



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

Friday, May 25, 2018

9:30 a.m.

Auditorium

Grand River Conservation Authority

400 Clyde Road, Box 729

Cambridge, ON N1R 5W6

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**Pages**

1. **Call to Order**
2. **Roll Call and Certification of Quorum – 13 Members constitute a quorum (1/2 of Members appointed by participating Municipalities)**
3. **Chair's Remarks**
4. **Review of Agenda**  

THAT the agenda for the General Membership Meeting of May 25, 2018, be approved as circulated.
5. **Declarations of Pecuniary Interest**
6. **Minutes of the Previous Meetings**  

THAT the minutes of the General Membership Meeting of April 27, 2018, be approved as circulated.
7. **Business Arising from Previous Minutes**
8. **Hearing of Delegations**
9. **Presentations**
10. **Correspondence**  

THAT Correspondence from the Township of Amaranth regarding a request for financial support be received for information.

a.	Township of Amaranth - Request for Financial Support	11
<b>11.</b>	<b>1st and 2nd Reading of By-Laws</b>	
<b>12.</b>	<b>Reports:</b>	
a.	GM-05-18-58 - Chief Administrative Officer's Report	14
	THAT Report Number GM-05-18-58 - Chief Administrative Officer's Report, be received for information.	
b.	GM-05-18-53 - Cash and Investment Status	16
	THAT Report Number GM-05-18-53 Cash and Investment Status – April 2018 be received for information.	
c.	GM-05-18-54 - Financial Summary	18
	THAT the Financial Summary for the period ending April 30, 2018 be approved.	
d.	GM-05-18-57 - Environmental Assessments	21
	THAT Report Number GM-05-18-57 - Environmental Assessments be received for information.	
e.	GM-05-18-56 - Current Watershed Conditions	23
	That Report Number GM-05-18-56 – Current Watershed Conditions as of May 16, 2018 be received for information.	
f.	GM-05-18-55 - Update on Grand River Watershed-wide Wastewater Optimization Program	30
	THAT Report Number GM-05-18-55 – Update on Grand River Watershed-wide Wastewater Optimization Program be received for information.	
g.	Staff Presentation - Water Management Plan	
h.	Staff Presentation - Conservation Services Outreach StoryMap	
<b>13.</b>	<b>Committee of the Whole</b>	
<b>14.</b>	<b>General Business</b>	
<b>15.</b>	<b>3rd Reading of By-Laws</b>	
<b>16.</b>	<b>Other Business</b>	

**17. Closed Meeting**

THAT the minutes of the closed session of April 27, 2018, be approved as circulated.

- a. Minutes of the previous closed session

**18. Next Meetings**

**19. Adjourn**

THAT the General Membership Meeting of May 25, 2018, be adjourned.

**20. Grand River Source Protection Authority Meeting (if required)**

**Regrets only to:**

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

**BEN RYZEBOL, Director of Public Works**  
PUBLIC WORKS - TELEPHONE: (519) 941-1065  
FAX: (519) 941-1802  
email: bryzebol@amaranth.ca



**SUSAN M. STONE, C.A.O./Clerk-Treasurer**  
TELEPHONE: (519) 941-1007  
FAX: (519) 941-1802  
email: suestone@amaranth-eastgary.ca

374028 6<sup>TH</sup> LINE, AMARANTH, ONTARIO  
L9W 0M6

May 14, 2018

Grand River Conservation Authority Board  
Helen Jowett, Chair  
400 Clyde Road  
Box 729  
Cambridge ON N1R 5W6

Dear Ms. Jowett,

**Re: 10<sup>th</sup> Line of Amaranth Guide Rails – Request for Financial Support**

At the regular meeting of Council held May 2, 2018, the following resolution was carried:

**Moved by J. Aultman – Seconded by G. Little**

**Be it Resolved That:**

Council do hereby request that Grand River Conservation Authority partner financially with the Township of Amaranth for the installation of guide rails on the 10<sup>th</sup> Line of Amaranth which is fully located in the Grand River Conservation Authority regulated area, as per the report dated April 6, 2018 from R.J. Burnside and Associates Limited;

AND FURTHER THAT this request be forwarded to the Chair of the Grand River Conservation Authority Board, and copied to Joe Farwell and Guy Guardhouse, along with a copy of the report.

We look forward to hearing from you, should you require anything further please do not hesitate to contact this office.

Yours truly,

Susan M. Stone  
CAO-Clerk-Treasurer  
Township of Amaranth

Cc: Joe Farwell  
Guy Guardhouse



April 9, 2018

**Via: Email**

Mrs. Sue Stone  
Clerk/Treasurer  
Township of Amaranth  
374026 6th Line  
Amaranth ON L9W 0M6

Dear Mrs. Stone:

**Re: Guide Rail Request, 10th Line  
Project No.: 300042453.0000**

At its meeting of March 7, 2018, Council received a petition to request the installation of "guardrail" at the 10th Line near Waldemar. In response a committee was formed consisting of the CAO Clerk-Treasurer, Director of Public Works, Township Engineers, GRCA and the OPP with a mandate to review the request for guide rails and to provide a report to Council. This letter follows the committee meeting that was held on March 20, 2018 and provides the report to Council as requested.

Guidelines for the design and installation of guide rail are found in the Roadside Design Manual, Ontario Ministry of Transportation, December 2017. This document references normal water levels having a depth of 1 m or more, but does not specifically consider guide rail applications for flooding caused by snow melt or rainfall. Presumably those infrequent floods are dealt with using road closures. In fact, this area of the 10th Line is shown to be deep within the floodplain such that guide rails would be completely under water in a major storm event.

Leaving aside flooding conditions, the Roadside Design Manual suggests guide rails in situations where there are steep side slopes are in proximity to the travelled road surface. We have conducted site surveys on the 10th line and concluded that guiderail would be appropriately constructed starting at the Station Street bridge and for a distance northward of approximately 195 m (Location One). Continuing further north, there could be a gap of approximately 118 m at which point guide rail would resume and continue for an additional 192 m (Location 2).

Should there be a decision to proceed with guiderail installation, we suggest the use of the following specifications:

Location One:	OPSD 912.430	Connection to Station Street Bridge
	OPSD 912.315	Curved Transition System (to be reviewed further due to OPSD revisions)
	OPSD 912.186	Type M20 Steel Beam Guiderail
	OPSD 922.186	End Treatment (MASH Sequential Kinking Terminal System)
Location Two	OPSD 922.186	End Treatment (at each end)
	OPSD 912.186	Type M20 Steel Beam Guiderail
	OPSD 922.186	End Treatment (same MASH system at each end)

Note that Type M20 Steel Beam Guiderail is being recommended because of its application on steep slopes and its additional depth of post embedment.

The cost of this guiderail is estimated at \$75,000. Please let us know if anything further is required.

