
REPORT

3073/20

TO:	Board of Directors Mississippi Valley Conservation Authority
FROM:	Sally McIntyre, General Manager and Angela Millar, Treasurer
RE:	10-year Capital Needs Assessment
DATE:	August 31, 2020

Recommendation:

That the the Board of Directors direct staff to:

- a) apply criteria to support priority setting within and amongst the asset categories;
- b) recommend updates to the *10-year Capital Plan* for tabling with the 2021 Budget; and
- c) integrate capital plan recommendations into the Draft 2021-2023 Interim Financial Plan.

1.0 BACKGROUND

The Board approved MVCA's first *10-year Capital Plan* in 2018 as well as a policy of stable annualized funding to enable fulfillment of the capital program. This was a significant achievement of the organization.

In 2018, staff recognized that the *10-year Capital Plan* did not address all capital assets, that underlying assumptions would need to be revisited and updated over time, and that affordability was a major barrier to implementation. This Needs Assessment builds on the 2018 plan by considering a broader set of assets, industry practices regarding risk mitigation, the impacts of climate change on the watershed, and regulatory, technological and public demands on the organization.

The purpose of the Needs Assessment is to set out the full range of capital pressures facing MVCA to allow for priority setting, updating of the *10-year Capital Plan*, and to inform development of the 2021-2023 Interim Financial Plan.

Most cost estimates in the Needs Assessment are considered Class D¹, meaning actual costs could be higher or lower by as much as ±50%. Projects to occur between 2021-2023 are generally Class C estimates, meaning actual costs could vary by up to ±25-40%. In both cases, they provide order of magnitude estimates for the purpose of financial planning. All costs are stated in 2020 Canadian dollars and will be subject to inflation over time.

2.0 SUMMARY OF NEEDS

The Needs Assessment divides capital assets into the following categories:

- A. Water and Erosion Control System** – this includes dams, weirs and related appurtenances, as well as the gauges and communication systems that allow for remote data collection of water levels and flows across the watershed.
- B. Buildings and Conservation Areas** – this includes continued payment of the mortgage on the Administrative Building, connection to the central water and sewer when they become available, as well as lifecycle replacement of key assets and planned improvements at the Mill of Kintail, Morris Island, and Purdon conservation areas.
- C. Information and Communication Systems** – this includes lifecycle replacement of major hardware, major software upgrades, major data acquisition, and modernization of data management, communication, and security systems.
- D. Vehicles and Equipment** – this includes all equipment used across the organization for field operations and laboratory equipment.

Table 1 provides a summary of capital pressures facing MVCA over the next 10-years. Its purpose is to inform and support priority setting and financial planning. Sections 3 through 6 provide background information regarding these pressures. Refer to the appendices for more details.

