



**Grand River Conservation Authority
Agenda - General Meeting**

Friday, May 28, 2021

9:30 a.m.

GRCA Zoom Virtual Meeting

Link to be distributed via email prior to meeting

Pages

1. **Call to Order**
2. **Certification of Quorum**
3. **Chair's Remarks**
4. **Review of Agenda**

THAT the agenda for the General Membership Meeting be approved as circulated.
5. **Declarations of Pecuniary Interest**
6. **Minutes of the Previous Meetings** 1

THAT the minutes of the General Membership Meeting of April 23, 2021 be approved as circulated.
7. **Business Arising from Previous Minutes**
8. **Hearing of Delegations**
9. **Presentations**
 - a. Ministry of Environment, Conservation and Parks ERO Posting - Phase 1 Regulatory Proposals
10. **Correspondence**

THAT Correspondence from Kerry Game regarding a request for a permit fee refund be received as information.

 - a. Kerry Game - Permit fee refund request 7

- 11. 1st and 2nd Reading of By-Laws**
- 12. Reports:**
- a. GM-05-21-36 - Cash and Investment Status 8
 THAT Report Number GM-05-21-36 Cash and Investment Status – April 2021 be received as information.
 - b. GM-05-21-39 - Financial Summary 10
 THAT the Financial Summary for the period ending April 30, 2021 be approved.
 - c. GM-05-21-38 - Provincial Offences Act Officer Appointments 15
 THAT the Grand River Conservation Authority appoints Spencer Roberts, Matt Beauvais, and Jacob Benham as Provincial Offences Act Officers to enforce section 29 of the Conservation Authorities Act.
 - d. GM-05-21-37 - Groundwater Monitoring in the Grand River Watershed 17
 THAT Report Number GM-05-21-37 – Groundwater Monitoring in the Grand River Watershed be received as information.
 - e. GM-05-21-40 - Current Watershed Conditions 27
 THAT Report Number GM-05-21-40 – Current Watershed Conditions as of May 19, 2021 be received as information.
- 13. Committee of the Whole**
- 14. General Business**
- 15. 3rd Reading of By-Laws**
- 16. Other Business**
- 17. Closed Meeting**
- THAT the General Membership enter a closed meeting to discuss a confidential matter.
- a. Minutes of the Previous Closed Session
 - b. GM-05-21-C04 - Easement - Region of Waterloo
 - c. GM-05-21-C05 - Easement - City of Cambridge
 - d. Advice that is subject to solicitor-client privilege

- e. Litigation or Potential Litigation
- f. Security of Property - Verbal Report

18. Next Meetings

- Ad-Hoc Committee - CA Act Regulations - June 17, 2021 at 3:00 p.m.
- GRCA General Membership - June 25, 2021 at 9:30 a.m.

19. Adjourn

Regrets only to:

Office of the Chief Administrative Officer, Phone: 519-621-2763 ext. 2200



Grand River Conservation Authority

Minutes - General Membership Meeting

Date: April 23, 2021
Time: 9:40 am
Location: GRCA Zoom Virtual Meeting
This meeting was streamed live for public viewing on GRCA's Board Webcast page

Members Present Marcus Adili, Bruce Banbury, Robert Bell, Richard Carpenter, John Challinor II, Brian Coleman, Bernie Corbett, Kevin Davis, Cathy Downer, Jim Erb, Susan Foxtan, Guy Gardhouse, Joan Gatward, Michael Harris, Helen Jowett, Daniel Lawrence, Geoff Lorentz, Ian MacRae, Jane Mitchell, Joe Nowak, Jerry Smith, Warren Stauch, Bruce Whale, Chris White

Regrets Les Armstrong, Kathryn McGarry
Staff Samantha Lawson, Karen Armstrong, Dwight Boyd, Beth Brown, Krista Bunn, Nancy Davy, Brandon Heyer, Sonja Radoja, Lisa Stocco, Pam Walther-Mabee, Gus Rungis, Eowyn Spencer

1. Call to Order

The Meeting was called to order by the Chair at 9:40 a.m.

2. Certification of Quorum

The Secretary-Treasurer certified quorum with 21 Members present. A total of 24 Members attended the meeting.

3. Chair's Remarks

The Chair made the following remarks in the preceding Source Protection Authority meeting and they are copied here for ease of reference:

- Samantha and I attended the Conservation Ontario Council Annual General Meeting on April 12. At that meeting, Samantha was re-elected for a second term on the

Board of Directors. We continue to support Samantha's expanded role on that Council

- The GRCA and GRCF hosted a virtual Town Hall on April 15 to discuss the status of the Guelph Lake Nature Centre project. Attendees expressed their continued support for the project and stressed the need to continue with fundraising for the project. GRCA and GRCF will be working together to develop a communication strategy for donors and ways in which fundraising for the Guelph Lake Nature Centre project can be enhanced.
- In support of the mental health and well-being of Grand River watershed residents during the Provincial lockdown, Grand River Parks, with the exception of Elora Quarry, will open for limited day-use access on April 23, ahead of the previously scheduled May 1 opening date. Due to the stay-at-home order, seasonal and overnight camping at all GRCA Parks has been suspended until the order is lifted
- GRCA will be applying another round of treatment to protect tree and forest health and control the Gypsy Moth infestation at Pinehurst and Brant Conservation Areas this spring. These properties will be temporarily closed to the public while the treatment is being applied. A news release will be issued in advance to inform members of the public, and campers will be informed directly
- As discussed at the March Board meeting, GRCA staff are reviewing and gathering information regarding the requested exemptions for the term limits of Chair and Vice-Chair positions on Conservation Authority Boards. An information report will be brought back to this Board in the next few months

4. Review of Agenda

21-62

Moved By John Challinor II

Seconded By Warren Stauch

THAT the agenda for the General Membership Meeting be approved as circulated.

Carried

5. Declarations of Pecuniary Interest

There were no declarations of pecuniary interests made in relation to the matters to be dealt with.

6. Minutes of the Previous Meetings

21-63

Moved By Marcus Adili

Seconded By Ian MacRae

THAT the minutes of the General Membership Meeting of March 26, 2021 be approved as circulated.

Carried

7. Business Arising from Previous Minutes

There was no business arising from the minutes of the previous meeting.

8. Hearing of Delegations

8.1 Grand Valley Trails Association

- The Board heard from members of the Grand Valley Trails Association regarding trail access at Elora Gorge Conservation Area. The delegation provided a presentation which highlighted the long-standing relationship with the Conservation Area, the informal nature of their trail use agreement, current issues and challenges with access to the trail. The delegation shared concerns with the GRCA decision to close the access point currently in use by GVTA members in light of legislation under the CA Act which prohibits access to conservation areas outside of permitted access points, trespassing challenges, and public safety concerns. The delegation suggested proposed solutions for consideration.
- The Chair thanked the delegation for their presentation. I.MacRae shared concerns about trail users accessing the permitted entry point by use of a main road, and noted that the Township is prepared to discuss alternative solutions and welcomes GVTA's input on future discussions.
- J.Challinor inquired if GRCA staff will be preparing an information report so that the Board may better understand the challenges in question. The Chair confirmed that a report will be brought to a future meeting, noting that the concerns related to alternate access points may impact other GRCA properties which also needs to be considered.
- The Chair thanked the members of the GVTA for their presentation, and the delegation exited the meeting.

J.Smith and R.Carpenter joined the meeting at 9:45 a.m.

9. Presentations

There were no Presentations.

10. Correspondence

11. 1st and 2nd Reading of By-Laws

None.

12. Reports:

12.1 Chief Administrative Officer's Report - Verbal Update

- S.Lawson noted that a CAO Update is not required at this time.

12.2 GM-04-21-33 - General Insurance Renewal 2021-2022

- B.Corbett inquired if the Chair had information to share regarding joint and several liability for insurance claims where multiple parties are named and the Provincial response to relevant legislation, and also inquired about the GRCA's methods of mitigating liability and risk.
- In response to B.Corbett's initial question, the Chair highlighted that it is an ongoing challenge for municipalities as well as property owners, in terms of

catastrophic injury claims. Board members discussed the concern, and K.Davis noted that if an update is provided at a future AMO meeting, that he would be happy to pass the information along to this Board.

- K.Armstrong responded to the second question, noting that the GRCA takes several measures to mitigate risk and liability, including risk management policies, risk assessments, inspections by staff and third parties, documentation, training, procedures, maintenance programs, waivers and agreements, appropriate signage, and regular review and updates of all relevant policies and procedures.
- There was some further discussion related to GRCA's group insurance membership, and a question about self-insuring. K.Armstrong said it could be brought to a future insurance committee meeting, and can be explored if needed.

21-64

Moved By Jane Mitchell

Seconded By Joe Nowak

THAT Report Number GM-04-21-33 – General Insurance Renewal 2021-2022 be received as information.

Carried

12.3 GM-04-21-31 - Cash and Investment Status

21-65

Moved By Bernie Corbett

Seconded By Marcus Adili

THAT Report Number GM-04-21-31 Cash and Investment Status – March 2021 be received as information.

Carried

12.4 GM-04-21-35 - Financial Summary

- B.Corbett inquired about the impact of the current pandemic lockdown and related financial forecasting. S. Radoja highlighted that revenue projections with greatest risk are conservation areas programs and the ability to open for camping. Interest in making camping reservations has been strong, day use and membership sales have been going well, and the revenue projections for Conservation Areas are on the conservative side for this period. Conservation area revenues are also dependent on camping, which will be impacted by current and future lockdowns.

21-66

Moved By Jerry Smith

Seconded By Brian Coleman

THAT the Financial Summary for the period ending March 31, 2021 be approved.

Carried

12.5 GM-04-21-30 - Development, Interference with Wetlands and Alterations to Shorelines Regulation

21-67

Moved By Ian MacRae

Seconded By Joan Gatward

THAT Report Number GM-04-21-30 - Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation be received as information.

Carried

12.6 GM-04-21-32 - Conestogo Dam Concrete Rehabilitation Phase 2B - DR 21.013 Tender Award

- In response to questions, D.Boyd highlighted that the project oversight fees are in line with this type of project, and that the phase two work is expected to be completed closer to September.

21-68

Moved By Susan Foxton

Seconded By Michael Harris

THAT the Grand River Conservation Authority accept the tender with Marbridge Construction Ltd. in the amount of \$798,910 (including HST) as it was the lowest tender submitted meeting all tender requirements, and

THAT AECOM Canada Ltd. be retained to oversee the Contract Administration and Quality Assurance for the project at a cost \$100,457 (including HST).

Carried

12.7 GM-04-21-34 - Current Watershed Conditions

D.Boyd highlighted uncommonly low precipitation so far this year, noting that conditions are being carefully monitored.

21-69

Moved By Ian MacRae

Seconded By Geoff Lorentz

THAT Report Number GM-04-21-34 – Current Watershed Conditions as of April 14, 2021 be received as information.

Carried

13. Committee of the Whole

Not required.

14. General Business

There was no General Business.

15. 3rd Reading of By-Laws

None.

16. Other Business

17. Closed Meeting

21-70

Moved By Joan Gatward

Seconded By Cathy Downer

THAT the General Membership enter a closed meeting to discuss a confidential matter.