Yours truly,

**R.J. Burnside & Associates Limited**



Gord Feniak, P.Eng.  
GF:sgd

cc: Fred Natolochny, GRCA (Via: Email)  
P.C Paul Nancekivell, OPP (Via: Email)  
Ben Ryzebol, Township of Amaranth (Via: Email)

Guide Rail Request 10th Line (002)  
27/04/2018 12:23 PM

# Grand River Conservation Authority

**Report number:** GM-05-18-58  
**Date:** May 25, 2018  
**To:** Members of the Grand River Conservation Authority  
**Subject:** Chief Administration Officer's Report

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## **Recommendation:**

THAT Report Number GM-05-58 - Chief Administration Officer's Report be received for information.

## **Report:**

This report provides a brief overview of current activities. It covers programs and activities that are not included in monthly reports.

1. Floodplain Mapping Project: In August 2017 the GRCA membership approved a report authorizing staff to file a funding application to the National Disaster Mitigation Program (NDMP) to update floodplain mapping in the Grand River Watershed, and to draw the required matching funds totaling \$380,300 from land sale reserves. On May 1, 2018 we were notified that the funding application was approved in the amount of \$380,284 over two years. The funding supports a two year project from April 2018 to March 31st, 2020. This project will include: the acquisition of between-the-banks LIDAR for the main Grand River from Lake Erie to Dundalk, the Conestogo River downstream of Conestogo Dam, and the Speed River downstream of Guelph Dam, and updates to the hydrologic modeling and floodplain mapping in the Upper Grand River from Dundalk to the 10th Line Belwood.
2. Tenting on GRCA property: This spring there has been an increase in unauthorized tenting on GRCA property in the City of Cambridge. In addition there have been a number of incidents of discarded needles on riverfront land. The City is tracking the "tent cities" to ensure they are aware of vulnerable populations in the event of an emergency. We are working with Waterloo Regional Police when evictions are required, and with city staff to clean up sites. We have developed a training program for staff who are likely to encounter biohazardous materials (like discarded needles).
3. Hazard Tree Program - The Ministry of Natural Resources and Forestry (MNRF) has approved a request to use land sale reserves to augment the hazard tree management budget. This additional money is necessary to address the risks raised by tree mortality caused by the emerald ash borer. It is expected that peak tree mortality will occur in the central portion of the watershed over the next three years. The MNRF approval will allow

\$1.8 million to be applied to the mitigation of these risks between 2018 and 2020. GRCA staff will focus on increased tree risk assessment and contractor supervision.

4. Voluntary Carbon Offset - The Government of Ontario is developing a Voluntary Carbon Market in which they will be the principal purchaser of carbon offsets. A decision to proceed was posted on the Environmental Registry (EBR) in April. For participation in the voluntary market “desirability criteria” will include both quantifiable greenhouse gas reductions as well as environmental or community co-benefits. The government is planning a procurement process to begin in Fall 2018. Projects from 4 streams will be considered: green infrastructure, green tech, agroforestry and natural heritage. Forestry and reforestation is not currently being included as the government is waiting to see whether it will be captured through the mandatory cap and trade market. Staff will continue to monitor the Provincial program initiative, and identify any opportunities to seek funding for our programs.
5. Staff Presentations – With fewer reports on the agenda, this month’s meeting includes presentations on the Water Management Plan update, and the Conservation Services Outreach StoryMap.

**Submitted by:**

Joe Farwell, P.Eng.  
Chief Administrative Officer



# Grand River Conservation Authority

**Report number:** GM-05-18-53

**Date:** May 25, 2018

**To:** Members of the Grand River Conservation Authority

**Subject:** Cash and Investment Status – April 2018

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## **Recommendation:**

THAT Report Number GM-05-18-53 Cash and Investment Status – April 2018 be received for information.

## **Summary:**

The cash position including Notes Receivable of the Grand River Conservation Authority as at April 30, 2018 was \$27,590,034 with outstanding cheques written in the amount of \$67,967.

## **Report:**

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, 2018**

<b>Date Invested</b>	<b>Location</b>	<b>Type</b>	<b>Amount</b>	<b>Rate</b>	<b>Maturity</b>	<b>2018</b>
	C.I.B.C.	Current Account	3,032,532	1.8%	Below Average Prime or 1.65%	
	Wood Gundy	Current Account	29,478	0.20%		
	C.I.B.C.	Property Account	16,931	1.8%	Below Average Prime or 1.65%	
	C.I.B.C.	SPP Account	160,235	1.8%	Below Average Prime or 1.65%	
	C.I.B.C.	U.S.	68			
	C.I.B.C.	PayPal Account	14,001	1.8%	Below Average Prime or 1.65%	
	C.I.B.C.	Call Centre	26,688	1.8%	Below Average Prime or 1.65%	
	Royal Bank	Conestogo	3,529			
	Royal Bank	Brant	26,721			
	Royal Bank	Rockwood	30,006			
	Royal Bank	Luther	4,345			
			<b>3,344,534</b>			
September 9, 2009	CIBC Renaissance	Account	2,605,880	1.10%		21,597
October 1, 2014	CIBC Trust Savings	Account	2,216,909	1.10%		18,373
July 15, 2016	One Investment Savings	Account	4,088,665	1.915%		58,992
December 8, 2014	Laurentian Bank	Bond	1,578,000	2.81%	June 13, 2019	37,241
January 28, 2015	CIBC	Bond	726,046	1.80%	May 15, 2019	13,069
September 3, 2015	CIBC	Bond	2,000,000	2.25%	September 3, 2025	37,356
October 14, 2015	Laurentian Bank	Bond	1,996,000	2.50%	January 23, 2020	49,000
March 1, 2016	CIBC	Bond	1,300,000	1.70%	March 1, 2023	19,010
September 16, 2016	CIBC	Bond	1,184,000	1.30%	March 13, 2020	12,356
August 24, 2017	Royal Bank	Bond	1,000,000	2.82%	July 12, 2018	6,893
August 24, 2017	Bank of Montreal	Bond	1,550,000	1.61%	October 28, 2021	21,083
October 2, 2017	CIBC	Bond	2,000,000	1.70%	October 9, 2018	16,345
March 15, 2018	Bank of Nova Scotia	Bond	2,000,000	3.04%	October 18, 2019	35,079
	Total G.R.C.A. Investments		<b>24,245,500</b>			<b>346,393</b>
	G.R.C.A. Funds		27,590,034			
	Outstanding Cheques		<b>67,967</b>			

**Investment By Category and Institution**

	<u>% of Total Portfolio</u>		<u>% of Total Portfolio</u>
Government	0%	Gov't of Canada	0%
		Province of Ontario	0%
Banks	83%	C.I.B.C.	50%
		Bank of Nova Scotia	8%
		Bank of Montreal	6%
		Royal Bank	4%
		Toronto Dominion	0%
		National	0%
		Laurentian	15%
Other	17%	One Investment Program	17%

# Grand River Conservation Authority

**Report number:** GM-05-18-54

**Date:** May 25, 2018

**To:** Members of the Grand River Conservation Authority

**Subject:** Financial Summary for the Period Ending April 30, 2018

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## **Recommendation:**

THAT the Financial Summary for the period ending April 30, 2018 be approved.

