submission Total*	\$ 2,875,158
DFA Recovery Payment to Date	\$ 2,742,180
Non-Eligible Recoverable items to Date	\$ 63,013

* Note that Recovery Claims for the outstanding difference between what has been spent to date and submitted are being prepared and will be submitted to DFA for approval in short order.

REVIEWED AND APPROVED BY:

Allen Fillion
Warren Everton
Paul Gipps, CAO

PowerPoint: Yes No

Attachments:
Attachment 1: Select Project Photo Log

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Photo 1: Project 1 – Dupuis Boat Launch

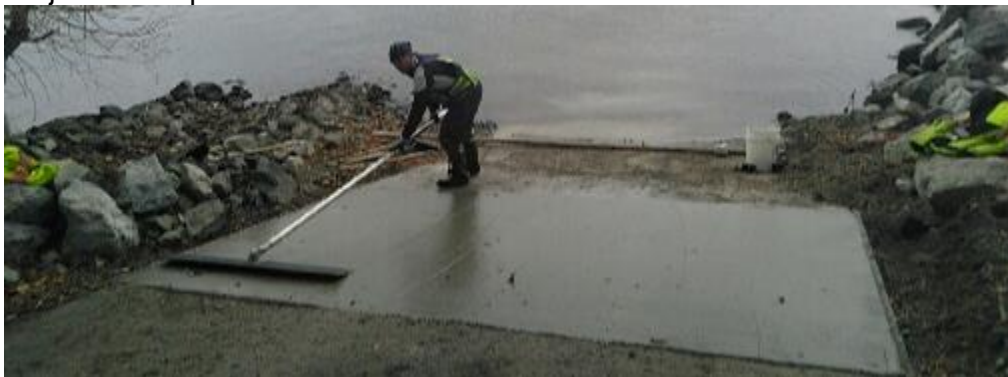


Photo 2: Project 1 – Dupuis Boat Launch



Photo 3: Project 14 - Rose Valley Headgate Pre-Recovery – north side of creek



Photo 4: Project 14 - Rose Valley Headgate Post Recovery – south side of creek



Photo 5: Project 18 - Lower McDougall Creek



Photo 6: Project 18 - Lower McDougall Creek



Photo 7: Project 19 - PCWTP - Pre-Recovery



Photo 8: Project 19 - PCWTP - During Recovery



Photo 9: Project 20 – Lower Powers Creek – Rotary Trails Bridge pre-recovery



Photo 10: Project 19 – Lower Powers Creek – Rotary Bridge Post Recovery



Photo 11: Project 19 – Lower Powers Creek – Gellatly Bridge w/ ~1m additional clearance under decking



Photo 12 – Project 19 – Lower Powers Creek – creek channel re-established w/ fish habitat structures



Photo 13: Project 13/26 – Rock Ridge Park – cleaned out culvert at Scott Crescent



Photo 14: Project 13/26 – Rock Ridge Park – Culvert clean under sewer line and access road



Photo 15: Project 34 – Smith Creek at Gellatly Road – bank stabilization



Photo 16: - Project 34 – Creek recovery



Photo 17: Project 46 – Gellatly Boat Launch - displaced lock block



Photo 18: Project 46 – Gellatly Boat Launch – most cost effective repair was to retain lock block wall with sheet piles.