Carried

The General Membership convened in closed session and the live meeting stream was stopped. S.Lawson requested that L.Stocco, P.Walther-Mabee, and B.Brown remain for the closed session, and all other staff were asked to exit the meeting.

17.1 Security of Property - Verbal Report

B.Whale joined the meeting at 10:19 a.m. during the closed session.

21-71

Moved By Susan Foxtton

Seconded By Brian Coleman

THAT the General Membership return to open session.

Carried

The General Membership reconvened in open session and the live meeting stream was resumed.

18. Next Meeting - May 28, 2021 at 9:30 a.m.

19. Adjourn

The meeting was adjourned at 10:56 a.m.

21-72

Moved By Marcus Adili

Seconded By Bernie Corbett

THAT the meeting of the General Membership be adjourned.

Carried

Chair

Secretary-Treasurer

May 18, 2021

Board and Chair of the Grand River Conservation Authority,

I would like to have this matter added to the agenda for the upcoming meeting of May 28th, 2021.

I am asking the board for a refund for fees that have been paid with regards to a garage I wish to construct on my property at 33 River Rd., in the County of Brant. I submitted my drawings to the County building department and was informed I had to have clearance from the GRCA. When I contacted the GRCA about this I was told I would have to apply and pay for a minor permit, which as you know costs \$430.00. I do not consider this a minor amount for what is called a minor permit for something so trivial, simply because I am adjacent to a wetland. The lack of disturbance to the property will be so minimal the building department did not even require a lot grading plan.

During emails to and from your office I was told, on more than one occasion that such a build would have little, low, or no adverse effect on the wetland or watershed in question. The build area in is just shy of 120m from the "wet land" area to the south of my property, and about 25m higher in elevation, with that there would be no association to any flood event.

Highlighted in the emails were the O. Reg. 150/06 and O. Reg 57/13 which I have gone over and in them there is no mention of a permit being required, but, and I quote in part,

*"3. (1) The Authority may grant permission for development in or on the areas described in subsection 2 (1) if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. O. Reg. 150/06, s. 3 (1).
(2) The permission of the Authority shall be given in writing, with or without conditions. O. Reg. 150/06, s. 3 (2).
(3) Subject to subsection (4), the Authority's executive committee, or one or more employees of the Authority that have been designated by the Authority for the purposes of this section, may exercise the powers and duties of the Authority under subsections (1) and (2) with respect to the granting of permissions for development in or on the areas described in subsection 2 (1). O. Reg. 57/13, s. 2."*

In my opinion this reads that if there is no interference with the hydrologic function of a wetland there should be nothing more than written permission to build.

I had no choice but to apply and pay for the GRCA permit to satisfy the county's building department for a building permit, and by submitting this their conditions have been met.

If it is not possible for you to give written permission, simply refund the permit amount of \$430.00, all conditions will have been met, and all parties will be satisfied.

Thank you for your time,

Regards,

Kerry Game

Grand River Conservation Authority

Report number: GM-05-21-36
Date: May 28, 2021
To: Members of the Grand River Conservation Authority
Subject: Cash and Investment Status – April 2021

Recommendation:

THAT Report Number GM-05-21-36 Cash and Investment Status – April 2021 be received as information.

Summary:

The cash position included Notes Receivable of the Grand River Conservation Authority as at April 30, 2021 was \$37,388,207 with outstanding cheques written in the amount of \$116,006.

Report:

See attached.

Financial implications:

Interest rates, etc. are shown on the report.

Other department considerations:

Not applicable.

Prepared by:

Carol Anne Johnston
Senior Accountant

Sonja Radoja
Manager of Corporate Services

Approved by:

Karen Armstrong
Deputy CAO/Secretary Treasurer

**Grand River Conservation Authority
Cash and Investments Status Report
April 30, 2021**

BANK ACCOUNTS	Location	Type	Amount	Interest Rate
	CIBC	Current Account	15,513,951	0.65%
	RBC	Current Account	203,091	nil
	Wood Gundy	Current Account	12,477	nil
	CIBC - SPP Holding	Current Account	249,746	0.65%
	TOTAL CASH - CURRENT ACCOUNT		15,979,265	

INVESTMENTS	Date Invested	Location	Type	Amount	Face Value Interest Rate	Yield Rate	Date of Maturity	2021 Total Interest Earned/ Accrued
		CIBC Renaissance	High Interest Savings Account	4,375,199	0.25%	0.25%	not applicable	10,340
		One Investment Savings	High Interest Savings Account	4,310,743	0.165%	0.165%	not applicable	7,112
	August 24, 2017	Bank of Montreal	Bond	1,550,000	1.61%	2.01%	October 28, 2021	25,384
	May 17, 2019	Bank of Nova Scotia	Bond	800,000	1.90%	2.15%	December 2, 2021	15,674
	June 17, 2019	Cdn Western Bank	Bond	1,542,000	2.788%	2.09%	September 13, 2021	22,659
	October 23, 2019	Cdn Western Bank	Bond	2,010,000	2.800%	2.78%	September 6, 2024	55,625
	December 23, 2019	Laurentian Bank	Bond	3,821,000	3.450%	2.57%	June 27, 2023	99,259
	January 16, 2020	Cdn Western Bank	Bond	3,000,000	2.597%	2.45%	September 6, 2024	73,383
	TOTAL INVESTMENTS			21,408,942				\$309,436
TOTAL CASH AND INVESTMENTS				\$37,388,207				
* Reserve Balance at December 31st, 2020				23,899,839				

Investment By Institution

	<u>% of Total Portfolio</u>
C.I.B.C.	20%
Bank of Nova Scotia	4%
Bank of Montreal	7%
Royal Bank	0%
Laurentian	18%
Cdn Western Bank	31%
One Investment Program	20%
	<u>100%</u>

* Reserve balances are reviewed annually by the Board in November.

Grand River Conservation Authority

Report number: GM-05-21-39
Date: May 28, 2021
To: Members of the Grand River Conservation Authority
Subject: Financial Summary for the Period Ending April 30, 2021

Recommendation:

THAT the Financial Summary for the period ending April 30, 2021 be approved.

Summary:

The Financial Summary includes the 2021 *actual* year-to-date income and expenditures. The budget approved at the February 26, 2021 General Meeting is included in the *Budget* column. The *Current Forecast* column indicates an estimate of income and expenditures for the whole year. At this time a surplus of \$217,000 at year-end is forecast.

Report:

- A. Total Revenue increased by \$130,000.
 - Resource Planning Permit Fees increased \$50,000 and Plan Review revenue increased \$50,000.
 - Conservation Lands Timber Revenue increased by \$30,000.
- B. Total Expenditures decreased by \$117,000.
 - Water Resource-Planning compensation and benefit expenses decreased by \$44,000 due to staff vacancies.
 - Flood Forecasting and Warning compensation and benefit expenses decreased by \$25,000 due to staff vacancies.
 - Conservation Services compensation and benefit expenses decreased by \$30,000 due to staff vacancies, rate savings and staff costs reallocated to special projects.
 - Corporate Services compensation and benefit expenses decreased by \$18,000 due to staff vacancies.
- C. Net Transfer to Reserves increased by \$30,000.
 - Transfer to the Forestry reserve increased by \$30,000 related to revenue realized from Timber Sales.

Conservation Area Revenue

The provincial stay-at-home order (pandemic) resulted in nil camping revenue for May 2021 and seasonal campers were advised that there is a one-time fee reduction to reflect the shortened season in the amount of \$350. These negative impacts are offset by strong day-use and membership revenue. April year to date revenue is up approximately \$500,000 which more than offsets the lost seasonal camping revenue of \$200,000. Note that in 2020 there was also nil camping revenue for May due to the provincial shutdown of businesses.

The Financial Summary is attached.

Financial implications:

The activity summarized will result in a surplus of \$217,000 at December 31, 2021.

Other department considerations:

The management committee and appropriate supervisory staff receive monthly financial reports and advise the finance department of applicable forecast adjustments.

Prepared by:

Kayleigh Keighan
Financial Controller

Sonja Radoja
Manager Corporate Services

Approved by:

Karen Armstrong
Secretary-Treasurer/Deputy CAO

**GRAND RIVER CONSERVATION AUTHORITY
FINANCIAL SUMMARY - FORECAST**

General Membership May 28, 2021

FORECAST - MARCH 31, 2021 - NET RESULT **\$0**

CHANGES - April 2021

Sch 1	Water Resource-Planning	\$44,000	Compensation and Benefit Expenses decreased-vacancy	\$44,000
Sch 2	Flood Forecasting & Warning	\$25,000	Compensation and Benefit Expenses decreased-vacancy	\$25,000
Sch 4	Resource Planning	\$50,000	Permit Fee Revenue increased	\$100,000
		\$50,000	Plan Review Fees increased	
Sch 6	Conservation Services	\$30,000	Compensation and Benefit Expenses decreased-vacancy/special funding	\$30,000
Sch 9	Corporate Services	\$18,000	Compensation and Benefit Expenses decreased-vacancy	\$18,000
Sch 10	Conservation Lands	\$30,000	Woodlot thinning - Timber Revenue increased	\$0
		(\$30,000)	Transfer to Forestry Reserve	

FORECAST - APRIL 30, 2021 - NET RESULT **\$217,000**

**GRAND RIVER CONSERVATION AUTHORITY
STATEMENT OF OPERATIONS
FOR THE PERIOD ENDING April 30, 2021**

SCHEDULE		Budget 2020	Actual 2020	Budget 2021	Actual YTD	Previous Forecast	Current Forecast	Forecast Change
REVENUE								
Municipal								
General Municipal Levy (Operating)	various	10,977,000	10,977,000	11,275,000	3,758,783	11,275,000	11,275,000	0
General Municipal Levy (Capital)	various	950,000	950,000	950,000	316,667	950,000	950,000	0
Special Municipal Levy	various	150,000	71,943	130,000	4,680	130,000	130,000	0
Other	various	813,000	639,589	800,000	1,049,817	800,000	800,000	0
		12,890,000	12,638,532	13,155,000	5,129,947	13,155,000	13,155,000	0
Government Grants								
MNRF Transfer Payments	various	449,688	449,688	449,688	0	449,688	449,688	0
Source Protection Program-Provincial	various	720,000	681,421	640,000	185,419	640,000	640,000	0
Other Provincial	various	1,564,500	863,182	1,267,500	662,082	1,267,500	1,267,500	0
Federal	various	335,000	352,880	215,000	226,087	215,000	215,000	0
		3,069,188	2,347,171	2,572,188	1,073,588	2,572,188	2,572,188	0
Self Generated								
User Fees and Sales								
<i>Enquiries and Permits</i>	4	494,000	565,822	494,000	329,973	494,000	544,000	50,000
<i>Plan Input and Review</i>	4	400,000	410,804	400,000	222,611	400,000	450,000	50,000
<i>Nursery and Woodlot Management</i>	5	465,000	174,627	365,000	333,671	365,000	395,000	30,000
<i>Consulting</i>	4	0	0	0	3,726	0	0	0
<i>Conservation Lands Income</i>	10	71,000	78,542	71,000	8,769	71,000	71,000	0
<i>Conservation Areas User Fees</i>	13	9,000,000	6,124,125	7,200,000	1,371,163	7,200,000	7,200,000	0
<i>Nature Centres and Camps</i>	8	1,018,000	233,439	500,000	196,867	500,000	500,000	0
<i>Merchandising and Sales</i>	8	0	605	0	0	0	0	0
Property Rentals	11	2,873,000	3,041,678	2,898,000	1,571,938	2,898,000	2,898,000	0
Hydro Generation	12	515,000	799,841	530,000	111,373	530,000	530,000	0
Land Sales	10	0	3,419,145	0	0	0	0	0
Grand River Conservation Foundation	various	522,000	161,820	285,000	5,670	285,000	285,000	0
Donations	various	126,000	0	100,000	28,656	100,000	100,000	0
Landowner Contributions	5	200,000	47,289	200,000	137,101	200,000	200,000	0
Investment Income	14	490,000	488,691	565,000	67,201	565,000	565,000	0
Miscellaneous Income	various	8,000	295,185	8,000	1,507	8,000	8,000	0
Total Self-Generated Revenue		16,182,000	15,841,613	13,616,000	4,390,226	13,616,000	13,746,000	130,000
TOTAL REVENUE		32,141,188	30,827,316	29,343,188	10,593,761	29,343,188	29,473,188	130,000