## **Summary:**

The Financial Summary includes the 2018 *actual* income and expenditures. The budget approved at the February 23, 2018 General Meeting is included in the *Budget* column. The *Current Forecast* column will indicate an estimate of income and expenditures for the whole year. Any changes between the *Current Forecast* and the *Previous Forecast* will be discussed during the meeting. At this time a surplus of \$NIL at year-end is anticipated.

## **Report:**

The Financial Summary is attached.

## **Financial implications:**

The activity summarized will result in a NIL net result at December 31, 2018.

## **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:**

Sonja Radoja  
Manager Corporate Services

## **Approved by:**

Karen Armstrong  
Secretary-Treasurer/Deputy CAO

**GRAND RIVER CONSERVATION AUTHORITY  
STATEMENT OF OPERATIONS  
FOR THE PERIOD ENDING April 30, 2018**

<b>SCHEDULE</b>		<b>Actual 2017</b>	<b>Budget 2018</b>	<b>Actual YTD</b>	<b>Previous Forecast</b>	<b>Current Forecast</b>	<b>Forecast Change</b>
<b>REVENUE</b>							
<b>Municipal</b>							
General Municipal Levy (Operating)	various	10,025,000	10,302,000	3,434,000	10,302,000	10,302,000	0
General Municipal Levy (Capital)	various	1,050,000	1,050,000	350,000	1,050,000	1,050,000	0
Special Municipal Levy	various	0	150,000	99,411	150,000	150,000	0
Other	various	1,132,936	830,000	1,309,622	830,000	830,000	0
		<b>12,207,936</b>	<b>12,332,000</b>	<b>5,193,033</b>	<b>12,332,000</b>	<b>12,332,000</b>	<b>0</b>
<b>Government Grants</b>							
MNRF Transfer Payments	various	871,073	871,073	0	871,073	871,073	0
Source Protection Program-Provincial	various	1,570,408	1,575,000	464,499	1,575,000	1,575,000	0
Other Provincial	various	933,723	1,432,500	384,779	1,432,500	1,432,500	0
Federal	various	433,700	70,000	520,186	70,000	70,000	0
		<b>3,808,904</b>	<b>3,948,573</b>	<b>1,369,464</b>	<b>3,948,573</b>	<b>3,948,573</b>	<b>0</b>
<b>Self Generated</b>							
User Fees and Sales							
<i>Enquiries and Permits</i>	4	515,729	491,400	203,072	491,400	491,400	0
<i>Plan Input and Review</i>	4	457,368	410,000	153,549	410,000	410,000	0
<i>Nursery and Woodlot Management</i>	5	460,894	465,000	232,874	465,000	465,000	0
<i>Consulting</i>	4	0	0	3,726	0	0	0
<i>Conservation Lands Income</i>	10	53,610	71,000	2,011	71,000	71,000	0
<i>Conservation Areas User Fees</i>	13	8,480,836	8,000,000	488,930	8,000,000	8,000,000	0
<i>Nature Centres and Camps</i>	8	928,125	942,000	189,772	942,000	942,000	0
<i>Merchandising and Sales</i>	8	473	0	726	0	0	0
Property Rentals	11	2,937,919	2,900,700	1,400,094	2,900,700	2,900,700	0
Hydro Generation	12	572,154	470,000	77,067	470,000	470,000	0
Land Sales	10	0	0	0	0	0	0
Grand River Conservation Foundation	various	698,380	399,000	22,092	399,000	399,000	0
Donations	various	72,602	314,000	322,137	314,000	314,000	0
Landowner Contributions	5	200,118	200,000	142,658	200,000	200,000	0
Investment Income	14	442,984	450,000	84,240	450,000	450,000	0
Miscellaneous Income	various	98,391	48,000	14,412	48,000	48,000	0
<b>Total Self-Generated Revenue</b>		<b>15,919,583</b>	<b>15,161,100</b>	<b>3,337,360</b>	<b>15,161,100</b>	<b>15,161,100</b>	<b>0</b>
<b>TOTAL REVENUE</b>		<b>31,936,423</b>	<b>31,441,673</b>	<b>9,899,857</b>	<b>31,441,673</b>	<b>31,441,673</b>	<b>0</b>