¹ Budget Guidelines for Consulting Engineering Services. CEBC, 2009

Table 1: DRAFT NEEDS ASSESSMENT 2021-2031

Appendix A - Draft Needs Assessment 2021 - 2030											
Water and Erosion Control Structures and Network											
Water Control Structures	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Shabomeka Lake Dam	1,300,000	65,000	-	-	-	-	-	-	-	-	1,365,000
Mazinaw Lake Dam	-	-	-	-	-	-	-	-	50,000	50,000	100,000
Kashwakamak Lake Dam	50,000	75,000	20,000	75,000	1,500,000	-	-	-	-	-	1,720,000
Big Gull Lake Dam	-	-	-	-	50,000	50,000	-	-	-	-	100,000
Mississagagon Lake Dam	-	-	-	-	-	-	-	75,000	50,000	250,000	375,000
Farm Lake Dam	-	-	-	75,000	-	50,000	350,000	-	-	-	475,000
Pine Lake Dam	-	-	-	-	-	75,000	25,000	50,000	-	-	150,000
Carleton Place Dam	-	-	150,000	75,000	-	-	-	-	-	-	225,000
Lanark Dam	-	-	75,000	50,000	-	-	-	-	-	-	125,000
Widow Lake Dam	-	175,000	-	-	-	-	-	-	-	75,000	250,000
Bennett Lake Dam	-	-	-	-	-	-	-	75,000	75,000	-	150,000
Glen cairn Detention Basin	-	-	-	-	-	-	-	-	-	-	-
MacLarens Landing	-	-	-	-	-	-	-	-	-	-	-
Project Management	-	-	-	-	-	-	-	-	-	-	-
Preventative Maintenance	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000
Subtotal	1,365,000	330,000	260,000	290,000	1,565,000	190,000	390,000	215,000	190,000	390,000	5,185,000
Watershed Monitoring	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Gauge Network	22,500	22,500	22,500	16,500	22,500	22,500	21,000	22,500	22,500	31,500	226,500
Survey & Flow Equipment	-	-	30,000	-	-	30,000	-	-	-	-	60,000
Subtotal	22,500	22,500	52,500	16,500	22,500	52,500	21,000	22,500	22,500	31,500	286,500
Total Water and Erosion Control Structures and Monitoring	1,387,500	352,500	312,500	306,500	1,587,500	242,500	411,000	237,500	212,500	421,500	5,471,500
Buildings and Conservation Areas											
Conservation Areas	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Mill of Kintail	26,000	41,000	50,000	60,000	85,000	75,000	50,000	50,000	9,000	60,000	506,000
Purdon	17,500	12,500	12,500	12,500	5,000	-	7,000	-	-	-	67,000
K&P Trail	7,000	32,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	55,000
Morris Island	6,000	5,000	5,000	10,000	5,000	-	-	-	-	-	31,000
Office Trail	5,000	-	-	-	-	-	-	-	-	-	5,000
Subtotal	61,500	90,500	69,500	84,500	97,000	77,000	59,000	52,000	11,000	62,000	664,000
New Administration Office	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Debenture payment	277,005	277,005	277,005	277,005	277,005	277,005	277,005	277,005	277,005	277,005	2,770,050
Sewer and water connection	-	-	348,000	-	-	-	-	-	-	-	348,000
Other	-	-	-	15,000	-	60,000	10,000	10,000	10,000	-	105,000
Subtotal	277,005	277,005	625,005	292,005	277,005	337,005	287,005	287,005	287,005	277,005	3,223,050
Total Buildings and Conservation Areas	338,505	367,505	694,505	376,505	374,005	414,005	346,005	339,005	298,005	339,005	3,887,050
Information and Communications Systems	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Hardware	11,100	14,400	41,600	8,500	17,500	11,500	9,500	8,500	9,500	8,500	140,600
Data Acquisition	2,000	2,000	2,000	19,500	2,000	2,000	2,000	2,000	19,500	2,000	55,000
Total Information and Communications Systems	13,100	16,400	43,600	28,000	19,500	13,500	11,500	10,500	29,000	10,500	195,600
Vehicles and Equipment	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Vehicles	53,000	60,000	60,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	621,000
Equipment	-	-	12,000	8,000	10,000	25,000	-	-	21,000	20,000	96,000
Total Vehicles and Equipment	53,000	60,000	72,000	72,000	74,000	89,000	64,000	64,000	85,000	84,000	717,000
Total	1,792,105	796,405	1,122,605	783,005	2,055,005	759,005	832,505	651,005	624,505	855,005	10,271,150

WATER AND EROSION CONTROL STRUCTURES AND MONITORING

The current needs assessment identifies approximately \$5.4 million dollars in capital improvements over the period 2021-2030. This is a 51% increase over what was identified in 2018, with major additions comprised of the following:

- Shabomeka Lake Dam – increased construction costs identified
- Kashwakamak Lake Dam – increased construction costs identified
- Farm Lake Dam – construction identified
- 2018 Capital Expenditure Summary did not include Watershed Monitoring Equipment costs

Refer to Appendix B for details.

3.0 BUILDINGS AND CONSERVATION AREAS

The current needs assessment identifies approximately \$3.9 million dollars in capital improvements over the period 2021-2030. This is a 11% increase over what was identified in 2018, with major additions comprised of the following:

- Mill of Kintail – septic system replacements, construct flushable washrooms, roof shingles on museum, centralized parking area
- K&P Trail – bridge deck and handrails
- Administration Office – HVAC system replacements identified

Refer to Appendix C for details.