GRAND RIVER CONSERVATION AUTHORITY
STATEMENT OF OPERATIONS
FOR THE PERIOD ENDING April 30, 2021

SCHEDULE	Budget 2020	Actual 2020	Budget 2021	Actual YTD	Previous Forecast	Current Forecast	Forecast Change	
EXPENSES								
OPERATING								
Water Resources Planning & Environment	1	2,235,700	1,617,996	2,059,700	460,608	2,059,700	2,015,700	(44,000)
Flood Forecasting and Warning	2	764,700	658,712	828,800	202,594	828,800	803,800	(25,000)
Water Control Structures	3	1,749,700	1,590,655	1,785,700	394,448	1,785,700	1,785,700	0
Resource Planning	4	2,063,800	1,984,531	2,082,200	509,480	2,082,200	2,082,200	0
Forestry & Conservation Land Property Taxes	5	1,446,500	858,656	1,365,000	229,755	1,365,000	1,365,000	0
Conservation Services	6	867,200	685,337	635,200	103,652	635,200	605,200	(30,000)
Communications & Foundation	7	701,500	565,010	524,500	125,326	524,500	524,500	0
Environmental Education	8	1,376,600	602,324	840,600	145,945	840,600	840,600	0
Corporate Services	9	3,595,675	3,491,047	3,627,629	1,000,378	3,627,629	3,609,629	(18,000)
Conservation Lands	10	2,011,900	1,814,213	2,048,900	465,646	2,048,900	2,048,900	0
Property Rentals	11	1,563,200	1,218,702	1,478,200	378,185	1,478,200	1,478,200	0
Hydro Production	12	90,000	114,429	92,000	47,126	92,000	92,000	0
Conservation Areas	13	7,985,000	5,573,218	7,200,000	684,418	7,200,000	7,200,000	0
Miscellaneous	14	70,000	30,321	70,000	6,116	70,000	70,000	0
Information Systems	16	1,320,000	1,202,902	1,382,000	418,209	1,382,000	1,382,000	0
Motor Pool	16	929,000	714,759	936,000	216,404	936,000	936,000	0
Less: Internal Charges (IS & MP)	16	(2,249,000)	(1,917,661)	(2,318,000)	(634,613)	(2,318,000)	(2,318,000)	0
Total OPERATING Expenses		26,521,475	20,805,151	24,638,429	4,753,677	24,638,429	24,521,429	(117,000)
CAPITAL								
Water Resources Planning & Environment	1	110,000	5,932	110,000	11,034	110,000	110,000	0
Flood Forecasting and Warning	2	190,000	298,606	190,000	145,531	190,000	190,000	0
Water Control Structures	3	2,700,000	1,365,239	1,500,000	156,208	1,500,000	1,500,000	0
Nature Centres	8	0	0	0	0	0	0	0
Conservation Areas	13	2,150,000	795,020	1,500,000	93,320	1,500,000	1,500,000	0
Corporate Services	9	0	0	0	0	0	0	0
Information Systems	16	200,000	79,333	170,000	60,449	170,000	170,000	0
Motor Pool	16	550,000	476,828	450,000	(52,428)	450,000	450,000	0
Less: Internal Charges (IS & MP)	16	(245,000)	(645,826)	(163,000)	618,897	(163,000)	(163,000)	0
Total Capital Expenses		5,655,000	2,375,132	3,757,000	1,033,011	3,757,000	3,757,000	0
SPECIAL								
Water Resources Planning & Environment	1	240,000	241,858	220,000	35,145	220,000	220,000	0
Flood Forecasting and Warning	2	516,000	214,001	360,000	37,317	360,000	360,000	0
Forestry	5	100,000	25,635	100,000	1,306	100,000	100,000	0
Conservation Services	6	916,000	663,161	1,060,000	348,021	1,060,000	1,060,000	0
Environmental Education	8	50,000	54,753	0	14,267	0	0	0
Conservation Land Purchases/Land Sale Expenses	10	0	59,047	0	2,921	0	0	0
Conservation Lands	10	750,000	354,007	658,000	242,396	658,000	658,000	0
Miscellaneous	14	35,000	0	0	0	0	0	0
Source Protection Program	15	720,000	681,421	640,000	185,419	640,000	640,000	0
Total SPECIAL PROJECTS Expenses		3,327,000	2,293,883	3,038,000	866,792	3,038,000	3,038,000	0
Total Expenses		35,503,475	25,474,166	31,433,429	6,653,480	31,433,429	31,316,429	(117,000)
Gross Surplus		(3,362,287)	5,353,150	(2,090,241)	3,940,281	(2,090,241)	(1,843,241)	247,000
Prior Year Surplus Carryforward		377,287	377,287	316,241	377,287	316,241	316,241	0
Net Funding FROM/(TO) Reserves		2,985,000	(5,414,196)	1,774,000	625,778	1,774,000	1,744,000	(30,000)
NET SURPLUS		0	316,241	0	4,943,346	0	217,000	217,000

Grand River Conservation Authority

Report number: GM-05-21-38
Date: May 28, 2021
To: Members of the Grand River Conservation Authority
Subject: Provincial Offences Act Officer Appointments

Recommendation:

THAT the Grand River Conservation Authority appoints Spencer Roberts, Matt Beauvais, and Jacob Benham as Provincial Offences Act Officers to enforce section 29 of the Conservation Authorities Act.

Summary:

Not applicable.

Report:

The Conservation Authorities Act, section 29 authorizes the Grand River Conservation Authority (GRCA) to make regulations applicable to lands owned by the GRCA. Section 30.1 of the Conservation Authorities Act give an authority the ability to appoint officers for the purposes of ensuring compliance with the Act and regulations, and R.R.O. 1990, Regulation 106 Conservation Areas – Grand River, authorizes the GRCA to appoint staff members as Provincial Offences (POA) Officers to enforce that specific regulation.

The GRCA enforcement program adapts to meet the current challenges facing the organization. Watershed urbanization has resulted in increased pressure on GRCA properties. Conservation Areas provide recreational day use opportunities and camping options, while passive lands offer use of the GRCA's natural habitat. A greater number of users has resulted in an increased number of enforcement challenges such as alcohol use, vandalism, off-leash dogs, and trespassing.

Conservation Area Superintendents, Assistant Superintendents and Park Operations Technicians are typically designated as POA officers to enforce the Conservation Authorities Act and the Trespass to Property Act in Conservation Areas and on other GRCA properties.

Spencer Roberts is a Park Operations Technician (POT) working at Rockwood Conservation Area. S.Roberts started his career with the GRCA as a maintenance student in 2014 and progressed into the Lead Hand position in 2017. In March 2020, he was appointed to the seasonal full-time position of POT at Rockwood Conservation Area His education and training is from Sir Sandford Fleming College, where he received a Fish and Wildlife Technician Diploma and an Environmental Technician Diploma. S.Roberts has recently completed the Conservation Ontario - Provincial Offences Officer course – Level 1. This candidate meets the GRCA requirements for appointment.

Matt Beauvais is a Park Operations Technician working at Pinehurst Lake Conservation Area. M.Beavais began his career with the GRCA as a security student in 2018, filled a

temporary position of Park Operations Technician in 2019, and has been working in the seasonal full-time position of POT at Pinehurst Lake since March 2020. His education is from Conestogo College in Police Foundations. M.Beauvais has recently completed the Conservation Ontario - Provincial Offences Officer course – Level 1. This candidate meets the GRCA requirements for appointment.

Jacob Benham is a Park Operations Technician working at Elora Gorge Conservation Area. J.Benham began his service with the GRCA in 2015 working as a maintenance student, progressing to the seasonal full time position of Lead Hand in 2018. His current role is Park Operations Technician at Elora Gorge Conservation Area. His education is from Sir Sandford Fleming College where he obtained Fish and Wildlife Technician and Fish and Wildlife Technologist Diplomas. J.Benham has recently completed the Conservation Ontario - Provincial Offences Officer course – Level 1. This candidate meets the GRCA requirements for appointment.

Financial implications:

Not applicable.

Other department considerations:

Not applicable.

Prepared by:

Pam Walther-Mabee
Manager of Conservation Areas

Approved by:

Samantha Lawson
Chief Administrative Officer

Karen Armstrong
Deputy CAO, Secretary-Treasurer

Grand River Conservation Authority

Report number: GM-05-21-37
Date: May 20, 2021
To: Members of Grand River Conservation Authority
Subject: Groundwater Monitoring in the Grand River Watershed

Recommendation:

THAT Report Number GM-05-21-37 – Groundwater Monitoring in the Grand River Watershed be received as information.

Summary:

Groundwater plays a key role in the health and local economy of the Grand River watershed as a water source for municipal and private users, and supports sensitive natural heritage species and features.

Monitoring groundwater is an important process in order to continually manage and understand groundwater availability and quality. Monitoring can take several forms – such as short duration, long duration, shallow or deep monitoring - depending on the purpose of the monitoring. One component of monitoring is tracking groundwater levels over the long term, such as years and decades, to evaluate how groundwater is changing over time in response to changes in the watershed.

Within the Grand River watershed, groundwater is monitored at over fifty long-term wells as a part of the Provincial Groundwater Monitoring Network (PGMN) program and GRCA's groundwater monitoring program. The GRCA has partnered with the province since 2002 to deliver the PGMN program within the watershed. The objective of the program is to monitor groundwater conditions away from the influence of pumping wells. Municipalities carry out monitoring in the vicinity of the municipal well fields they operate.

GRCA's groundwater monitoring data is used to support various projects in the watershed such as climate change, source protection, subwatershed, and municipal studies, and as a part of university research initiatives.