**GRAND RIVER CONSERVATION AUTHORITY**  
**STATEMENT OF OPERATIONS**  
**FOR THE PERIOD ENDING April 30, 2018**

SCHEDULE	Actual 2017	Budget 2018	Actual YTD	Previous Forecast	Current Forecast	Forecast Change	
<b>EXPENSES</b>							
<b>OPERATING</b>							
Water Resources Planning & Environment	1	1,994,193	2,221,800	573,651	2,221,800	2,221,800	0
Flood Forecasting and Warning	2	700,905	800,400	173,891	800,400	800,400	0
Water Control Structures	3	1,550,381	1,725,700	341,733	1,725,700	1,725,700	0
Resource Planning	4	1,872,317	1,977,900	499,788	1,977,900	1,977,900	0
Forestry & Conservation Land Property Taxes	5	1,339,953	1,376,500	290,609	1,376,500	1,376,500	0
Conservation Services	6	764,450	861,000	216,973	861,000	861,000	0
Communications & Foundation	7	595,594	714,900	174,159	714,900	714,900	0
Environmental Education	8	1,326,109	1,316,400	316,982	1,316,400	1,316,400	0
Corporate Services	9	2,917,332	3,399,987	860,288	3,399,987	3,399,987	0
Conservation Lands	10	1,758,357	1,947,000	580,587	1,947,000	1,947,000	0
Property Rentals	11	2,178,441	1,595,400	398,992	1,595,400	1,595,400	0
Hydro Production	12	177,078	130,000	45,772	130,000	130,000	0
Conservation Areas	13	6,903,045	7,110,000	667,571	7,110,000	7,110,000	0
Miscellaneous	14	109,038	70,000	16,463	70,000	70,000	0
Information Systems	16	1,100,195	1,136,000	446,105	1,136,000	1,136,000	0
Motor Pool	16	789,383	898,000	243,330	898,000	898,000	0
Less: Internal Charges (IS & MP)	16	(1,889,578)	(2,034,000)	(689,435)	(2,034,000)	(2,034,000)	0
<b>Total OPERATING Expenses</b>		<b>24,187,193</b>	<b>25,246,987</b>	<b>5,157,459</b>	<b>25,246,987</b>	<b>25,246,987</b>	<b>0</b>
<b>CAPITAL</b>							
Water Resources Planning & Environment	1	73,117	110,000	27,219	110,000	110,000	0
Flood Forecasting and Warning	2	204,172	190,000	29,412	190,000	190,000	0
Water Control Structures	3	1,112,074	1,500,000	323,986	1,500,000	1,500,000	0
Nature Centres	8	0	0	0	0	0	0
Conservation Areas	13	859,691	1,820,000	475,331	1,820,000	1,820,000	0
Corporate Services	9	0	0	0	0	0	0
Information Systems	16	227,780	200,000	145,458	200,000	200,000	0
Motor Pool	16	170,756	500,000	40,652	500,000	500,000	0
Less: Internal Charges (IS & MP)	16	(461,383)	(410,000)	(679,074)	(410,000)	(410,000)	0
<b>Total Capital Expenses</b>		<b>2,186,207</b>	<b>3,910,000</b>	<b>1,721,132</b>	<b>3,910,000</b>	<b>3,910,000</b>	<b>0</b>
<b>SPECIAL</b>							
Water Resources Planning & Environment	1	279,571	285,000	78,539	285,000	285,000	0
Flood Forecasting and Warning	2	132,927	850,000	46,877	850,000	850,000	0
Forestry	5	185,284	270,000	36,346	270,000	270,000	0
Conservation Services	6	1,281,536	936,000	312,297	936,000	936,000	0
Communications	7	0	0	0	0	0	0
Environmental Education	8	260,266	0	0	0	0	0
Conservation Land Purchases	10	139,401	0	66,434	0	0	0
Conservation Lands	10	553,129	420,000	69,524	420,000	420,000	0
Property Development	11	0	50,000	0	50,000	50,000	0
Hydro Generation	12	112,472	300,000	13,914	300,000	300,000	0
Miscellaneous	14	28,890	35,000	0	35,000	35,000	0
Source Protection Program	15	1,570,408	1,575,000	503,785	1,575,000	1,575,000	0
<b>Total SPECIAL PROJECTS Expenses</b>		<b>4,543,884</b>	<b>4,721,000</b>	<b>1,127,716</b>	<b>4,721,000</b>	<b>4,721,000</b>	<b>0</b>
<b>Total Expenses</b>		<b>30,917,284</b>	<b>33,877,987</b>	<b>8,006,307</b>	<b>33,877,987</b>	<b>33,877,987</b>	<b>0</b>
<b>Gross Surplus</b>		<b>1,019,139</b>	<b>(2,436,314)</b>	<b>1,893,550</b>	<b>(2,436,314)</b>	<b>(2,436,314)</b>	<b>0</b>
<b>Prior Year Surplus Carryforward</b>		<b>315,832</b>	<b>412,314</b>	<b>315,832</b>	<b>412,314</b>	<b>412,314</b>	<b>0</b>
<b>Net Funding FROM/(TO) Reserves</b>		<b>(922,657)</b>	<b>2,024,000</b>	<b>860,268</b>	<b>2,024,000</b>	<b>2,024,000</b>	<b>0</b>
<b>NET SURPLUS</b>		<b>412,314</b>	<b>0</b>	<b>3,069,650</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Grand River Conservation Authority – Report

**Report number:** GM-05-18-57

**Date:** May 25, 2018

**To:** Members of the Grand River Conservation Authority

**Subject:** Environmental Assessments

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## **Recommendation:**

THAT Report Number GM-05-18-57 Environmental Assessments be received for information.

## **Summary:**

To provide the General Membership of the Grand River Conservation Authority with information on Environmental Assessments being reviewed, a summary report is presented below. The report has been prepared as directed through Motion No. P44-99 (May 18/99) adopted through General Membership Res. No. 55-99 (May 28, 1999).

## **Report:**

Report on Environmental Assessments for May 25, 2018

### A. New Environmental Assessments Received

New: Environmental Assessments received by the Grand River Conservation Authority and currently under review.

#### **1. First Notice – Wellington Road 124 Improvements Class Environmental Assessment, Township of Guelph-Eramosa**

The County of Wellington has initiated a 'Schedule C' Class Environmental Assessment (EA) for the improvement of Wellington Road 124 from Township Road 1 to Fife Road in the Township of Guelph-Eramosa.

The purpose of the Class EA is to address congestion on this stretch of road. The study area contains resource features regulated by the GRCA including watercourses, floodplain and associated allowances.

GRCA staff have responded to the Notice of Commencement indicating an interest in the Class EA study.

### B. Classification of Reviewed Environmental Assessments

Minor: Minimal potential resource impacts that can be mitigated using conventional construction methods.

**Major:** Significant impacts on identified resource features. Alternatives and proposed mitigation will be outlined in detail.

Minor Impacts –

**1. Final Notice- Maple Hill Creek Rehabilitation, City of Waterloo**

The City of Waterloo has completed a Schedule ‘B’ Class Environmental Assessment for the rehabilitation of Maple Hill Creek from the Westvale Park Stormwater Management (SWM) Area to the creek’s confluence with Clair Creek at University Avenue.

The study area contains Maple Hill Creek, floodplain, wetland, and the regulated allowances to these features. The purpose of the study was to examine options for creek channel improvements, including development of a rehabilitation and management plan for the preservation and enhancement of the overall creek system.

There are several preferred solutions for various reaches of the creek. The preferred solution for the Westvale Park SWM area involves outlet modifications to the existing SWM facility. The preferred solution for Reach 2 and Reach 6 is to undertake restoration to areas of identified concern, including repairs to the concrete pipe under Thorndale Drive, catch basin replacement to remediate surface drainage issues, and installation of erosion control measures in areas experiencing bank erosion. The preferred solution for Reaches 3, 4 and 5 is to undertake partial reach restoration, including extension of the Thorndale Drive culvert, removal of existing weir structures, channel reconfiguration (i.e. retaining wall removal), and replacement of a concrete lined channel with a naturalized step-pool/cascade system.

No major impacts to flooding, Maple Hill Creek or the wetland areas are anticipated. Staff will review the detailed design for the creek rehabilitation through the GRCA permit process.

Major Impacts – None for this report

**Financial implications: Not Applicable**

**Other department considerations: Not Applicable**

**Prepared by:**

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**Approved by:**

Nancy Davy  
Director of Resource Management

# Grand River Conservation Authority

**Report number:** GM-05-18-56

**Date:** May 25, 2018

**To:** Members of the Grand River Conservation Authority

**Subject:** Current Watershed Conditions as of May 16, 2018

## **Recommendation:**

That Report Number GM-05-18-56 – Current Watershed Conditions as of May 16, 2018 be received for information.

## **Report:**

### **Precipitation**

Precipitation to date in May has been close to normal in most of the watershed with the exception of the southern part of the watershed which was a bit below normal. Widespread storm systems have delivered most precipitation in May with few instances of high intensity rain events. These types of systems are ideal for recharge, while producing limited runoff.

In contrast, April was a very wet month. Total precipitation was at least one and a half times the normal precipitation throughout the watershed. At the Conestogo climate station it was close to twice the normal precipitation. Precipitation in April was mixed and included ice pellets, snow, rain and freezing rain, while only rain has been recorded in May.

Table 1 includes monthly and recent precipitation trends for select watershed climate stations. Monthly precipitation at the Shand and Shades climate stations from 2014 to 2018 is shown in Figure 1.