4.0 INFORMATION AND COMMUNICATION SYSTEMS

The current needs assessment identifies approximately \$196,000 in capital improvements over the period 2021-2030. The computer hardware and data acquisitions were previously budgeted within the annual operating budget for Information Management and had not been included in the 2018 Capital Expenditure Summary. Annually, \$15,000 had been allocated for computer hardware and \$8,000 per year for data acquisitions through the annual operating budget. The current needs assessment identifies a 15% decrease over what had been identified in previous annual budgets.

Refer to Appendix D for details.

5.0 VEHICLES AND EQUIPMENT

The current needs assessment identifies approximately \$717,000 in capital improvements over the period 2021-2030. This is a 27% increase over what was identified in 2018, with major additions comprised of the following:

- Vehicle replacements had been postponed for 2019 and reallocated to the current needs assessment
- Additional Equipment needs identified – tracks for ATV, riding mower

Refer to Appendix E for details.

6.0 NEXT STEPS

This Needs Assessment does not consider affordability or corporate and community priorities. Therefore, the next step in this process is to develop and apply criteria to each asset category to support priority setting and update of the 10-year Capital Plan. It is recommended that this occur over the fall concurrent to development of the 2021 Budget and the 2021-2023 Interim Financial Plan.

Appendix B - Water and Erosion Control Structures and Monitoring

Water and Erosion Control Structures											
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Shabomeka Lake Dam	1,300,000	65,000	-	-	-	-	-	-	-	-	1,365,000
Mazinaw Lake Dam	-	-	-	-	-	-	-	-	50,000	50,000	100,000
Kashwakamak Lake Dam	50,000	75,000	20,000	75,000	1,500,000	-	-	-	-	-	1,720,000
Big Gull Lake Dam	-	-	-	-	50,000	50,000	-	-	-	-	100,000
Mississagagon Lake Dam	-	-	-	-	-	-	-	75,000	50,000	250,000	375,000
Farm Lake Dam*	-	-	-	75,000	-	50,000	350,000	-	-	-	475,000
Pine Lake Dam*	-	-	-	-	-	75,000	25,000	50,000	-	-	150,000
Carleton Place Dam	-	-	150,000	75,000	-	-	-	-	-	-	225,000
Lanark Dam	-	-	75,000	50,000	-	-	-	-	-	-	125,000
Widow Lake Dam	-	175,000	-	-	-	-	-	-	-	75,000	250,000
Bennett Lake Dam	-	-	-	-	-	-	-	75,000	75,000	-	150,000
Glen Cairn Detention Basin	-	-	-	-	-	-	-	-	-	-	-
MacLarens Landing	-	-	-	-	-	-	-	-	-	-	-
Preventative Maintenance	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000
Total	1,365,000	330,000	260,000	290,000	1,565,000	190,000	390,000	215,000	190,000	390,000	5,185,000

Watershed Monitoring											
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
Gauge Network											
WSC Gauges	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	15,000	82,500
MVCA Gauges	15,000	15,000	15,000	9,000	15,000	15,000	13,500	15,000	15,000	16,500	144,000
Survey & Flow Equipment			30,000			30,000					60,000
Total	22,500	22,500	52,500	16,500	22,500	52,500	21,000	22,500	22,500	31,500	286,500

Total WCS and Monitoring	1,387,500	352,500	312,500	306,500	1,587,500	242,500	411,000	237,500	212,500	421,500	5,471,500
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Appendix C - Buildings and Conservation Areas