Report:

Introduction

Groundwater is a vital resource within the Grand River watershed with thirty-five municipalities and two First Nations reserves maintaining 49 drinking water systems. Approximately 69% of the municipal drinking water is sourced either solely from groundwater or from blended groundwater/surface water supplies. There are close to 200 municipal wells within the watershed including the Region of Waterloo with over 100 municipal wells and the City of Guelph, with over 20 municipal wells, maintaining some of the largest groundwater based municipal systems in Canada. The rural population of the watershed also relies on groundwater for private drinking water and agricultural supply. There are some areas in the watershed where the groundwater is not potable due to local geology. In those areas, rural residents truck in water, rely on cisterns, or draw water from surface water sources.

Increasing population and development in the watershed has necessitated a need to better understand groundwater systems and their connection to the natural environment. There is a need to balance groundwater for human consumption with ecological requirements for the support of surface water baseflows (ie. groundwater discharge), temperature regimes for aquatic habitat, and wetland function.

Groundwater forms an important part of the surface water flow system in the Grand River watershed. In combination with flow augmentation from the large multipurpose reservoirs, groundwater is important to the municipal water supplies that draw from the river by supporting quantity and quality, and also to support the water quality and habitat in the river. Aquifer function and the protection of groundwater quality is managed through informed development of the watershed's recharge areas to the underlying groundwater systems. Information developed as part of the source water protection program has furthered the understanding of groundwater systems and aided in the informed decision making to manage these systems.

Since 2002, the Grand River Conservation Authority (GRCA) has maintained a groundwater monitoring program of 55 wells throughout the Grand River watershed. The groundwater monitoring program began in partnership with the Ministry of Environment, Conservation and Parks (MECP) in 2002 as a part of the Provincial Groundwater Monitoring Network (PGMN). The program has since expanded to include GRCA monitoring wells that have been drilled in partnership with the Ontario Geological Survey (OGS) - a section of the Ministry of Energy, Northern Development, and Mines. To date, of the 55 monitoring wells, 37 wells are a part of the PGMN and 18 are monitored exclusively by the GRCA. The objective of the groundwater monitoring program is to collect long term data in areas of the watershed where groundwater levels are not significantly affected by pumping wells associated with municipal or private water supplies. Figure 1 shows the location of the monitoring wells across the watershed.

The Grand River Water Management Plan identified the need for a long-term groundwater monitoring program and the PGMN in the watershed. Monitoring ambient groundwater conditions provides regionally significant data to support such issues as drought response, trends in climate change, and provides a basis of support for informed resource management decisions.

Value in Long-Term Data

As surface water infiltrates into the ground and reaches the water table, the groundwater tends to flow slowly through the subsurface aquifers. Groundwater levels can take time – ranging from days to months - to reflect changes in precipitation patterns. To assess long-term change, groundwater levels are monitored for a minimum of 10 years. Some of the GRCA's wells have been monitored since 2002, with the most recent wells added to the network in 2012.

These long-term wells are sited away from the effects of large groundwater takers and track ambient groundwater levels and chemistry within the numerous aquifers across the watershed.

The wells are monitored on an hourly basis and sampled for water quality annually each fall. The resulting data provides information on long-term trends in groundwater levels and quality that reflects changes in climate and precipitation that is separate from pumping or aggregate extraction. These data in turn help to inform:

- Source Water Protection groundwater studies,

- The MECP's proposed area-based approach that may be used to manage water takings in a water quantity stressed area under the province's 'Updating Ontario's Water Quantity Management Framework',
- Permit to Take Water applications,
- Hydrogeological studies as a part of applications under the Aggregate Resources Act,
- Subwatershed and municipal studies,
- Ontario Low Water Response Program,
- Climate change studies,
- University research studies,
- and groundwater model calibration and verification.

A Changing Watershed and Impacts to Groundwater

The changing climate in the Grand River watershed is having an effect on both groundwater quantity and quality.

Climate change was investigated a component of two source water protection studies and a university research initiative. These studies evaluated the potential impact to groundwater levels in the Lower Whitemans subwatershed, Township of Centre Wellington, and Township of Guelph-Eramosa / City of Guelph. The studies all resulted in similar findings - namely, precipitation is expected to increase in late winter/spring with longer hotter, drier summers extending further into early fall. This is expected to lead to increased groundwater recharge in the spring followed by potentially reduced baseflows to streams in the summer and lower groundwater levels into the fall. The periods of the year outside the growing season, early spring and late fall and when ground is unfrozen are the most important periods of the year for groundwater recharge.

In addition to climate change, land use changes which reduce the capability for surface water to infiltrate into the groundwater system can increase the amount of water on the landscape and the potential for flooding, and also reduce the availability of groundwater for both drinking water and the natural environment including groundwater discharge to streams and wetlands.

The watershed is also experiencing increased urban population growth which is expected to continue to increase in the coming years. Increasing population and urbanization puts additional demands on groundwater availability while urban road salting impacts groundwater quality.

Long term groundwater monitoring sites and the awareness around potential changes to the groundwater system allows for the development of proactive approaches to its management; currently this includes studies such as Source Protection Tier 3 Water Budget Studies, subwatershed studies, and municipal water supply master plans.

Trend Analysis

Groundwater level Information from the GRCA's groundwater monitoring program from a 20 year period was compiled and summarized on a monthly basis. Using this information, groundwater levels for a given year can be compared to their long term average to assess increasing or decreasing trends over the years.

Groundwater levels were summarized into the classifications shown on Table 1.

Table 1: Percentile Classifications for GRCA Groundwater Level Data

Percentile		
<10%	Groundwater levels for the given year are less than 10% of their long term average	Large decline in groundwater level compared to long term average for the well
10-25%	Groundwater levels are between 10 and 25% of their long term average	Moderate decline in groundwater levels compared to long term average for the well
25-75%	Groundwater levels are between 25 and 75% of their long term average	Wells are not indicating substantial change from their long term average
75-90%	Groundwater levels are between 75 and 90% of their long term average	Moderate increase in groundwater levels compared to long term average for the well
>90%	Groundwater levels are greater than 90% of their long term average	Large increase in groundwater levels compared to long term average for the well

Figure 1 shows groundwater levels in March 2020. Groundwater levels in almost all the wells were showing very high levels (often greater than 90% greater than their long term average). This is not a common response for groundwater levels at these sites in March. In past years, groundwater levels at these wells are within their ‘average’ range or slightly lower than average. However for in early 2020, January and February experienced uncharacteristic freeze/thaw cycles and there was a large rain event in January. The rain event coupled with often unfrozen ground conditions, allowed for increased recharge during the winter of 2020 resulting in high groundwater levels for in March 2020.

Conversely Figure 2 shows very low groundwater levels recorded for October 2016. The spring and summer of 2016 experienced extremely low rainfall which triggered Low Water Response protocols. The low rainfall during the spring and summer months resulted in lower than normal groundwater levels in the fall.

These two examples illustrate how changing climate and precipitation can seasonally affect groundwater levels and also the delayed response in groundwater levels. As the GRCA has collected long term groundwater data spanning two decades, it’s now possible to assess the impact of changing precipitation and air temperatures on groundwater levels over time, as demonstrated in Figures 2 and 3.

Case Studies

Appendix A contains three examples of different types of studies/programs where data from the PGMN/GRCA groundwater monitoring program have been a part of the project: a subwatershed study in the City of Kitchener, a source protection water budget study in the Township of Centre Wellington, and the Low Water Response Program in Brant County (Whitemans Creek subwatershed).

Financial implications:

All PGMN wells and infrastructure are maintained by the MECP with technical staffing provided by the GRCA. The provincial investment in the PGMN program within the

Grand River watershed was approximately \$250,000 for initial monitoring well installations (55 wells) and approximately \$10,000 annually for sampling, equipment, and well maintenance. As a part of the partnership with the province, GRCA field staff collect groundwater level data four times per year, sample the wells annually, and ensure the wells are maintained and data logging equipment is in good working order.

All non-PGMN monitoring wells were drilled and converted to monitoring wells by the Ontario Geological Survey (OGS). These wells were drilled as a part of detailed geological studies completed by the OGS to provide high quality information on the geology, aquifers, and regional groundwater flow within the watershed. The cost to drill and instrument the wells was approximately \$145,000 in total which was funded by the Ontario Geological Survey. Additional funding was provided at the time of installation for maintenance and eventual well abandonment as necessary. Costs to the GRCA are groundwater technologist staff time to collect water level data four times per year and manage the data within a GRCA groundwater database.

Other department considerations:

None.

Prepared by:

Sonja Strynatka, P.Geo.
Senior Hydrogeologist

Approved by:

Dwight Boyd, P.Eng.
Director of Engineering

Figure 1: PGMN and GRCA groundwater monitoring locations in the Grand River watershed

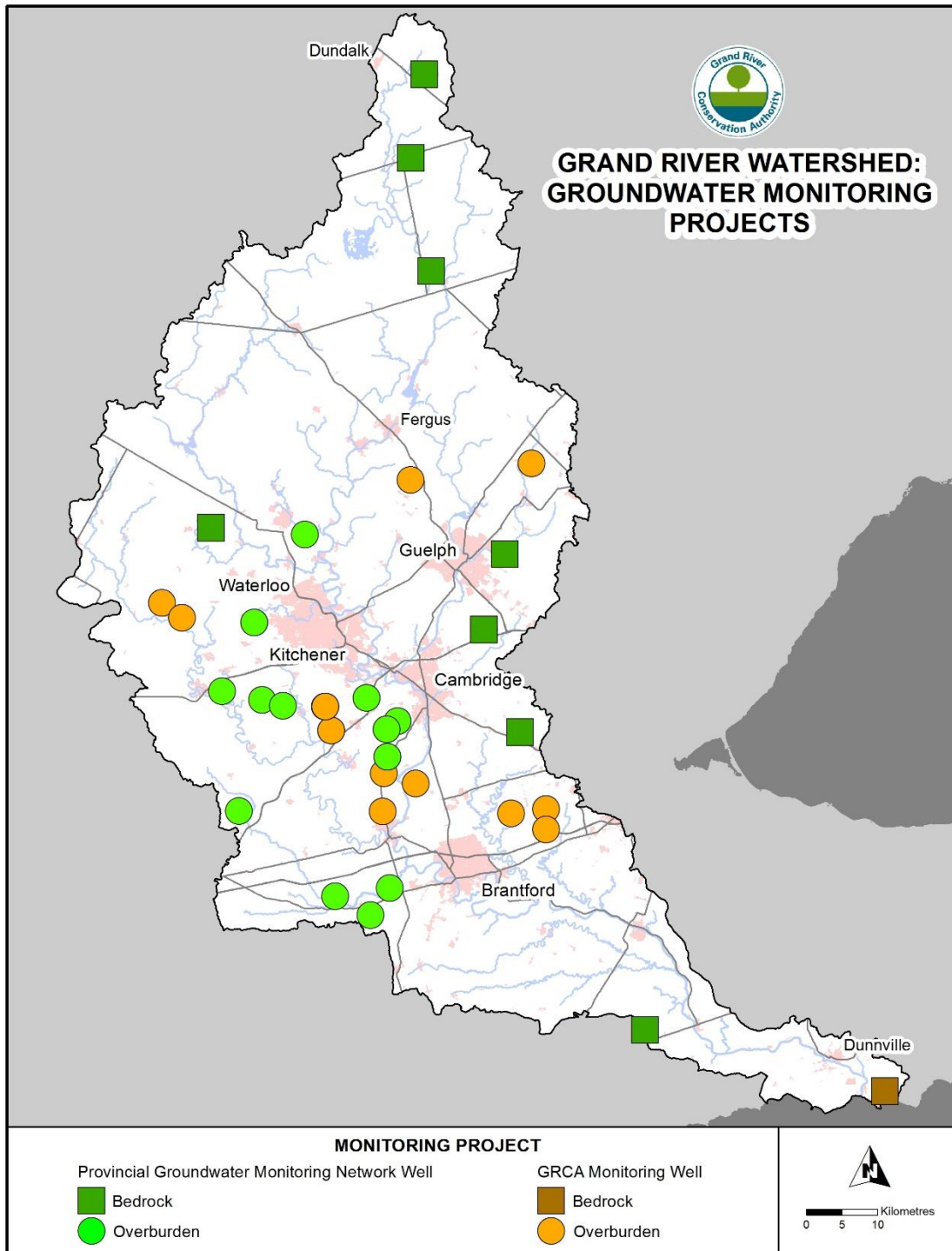


Figure 2: Groundwater monitoring percentile data comparing March, 2020 to average long term conditions