Table 1: Precipitation Averages at Watershed Climate Stations

Station	Monthly Precipitation		Percentage of Long Term Average					
	16-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	38.5	81.0	95%	163%	119%	111%	112%	115%
Conestogo	46.6	89.5	104%	182%	139%	113%	121%	121%
Guelph	51.2	79.3	129%	139%	115%	111%	113%	120%
Luther	35.1	88.6	79%	151%	122%	110%	126%	126%
Woolwich	42.8	67.9	126%	163%	123%	119%	106%	120%
Laurel	52.0	82.2	127%	159%	124%	113%	107%	110%
Shades	37.4	80.0	94%	178%	130%	117%	113%	119%
Brantford	25.4	74.1	69%	151%	142%	118%	104%	115%

\*precipitation data was not available for the Brantford Airport station. The value for Brantford in Table 1 is from the Brant Park Climate Station



## **Air Temperatures**

A big shift in temperature occurred from April to May. The average air temperature was around 4 degrees below average in April across the watershed. In contrast, the average air temperature in May to date has been well above normal across the watershed.

At the Shand Dam climate station, the average April temperature was 1.4 degrees, while the average temperature to date in May has been 14.3 degrees. Daytime high temperatures have averaged about 20 degrees, while overnight low temperatures have stayed above freezing throughout most of the watershed.

Figure 2 presents recent mean monthly air temperature departures from the long term average recorded at Shand Dam. Long term average temperatures were updated in January 2018 and cover the period of 1986 to 2016.

## **Lake Erie Conditions**

The level of Lake Erie continues to be above the long term average. The average lake elevation in April was 174.75m, which is approximately 0.57m above the long term average. Lake levels continue to rise in the first part of May. Peak lake levels normally occur in the early summer period.

Forecast water levels into the summer period were available from the Canadian Hydrographic Service. They indicate that the lake will likely reach its peak in May at a very similar to level recorded in June last year. June levels last year were the highest observed since 1998. The high forecast puts the static lake level about half a metre below the level where minor flooding starts. High static lake levels increase the risk of shoreline flooding.

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

## **Flood Operations Centre Activities**

On May 4<sup>th</sup>, a High Lake Level Warning for Lake Erie was issued following a forecast of strong winds that were expected to create a surge along the Lake Erie shoreline. The wind strength was very high during the event, but the duration of strong winds was short resulting in a short surge event compared to the one in April.

## **Reservoir Conditions**

The four large reservoirs are following the upper rule curve their normal operating level for this time of the year. Shand and Guelph reservoirs are slightly above their normal operating level are being lowered gradually. Conestogo and Luther reservoirs are following their normal operating level.

May is a transitional month when operation of the reservoirs gradually switches from the filling period to the flow augmentation period. Flow augmentation is when discharges from the reservoirs are used to sustain flows in the rivers downstream. During this transition period the reservoirs are at their fullest level and have little flood storage available.

Reservoir levels for 2018 are shown in Figures 4 and 5 for Shand Dam, Conestogo Dam, Guelph Dam, and Luther Dam.

## **Long Range Outlook**

Environment Canada's seasonal forecasts are predicting higher than normal temperatures and near normal precipitation for the May to July period.

The Ministry of Natural Resources and Forestry also provided a seasonal forecast into the summer months. Their forecast is for near normal temperatures through the summer, but August may be warmer than normal. Precipitation is predicted to be below normal with each of the summer months a little bit drier than the past year.

## **Flood Preparedness**

Conditions are being monitored closely. Staff continue to hold weekly Senior Operator meetings as part of overall succession planning initiatives and flood emergency preparedness.

Community Emergency Management Co-ordinators (CEMC's) for municipalities in Waterloo Region, Waterloo Region emergency management staff and GRCA staff met at the GRCA on May 15<sup>th</sup>. The CEMC's for Woolwich Township and the City of Cambridge are leading efforts to standardize municipal emergency plan format for Townships in Waterloo Region. Standardization of municipal emergency management plan content will facilitate inner operability during events, share content creation and support mutual aid support during emergencies.

The township of Woolwich continues to develop their municipal flood response plan. GRCA staff provided updates on GRCA tasks related to this plan. These updates were included in a report by the Woolwich Township CEMC to council on May 15<sup>th</sup>. GRCA staff attended council to respond to councillor questions.

Staff participated in the Dufferin County emergency planning exercise held on May 17<sup>th</sup> 2018.

Woolwich Township is hosting a public education night on Monday June 11<sup>th</sup> at the West Montrose camp ground. The meeting will be a drop in format designed to update public about improvements to the flood response plan and create public awareness of the flood hazard in the communities of West Montrose and Conestogo.

A new multi model weather forecast product is being tested by GRCA. The multi model provides hourly rainfall, air temperature, wind speed and wind direction weather forecast information from eight models seven days into the future.