Mill of Kintail Conservation Area	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr. Total
Museum											
Balcony repairs			25,000								25,000
Replace wooden shingle roof								50,000			50,000
Re paint all exterior window and door trim				20,000							20,000
Replace riverside look out	9,000										9,000
Replace play structure wood chips					5,000						5,000
Replace septic system							50,000				50,000
Museum roadway retaining wall						15,000					15,000
Building Condition Assessment		20,000									20,000
Gatehouse											
- Repoint stone work	5,000	5,000	5,000	5,000							20,000
- Replace veranda joists and flooring		8,000									8,000
Security and accessibility upgrades				10,000							10,000
- Replace windows			5,000	5,000							10,000
Septic replacement										60,000	60,000
Ed Center											
Accessibility doors and ramps		8,000									8,000
Replace siding			10,000								10,000
Site General											
Construct dog park			5,000								5,000
Centralized parking						50,000					50,000
Pedestrian bridge deck replacement									9,000		9,000
Resurface roadway and parking lot	10,000					10,000					20,000
Signage	2,000										2,000
Construct flush washrooms				20,000	80,000						100,000
Develop site work shop	5,000	5,000	5,000								15,000
Subtotal	26,000	41,000	50,000	60,000	85,000	75,000	50,000	50,000	9,000	60,000	506,000
Purdon Conservation Area											
Replace sections on Boardwalk	12,500	12,500	12,500	12,500							50,000
Replace stairs											-
Replace site signage	5,000										5,000
Replace main look-out					5,000						5,000
Replace finger look-out							7,000				7,000
Subtotal	17,500	12,500	12,500	12,500	5,000	-	7,000	-	-	-	67,000
K&P Trail Conservation Area											
Trail improvements											-
Condition Assessment	5,000										5,000
Bridge deck & handrail upgrades		30,000									30,000
Beaver management	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000
Subtotal	7,000	32,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	55,000
Morris Island Conservation Area											
Trail brushing/improvements	5,000		5,000	5,000	5,000						20,000
Parking meter											-
Signage	1,000										1,000
Trail Bridge repairs		5,000									5,000
Road maintenance				5,000							5,000
Subtotal	6,000	5,000	5,000	10,000	5,000	-	-	-	-	-	31,000
Office Trail											
Trail construction	-	-	-	-	-	-	-	-	-	-	-
Signage	-	-	-	-	-	-	-	-	-	-	-
Construct lookout	5,000	-	-	-	-	-	-	-	-	-	5,000
Subtotal	5,000	-	-	-	-	-	-	-	-	-	5,000
Total Conservation Areas	61,500	90,500	69,500	84,500	97,000	77,000	59,000	52,000	11,000	62,000	664,000
Administration Office											
Administration Office	277,005	277,005	277,005	277,005	277,005	277,005	277,005	277,005	277,005	277,005	2,770,050
Debtenture payment											
Sewer and water connection			348,000								348,000
OTHER CAPITAL											-
Condition Assessment				15,000							15,000
Painting and Restoration						60,000					60,000
HVAC replacements							10,000	10,000	10,000		30,000
SUB-TOTAL OTHER CAPITAL	-	-	-	15,000	-	60,000	10,000	10,000	10,000	-	105,000
Total Administration Office	277,005	277,005	625,005	292,005	277,005	337,005	287,005	287,005	287,005	277,005	3,223,050
Total Buildings and Conservation Areas	338,505	367,505	694,505	376,505	374,005	414,005	346,005	339,005	298,005	339,005	3,887,050

Appendix D - Information and Communications Systems

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr Total
HARDWARE											
computers	7,100	5,400	5,600	8,500	8,500	8,500	8,500	8,500	8,500	8,500	77,600
Servers			10,000		8,000						18,000
Printers		9,000									9,000
Monitors	1,000		1,000		1,000		1,000		1,000		5,000
Storage						3,000					3,000
Audio Visual	3,000		25,000								28,000
SUB-TOTAL	11,100	14,400	41,600	8,500	17,500	11,500	9,500	8,500	9,500	8,500	140,600
DATA ACQUISITION											
OtherData aquisition	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000
DRAPE				17,500					17,500		35,000
SUB-TOTAL	2,000	2,000	2,000	19,500	2,000	2,000	2,000	2,000	19,500	2,000	55,000
Total	13,100	16,400	43,600	28,000	19,500	13,500	11,500	10,500	29,000	10,500	195,600

Appendix E - Vehicles & Equipment

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 Yr. Total
Vehicles											
Vehicle purchase	53,000	60,000	60,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	621,000
Equipment Purchase											-
- ATV						25,000					
Tracks for ATV				8,000							
- Tractor										20,000	
- Boat & Motor									21,000		
- Tandem utility trailer					10,000						
Riding Lawn mower			12,000								
Sub-Total Equipment	-	-	12,000	8,000	10,000	25,000	-	-	21,000	20,000	96,000
Total	53,000	60,000	72,000	72,000	74,000	89,000	64,000	64,000	85,000	84,000	717,000