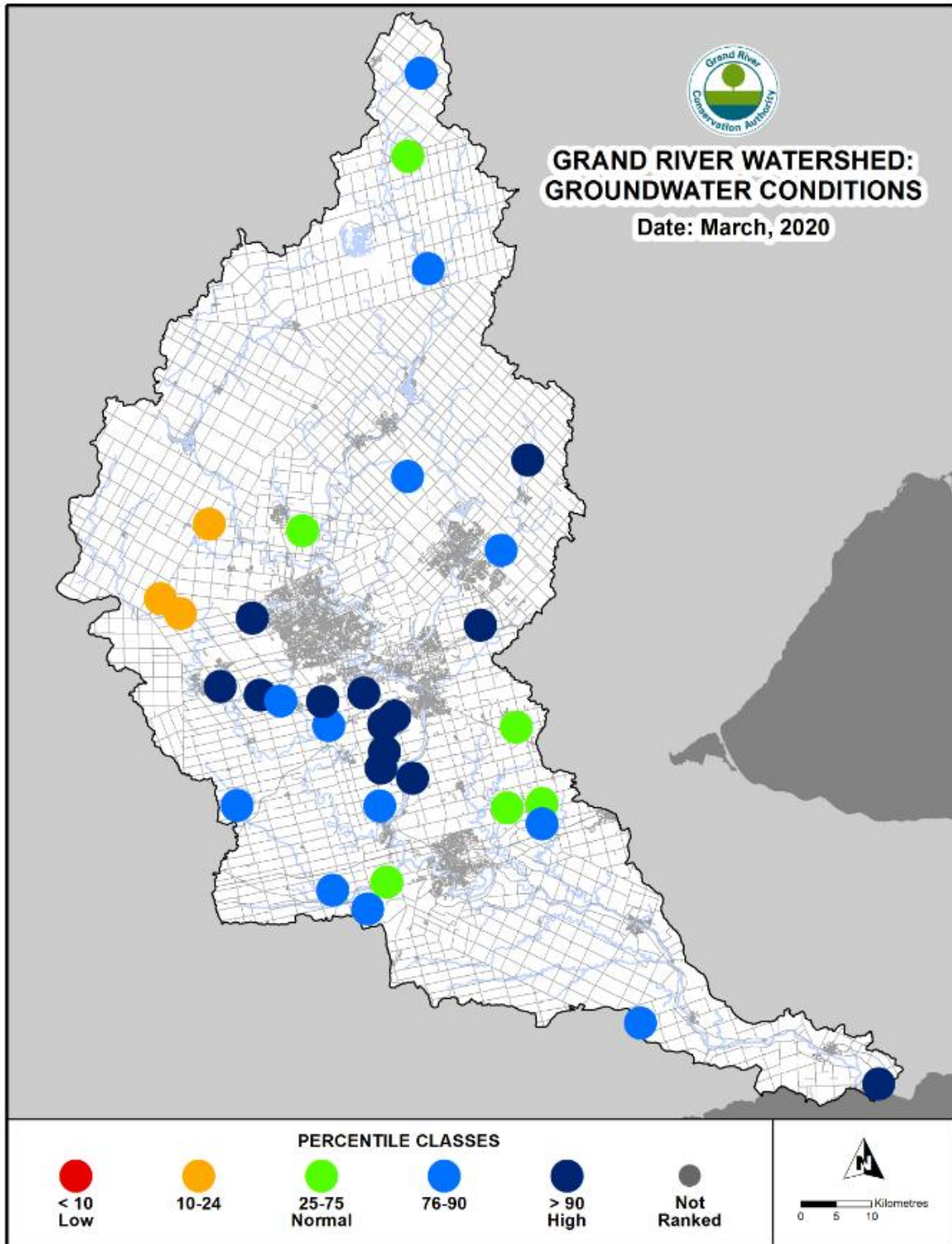
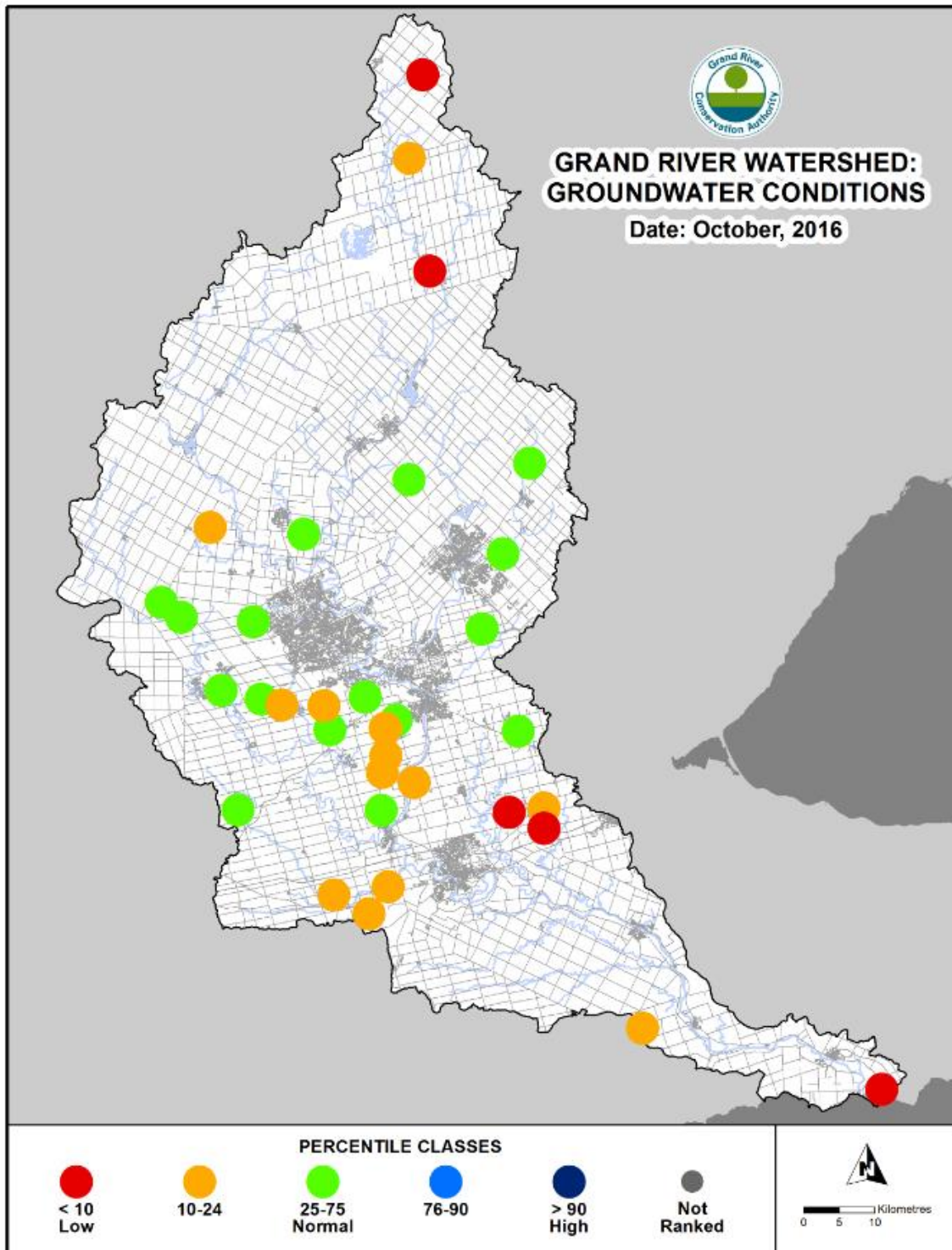


Figure 3: Groundwater monitoring percentile data comparing October, 2016 to average long term conditions.



Appendix A

The following case studies provide examples of three different types of studies/programs where data from the GRCA groundwater monitoring program have been a part of the project: a subwatershed study in the City of Kitchener, a source protection study in the Township of Centre Wellington, and the Low Water Response Program in Brant County (Whitemans Creek subwatershed). Case study locations are shown in Figure 4.

Case Study 1: Upper Blair Creek Subwatershed Coordinated Monitoring Project (City of Kitchener)

The Upper Blair subwatershed is located in the southwest area of the City of Kitchener. The area consists of Blair Creek and its tributaries, many of which are classified as cold water features and support cold water dependant species such as brook trout. The area is also currently under development from rural to urban residential. Prior to development, a coordinated monitoring program was established between the City of Kitchener and the GRCA to evaluate the potential impacts from urban development to Blair Creek. Groundwater, surface water, and biological monitoring sites were established prior to development to evaluate pre-development baseline conditions and have been continuously monitored through the development phases.

As a part of the Upper Blair Creek groundwater monitoring program, one of GRCA's PGMN wells was selected within the study area to provide data for pre-, during, and post-development groundwater levels and continuous conductivity concentrations (as a proxy for chloride). This well has been monitoring groundwater levels on an hourly basis since 2002. The long term pre-development data from this well provides data to establish groundwater levels and chemistry prior to development. As development has progressed in this subwatershed, this PGMN well continues to play an important role in tracking changes to groundwater levels and quality.