## **Financial implications:**

Not applicable

## **Other department considerations:**

Not applicable

### **Prepared by:**

Stephanie Shifflett  
Water Resources Engineer

### **Approved by:**

Dwight Boyd  
Director of Engineering

Figure 1: Precipitation at Shand Dam and Shades Mill Dam 2014 to present

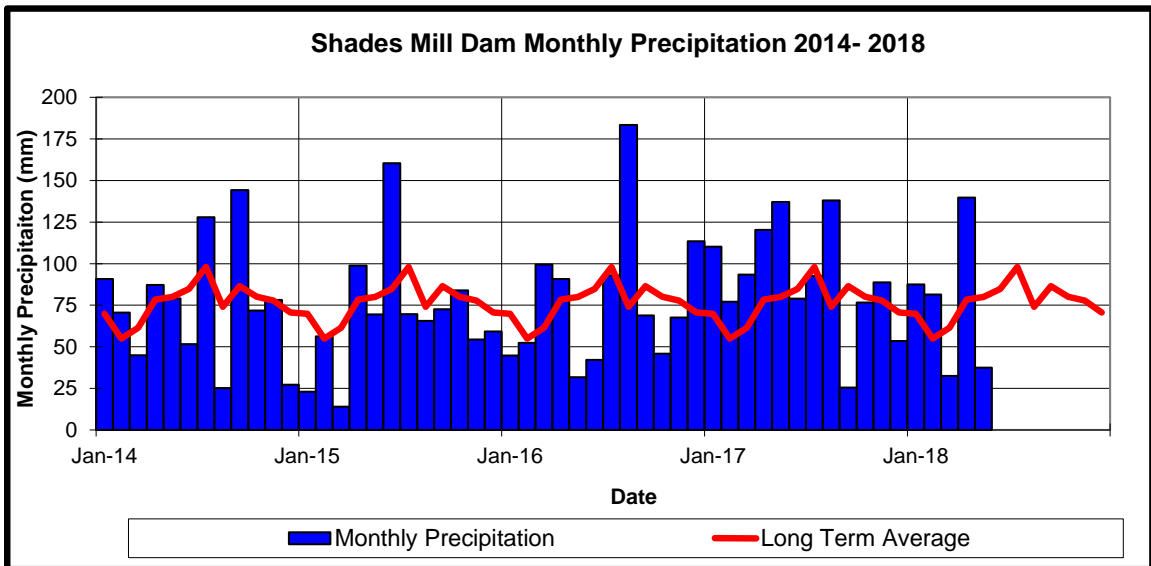
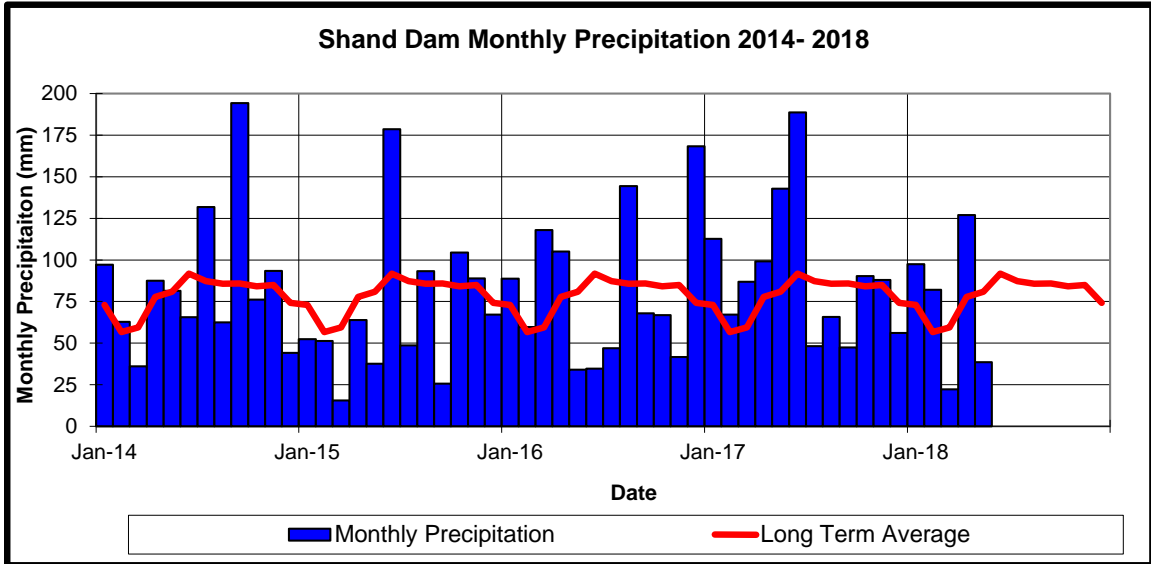


Figure 2: Departures from Average Air Temperatures

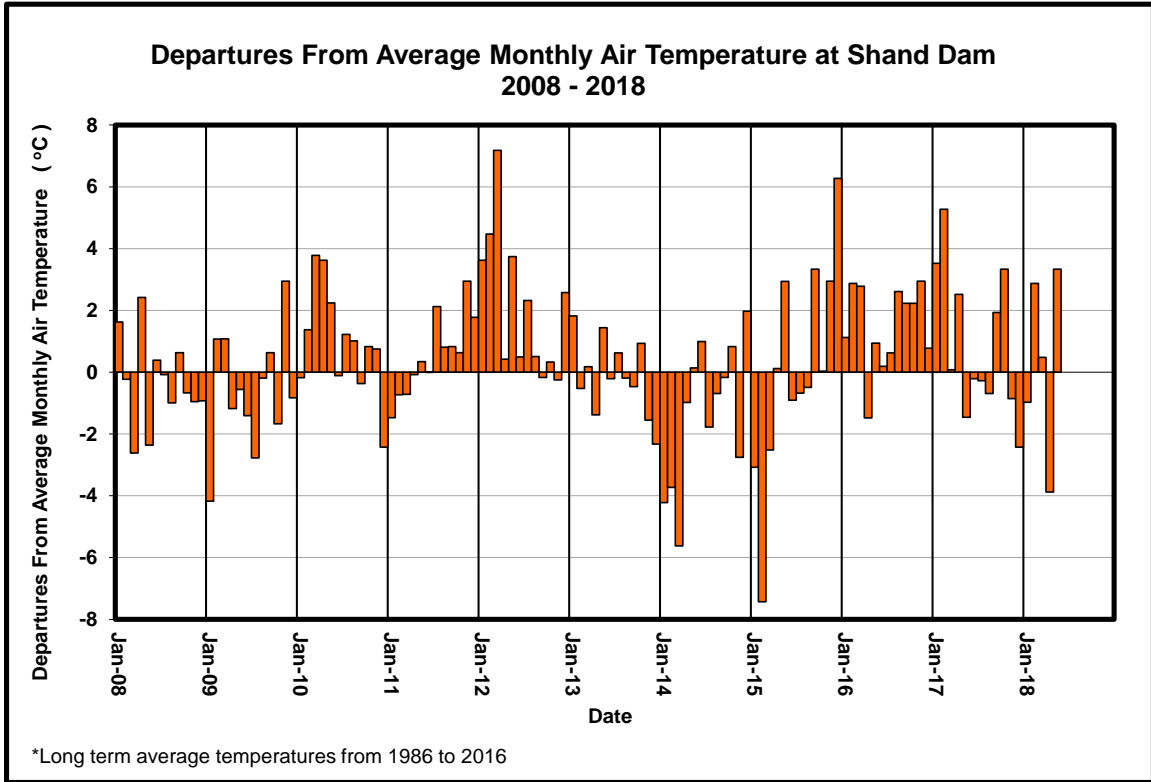


Figure 3: Forecasted Lake Erie Levels

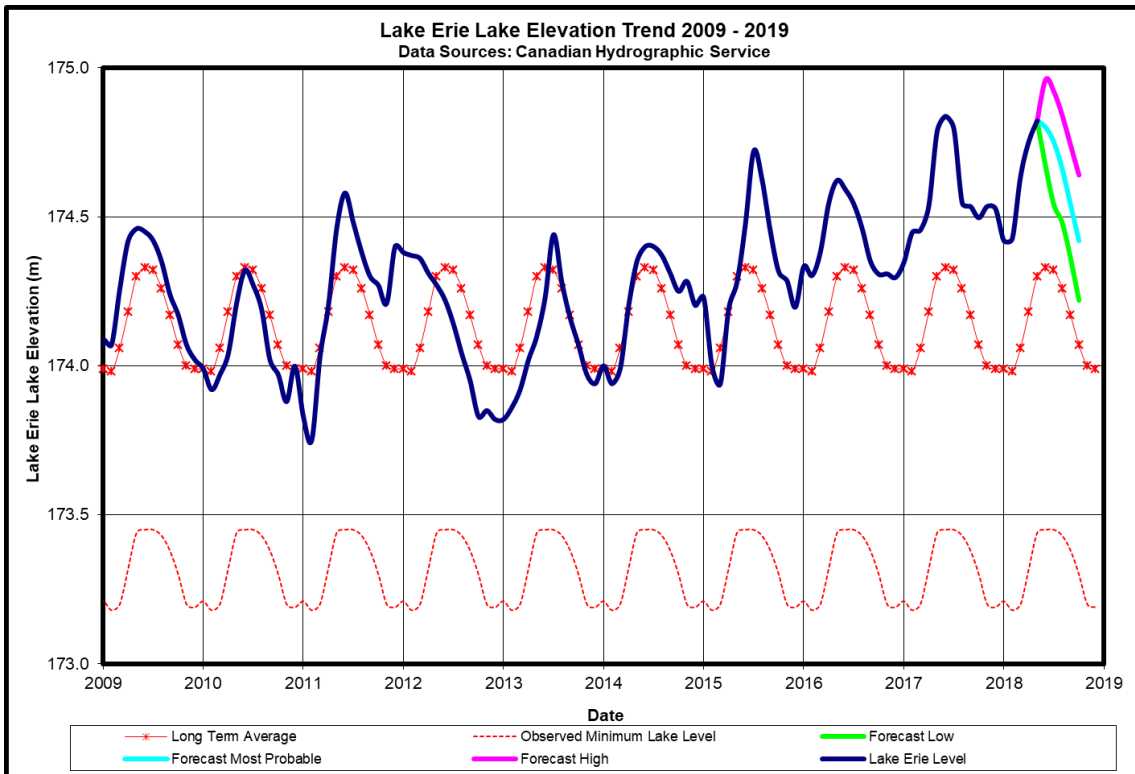


Figure 4: Shand and Conestogo Reservoir Elevation Plots

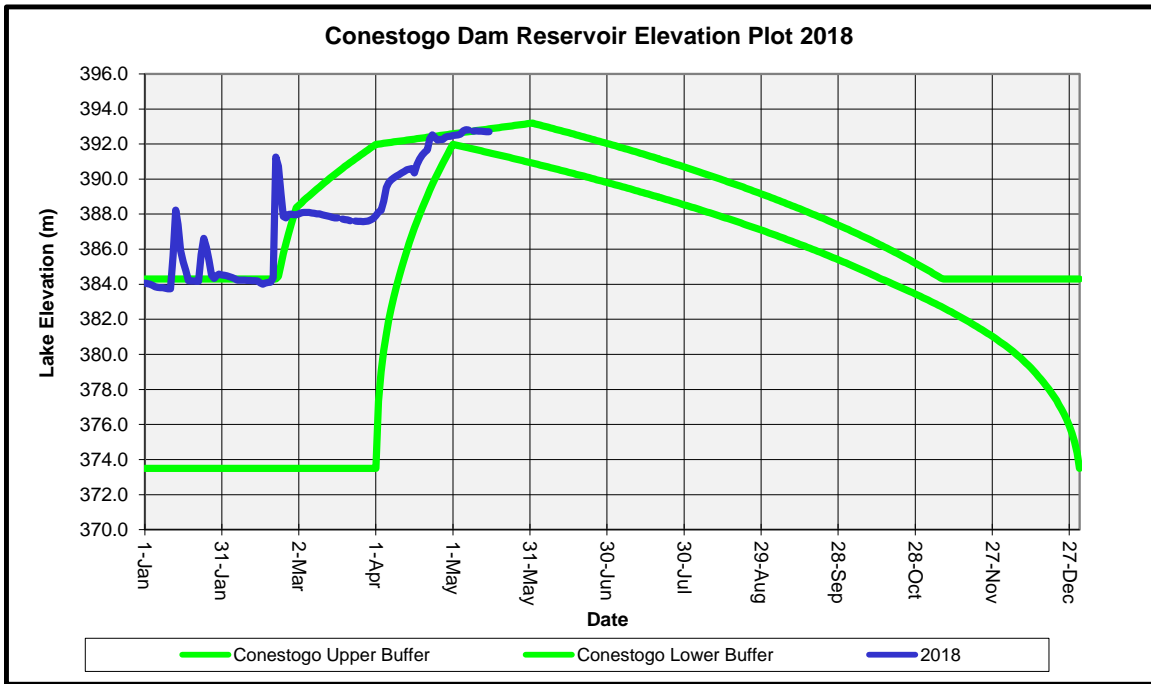
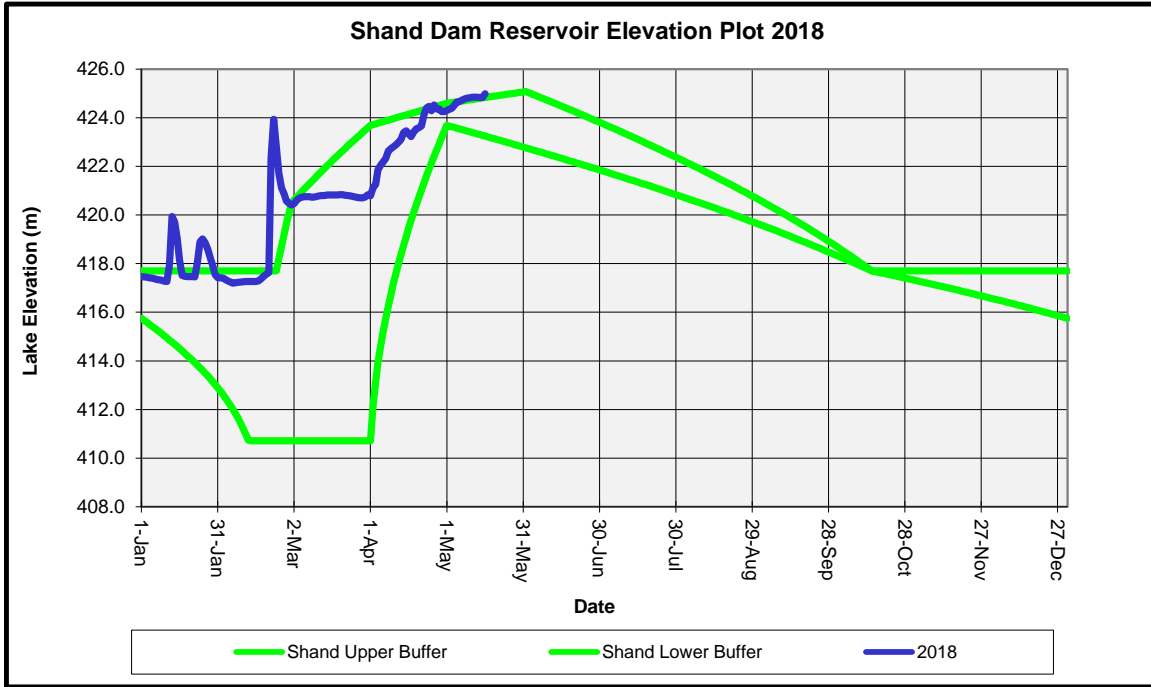
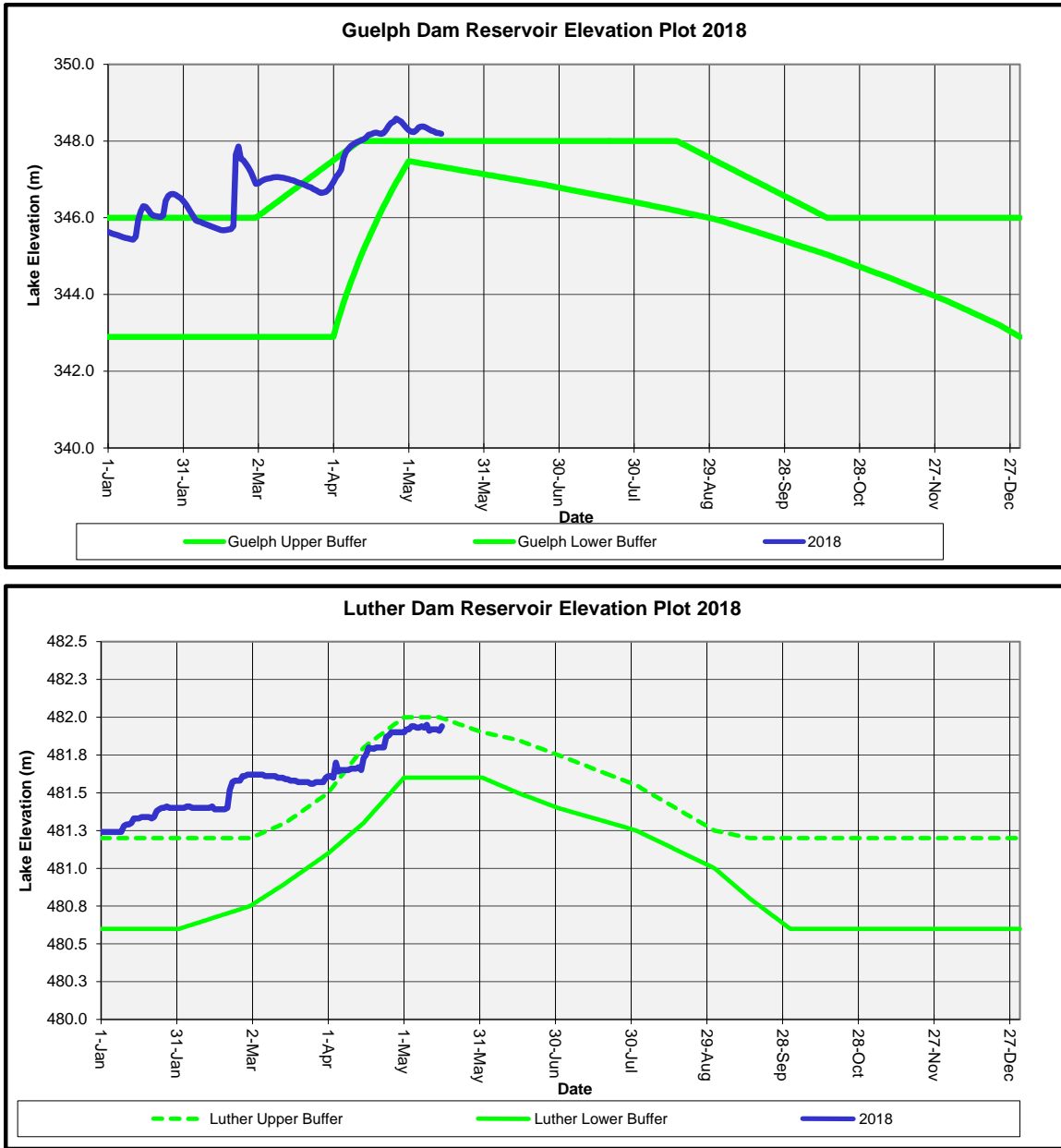