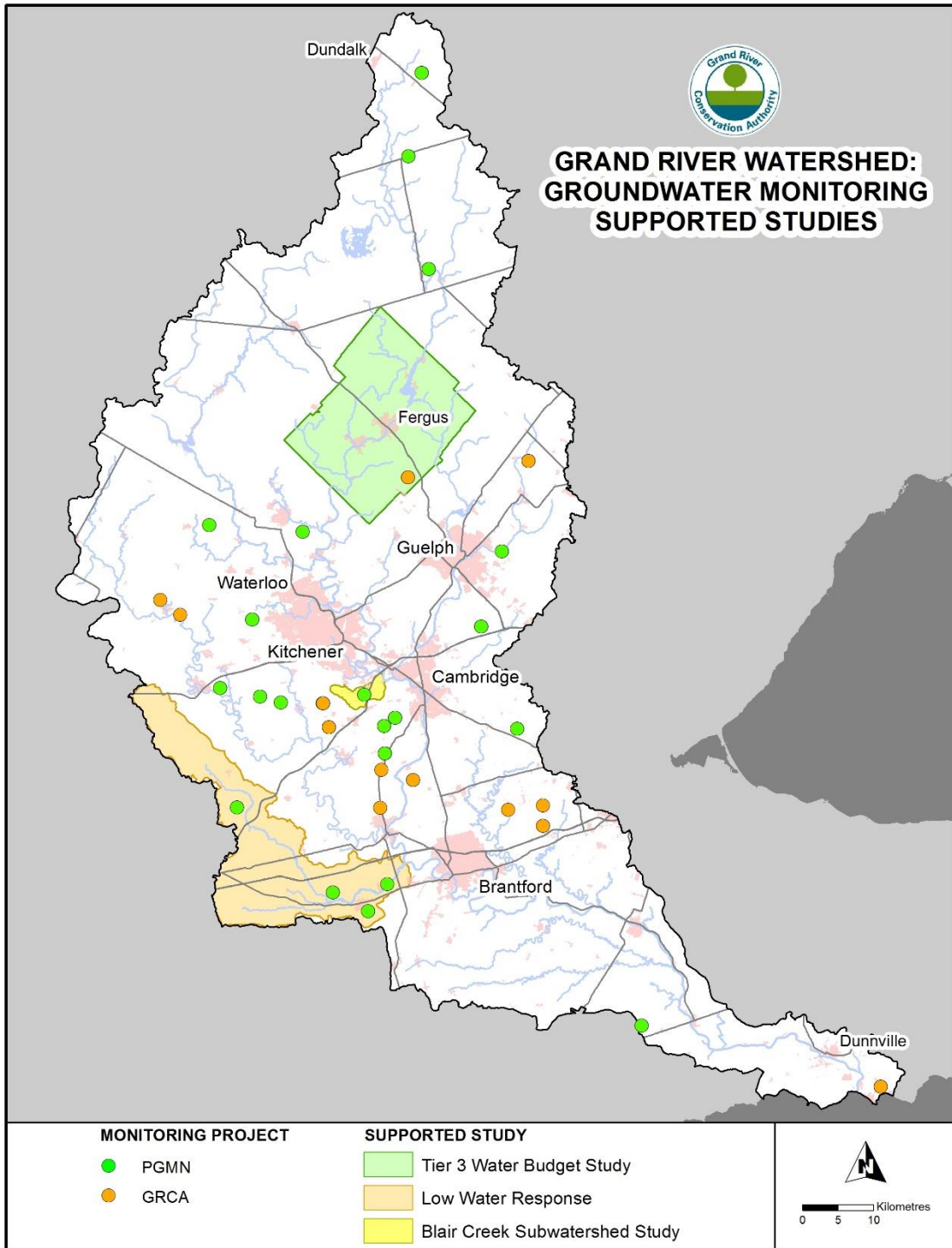
Case Study 2: Township of Centre Wellington Tier 3 Water Budget Study

The Centre Wellington Tier 3 Water Budget Study was a technical assessment of the Township's municipal drinking water system's current and future sustainability in light of municipal growth, development, and climate change. As a part of the study, a numerical groundwater flow model was developed across the study area. The GRCA's long term groundwater monitoring well at Ennotville provided hourly groundwater level data over a 10 year period. These data were incorporated into the Tier 3 groundwater model to help calibrate modelled groundwater levels as the model was developed.

Case Study 3: Low Water Response in Whitemans Creek Subwatershed (Brant County area)

Land use in the southern Whitemans Creek subwatershed is primarily agricultural. Water used for agricultural use and domestic non-permitted use is sourced from an extensive shallow aquifer across this area. During periods of reduced precipitation and drought, groundwater levels can decline fairly rapidly. Several PGMN wells in the Whitemans subwatershed track groundwater levels in the shallow aquifer and are used to inform Low Water Response initiatives in the watershed.

Figure 4: Case study locations in the watershed where PGMN/GRCA monitoring data has been incorporated into the study.



Grand River Conservation Authority

Report number: GM-05-21-40
Date: May 28 2021
To: Members of the Grand River Conservation Authority
Subject: Current Watershed Conditions as of May 19, 2021

Recommendation:

THAT Report Number GM-05-21-40 – Current Watershed Conditions as of May 19, 2021 be received as information.

Summary:

Conditions continue to be dry across the watershed with three month precipitation totals well below the long term average. April was warm, while May started with cold temperatures over the first two weeks before increasing to seasonal and even above seasonal temperatures later in the month.

The large reservoirs are below their normal operating levels for this time of the year due to the drier than normal spring and are being used to augment flows in the rivers downstream to maintain low flow targets. Up to 60% of the water in the Grand River through Kitchener is from water stored in the reservoirs. Other watercourses in the watershed are nearing summer low flow conditions.

Lake Erie continues to be high, but is well below the levels at this time last year. Groundwater levels are below average in some parts of the watershed due to reduced recharge over the winter and early spring. The seasonal forecast from Environment Canada is for near normal temperatures and above normal precipitation, while the Ministry of Natural Resources and Forestry weather forecasters are predicting a fairly warm and possibly dry summer.

Report:

Precipitation

Dry conditions have persisted across much of the watershed since the start of the year. April was a dry month at many climate stations with the watershed wide average monthly precipitation approximately 90% of normal. The wettest area was Brantford, where 50mm of rain was recorded over a 3 day period in the first half of the month. The lowest rainfall occurred in the area around Woolwich and Shand Dams where only 70% of the long term average precipitation was recorded during the month.

The first half of May was even drier than April with under half the normal rainfall recorded during the first 19 days. May rainfall has been sparse and light with no long soaking rains. Not including May, the 3 month total rainfall is about 85% of normal. When May is included in the calculation the 3 month total rainfall is about 70% of normal.

Table 1 includes monthly and recent precipitation trends for select watershed climate stations. Monthly precipitation at the Luther Dam, Shand Dam and Shades Mill climate station from 2017 to 2021 is shown in **Figure 1**.

Table 1: Precipitation Averages at Watershed Climate Stations

Station	Monthly Precipitation		Percentage of Long Term Average					
	19-May (mm)	Long Term Average (mm)	Current Half Month	Last Full Month	Last 3 Full Months	Last 6 Full Months	Last 12 Full Months	Last 15 Full Months
Shand	10.8	81.0	27%	71%	80%	100%	101%	102%
Conestogo	12.8	89.5	29%	85%	75%	91%	92%	94%
Guelph	14.4	79.3	36%	105%	94%	104%	109%	109%
Luther	25.0	88.6	56%	87%	94%	112%	106%	107%
Woolwich	8.8	67.9	26%	69%	74%	95%	90%	97%
Laurel	5.2	82.2	13%	99%	87%	91%	91%	100%
Shades	14.2	80.0	36%	82%	88%	88%	98%	104%
Brantford	6.8	74.1	18%	122%	98%	96%	104%	108%

Air Temperatures

April continued the warm trend seen in March. The average monthly temperature in April was approximately 1.5 degrees above the long term average. There was some unseasonably warm temperatures in April with approximately 4 days with temperatures reaching the low twenties.

By contrast, the first half of May was cold. At the Shand Dam climate station the average temperature over the first 2 weeks of May was approximately 3.7 degrees below normal. Frost was recorded in many parts of the watershed up to the middle of the month. Warm weather returned over the last few days with daytime high temperatures again back into the mid-twenties.

Figure 2 presents recent mean monthly air temperature departures from the long-term average recorded at Shand Dam.

Lake Erie Water Levels

During April the average lake level was approximately 0.42m above the long-term average, which was approximately 0.44m below the same month in 2020. In the first half of March, the average lake level was approximately 174.65m which is about 0.35m above the long-term average.

The long range forecast for Lake Erie is for the lake level to increase slightly over the next months before dropping over the summer. Forecast lake levels for 2021 are expected to stay below levels over the same period last year and may start to trend towards the long term average.

Figure 3 presents current and forecast Lake Erie level from the Canadian Hydrographic Service.

Reservoir Conditions

The large reservoirs are below their normal operating levels for this time of the year. Normal operating levels for this time of year would trend along the upper rule curve. The Luther and Conestogo reservoirs are trending towards the lower end of their seasonal range indicative of a drought condition, while the Shand and Guelph reservoirs are closer to the middle or upper part of their seasonal range. The much lower than normal rainfall over the spring and during the spring snowmelt has resulted in lower than normal operating levels at the large reservoirs.

Discharges from the large reservoirs are being used to augment flows in the rivers downstream of the reservoirs. Augmentation has increased over the last week to ensure downstream low flow targets are being met. As of May 18th, approximately 60% of the

water in the Grand River through Kitchener and 25% of the water in the Grand River through Brantford was from water stored in the reservoirs. On the Speed River approximately 24% of the water below Guelph is from water stored in the reservoirs. Many of the watercourses throughout the watershed are nearing summer low flow conditions.

Reservoir levels are shown in **Figures 4 and 5** for the four large reservoirs.

Groundwater

Groundwater levels in Provincial Groundwater Monitoring Network and GRCA monitoring wells across the watershed were analyzed up to the end of March and are shown in **Figure 6**.

Groundwater levels for March are within or less than the normal range when compared to the long term average for this time of the year. This is in contrast to the very high groundwater levels seen in March of 2020. The lower groundwater levels reflect the reduced amount of precipitation throughout this past winter and early spring.

Long Range Outlook

The three-month forecast for May through July from Environment Canada is for near normal temperatures and above normal precipitation.

The Ministry of Natural Resources and Forestry is predicting a warm and wet June followed by a warm and dry July and then an average August. Conditions could be similar to 2012, which was considered a very dry year in the Grand River watershed.

Flood Preparedness

Conditions are being monitored closely. Drier than normal conditions require careful management of the reservoirs. Staff continue to hold weekly meetings as part of overall succession planning initiatives, dam operations and flood emergency preparedness. Staff will be meeting with Region of Waterloo emergency management staff to provide input to their update of the Region of Waterloo municipal hazard identification and risk assessment (HIRA). Wellington County staff have also asked for input for updates to their HIRA. Staff will be delivering a presentation to the Conestogo Reservoir Cottage Association to explain the reservoir operating policy and explain factors affecting reservoir water quality.

Financial implications:

Not applicable

Other department considerations:

Not applicable

Prepared by:

Stephanie Shifflett, P.Eng.
Water Resources Engineer

Approved by:

Dwight Boyd, P.Eng.
Director of Engineering

Figure 1: Precipitation at Luther Dam, Shand Dam and Shades Mill Dam 2017 to May 19, 2021

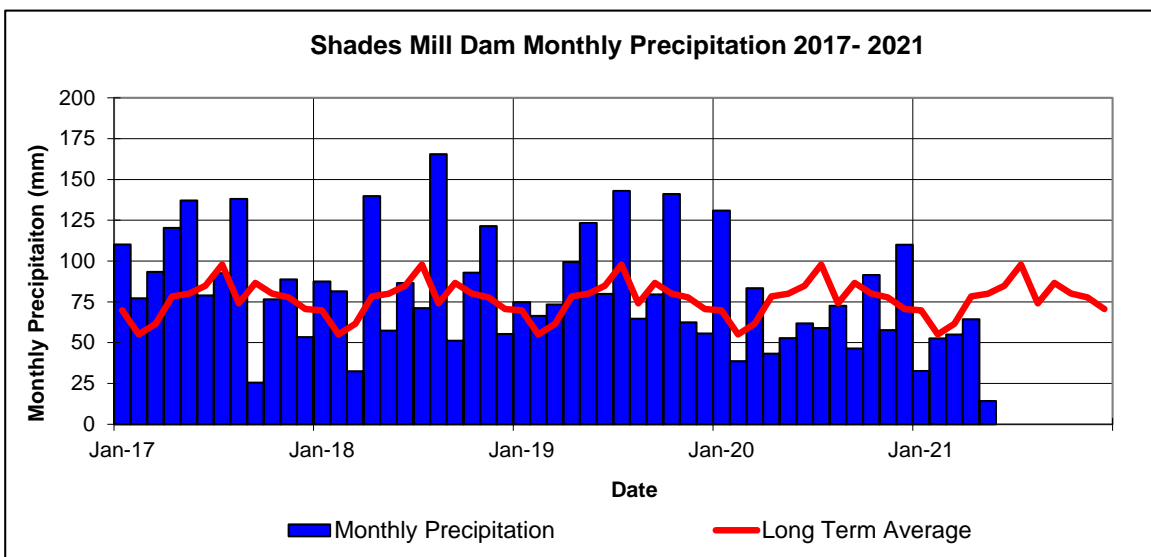
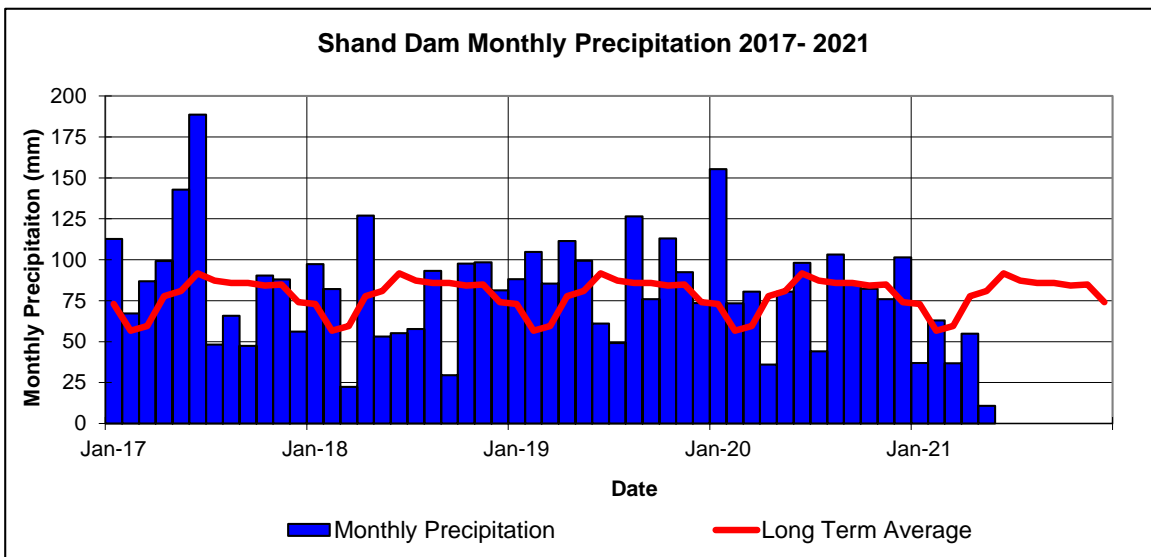
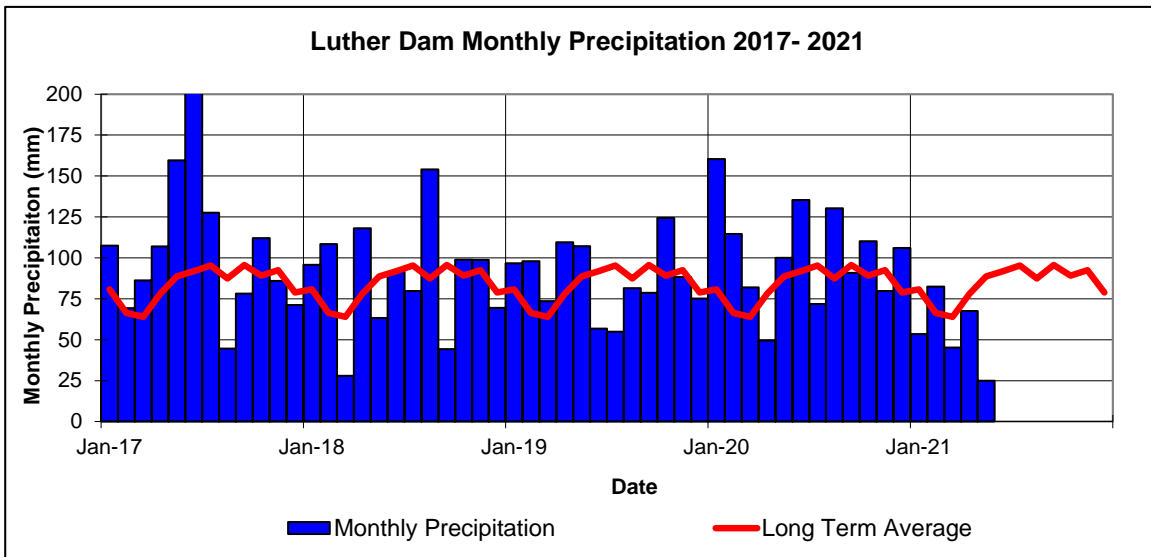


Figure 2: Departures from Average Air Temperatures at Shand Dam

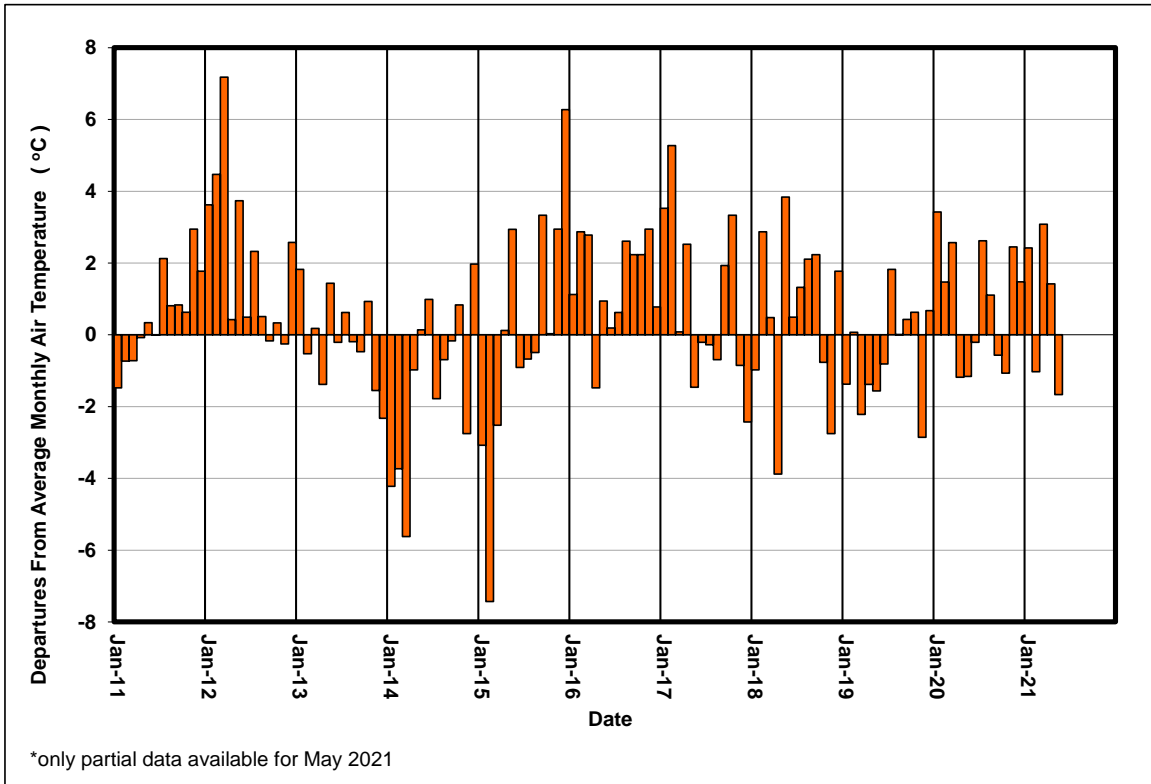


Figure 3: Forecasted Lake Erie Levels

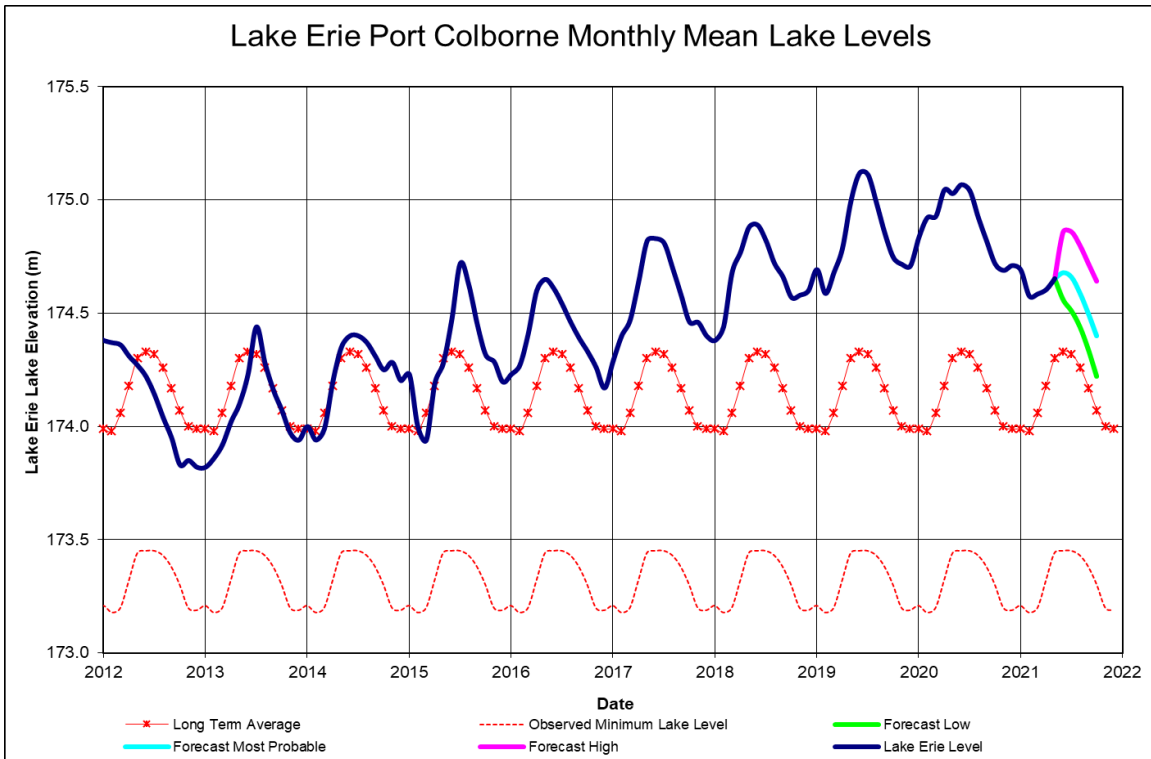


Figure 4: Shand and Conestogo Reservoir Elevation Plots

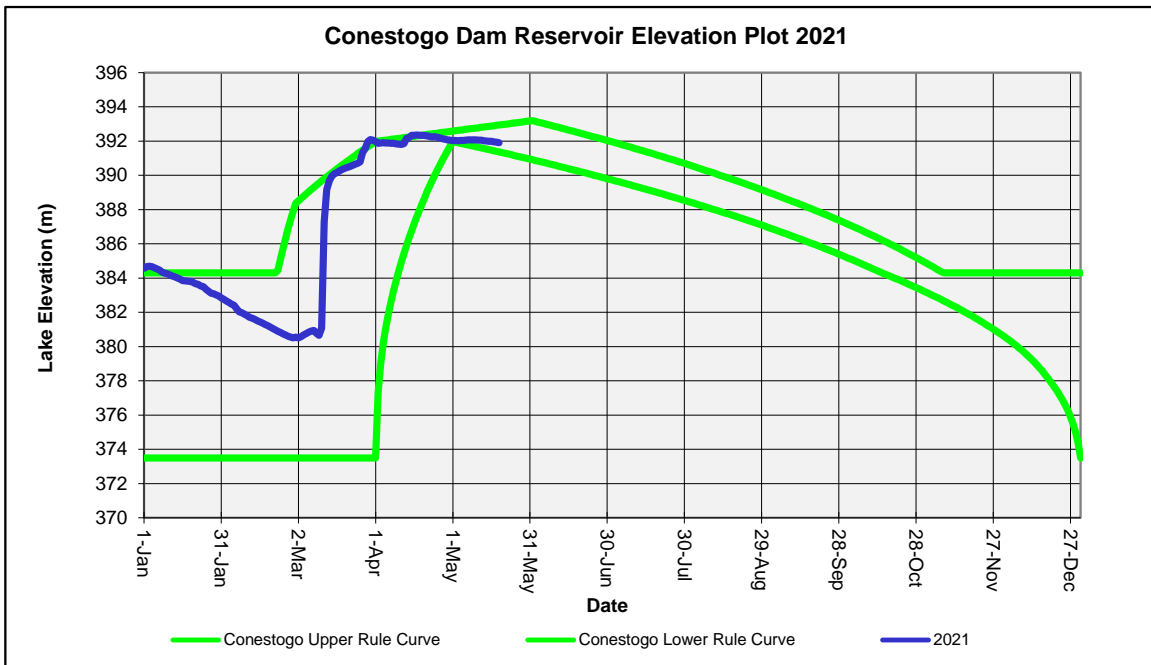
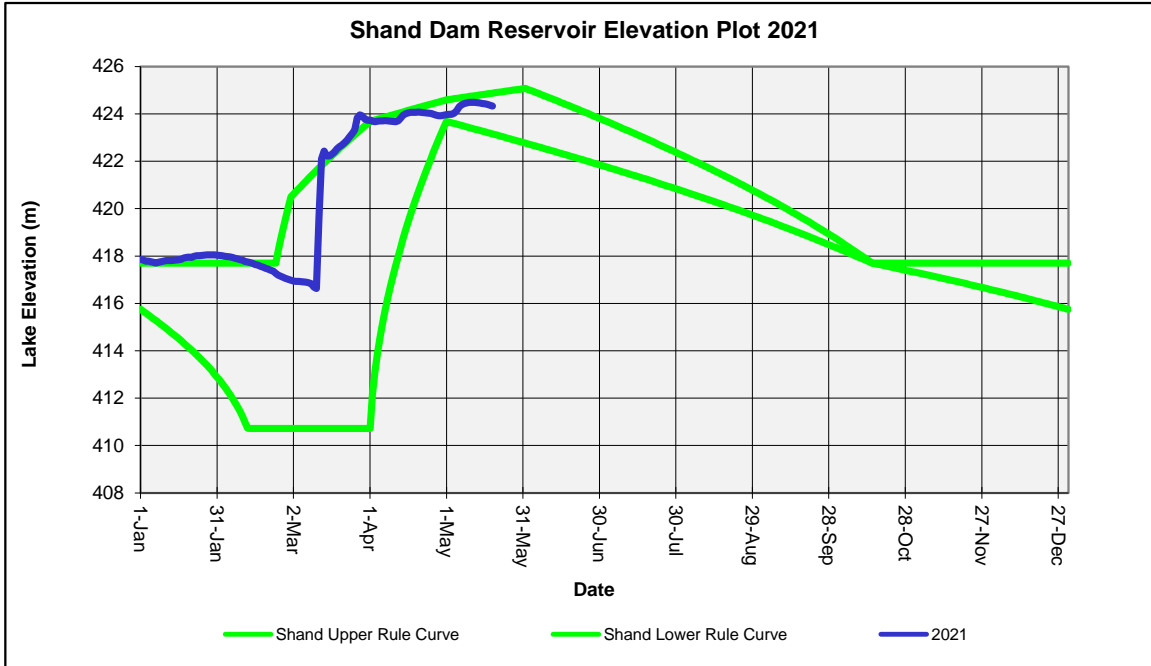
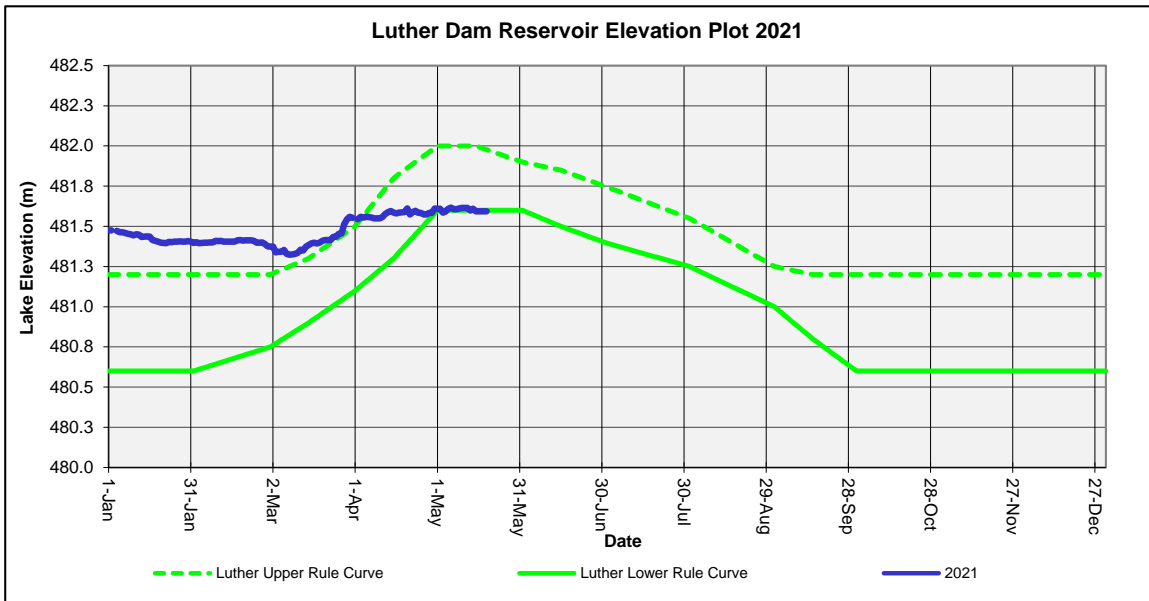
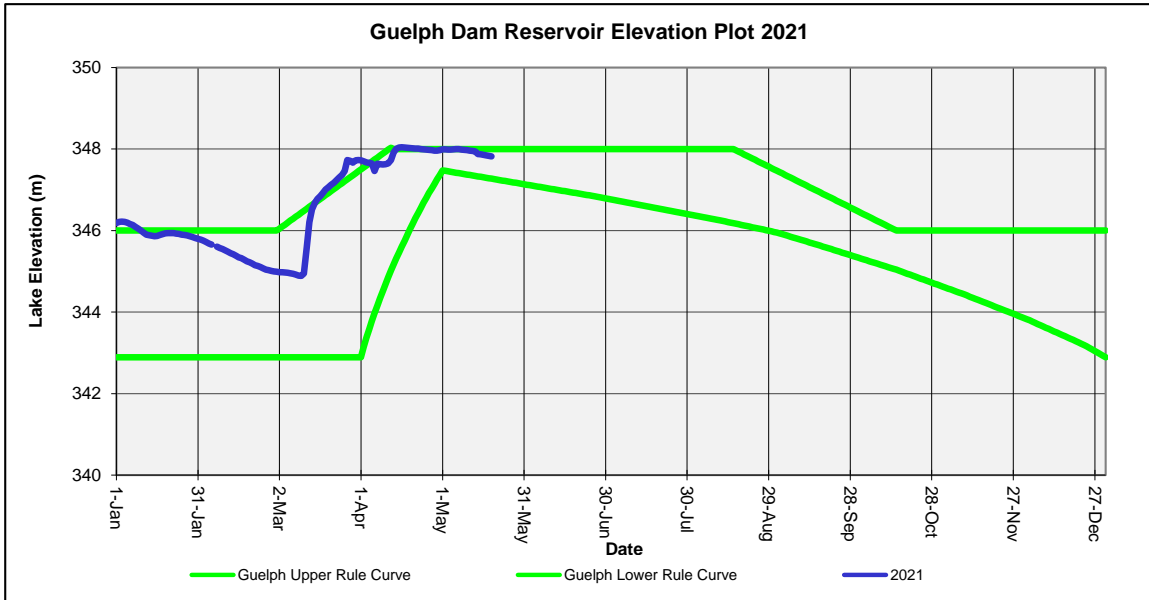


Figure 5: Guelph and Luther Reservoir Elevation Plots



Luther Dam Operating Curves

Luther Dam primarily provides a flow augmentation function to the upper Grand River and to Shand Dam. While it does provide some benefits from a flood control perspective, these benefits are limited due to the small drainage area regulated by Luther Dam.

The buffers between March 1st and September 30th define the operating range to meet downstream low flow targets. The lower buffer defines the lowest operating range for flow augmentation before reducing downstream flow augmentation targets. The earlier winter (January 1st to March 1st) and late fall (October 1st to December 31st) upper buffer curve is defined from ecologic considerations from the Luther Marsh Master Plan.

Figure 6: Map of Groundwater Levels as of March 2021