Figure 5: Guelph and Luther Reservoir Elevation Plots



**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 1<sup>st</sup> and September 30<sup>th</sup> 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 1<sup>st</sup> to March 1<sup>st</sup>) and late fall (October 1<sup>st</sup> to December 31<sup>st</sup>) upper buffer curve is defined from ecologic considerations from the Luther Marsh Master Plan.

# Grand River Conservation Authority

**Report number:** GM-05-18-55  
**Date:** May 25, 2018  
**To:** Members of the Grand River Conservation Authority  
**Subject:** Update on Grand River Watershed-wide Wastewater Optimization Program

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## **Recommendation:**

THAT Report Number GM-05-18-55 – Update on Grand River Watershed-wide Wastewater Optimization Program be received for information.

## **Summary:**

The Grand River Watershed-wide Wastewater Optimization Program (WWOP) is a collaborative effort involving watershed municipalities, Grand River Conservation Authority (GRCA), Ministry of Environment and Climate Change (MOECC) and others to encourage voluntary improvements in effluent quality. Better effluent quality has a direct positive impact on receiving water courses in the Grand River Watershed, therefore optimization was recommended in the Water Management Plan as a cost-effective means to improve water quality. Program funding is provided by grants from MOECC and Federation of Canadian Municipalities (FCM). Two recent examples of improved effluent quality are discussed.

## **Report:**

The WWOP was initiated in 2010 by GRCA as a pilot project to promote best practices for wastewater treatment plant operations. Working together with local municipal partners to optimize wastewater treatment plants (WWTPs) was an early action and key recommendation of the Water Management Plan to improve water quality. The WWOP has resulted in the creation of a community of practice composed of the GRCA, MOECC, watershed municipalities, First Nations and the Ontario Clean Water Agency (OCWA).

The vision of the Watershed-wide Wastewater Optimization Program (WWOP) is for data-based decision making to be used at all levels to fully use the capacity of existing infrastructure and people. By doing so, municipalities will be able to meet the goal of producing high quality effluent, economically over the long term and make measurable improvements in water quality of Grand River and Lake Erie.

The MOECC has provided financial support to the WWOP for many years and there is a grant funding agreement currently in place to provide \$304,000 to maintain the program until February 2022. Additionally, GRCA has recently received a Climate Adaptation Partner Grant from the Federation of Canadian Municipalities (FCM) through the Municipalities for Climate Innovation program. FCM funding covers up to 80% of eligible staff and consulting costs up to a maximum of \$250,000 from January 2018 until December 2019. Centre Wellington, Region of Waterloo, Brant County, Haldimand County and City of Brantford were partners in this grant application and GRCA staff will be working with them to incorporate climate change adaptation strategies into the

WWOP. For example, this may involve operating strategies to better handle high flow events due to inflow and infiltration. External funding has been used to create a full time position for an Optimization Extension Specialist who works closely with the Water Quality Engineer to develop and deliver the WWOP.

Recent activities have included annual reporting on the status of WWTP performance, hosting a workshop in November 2017 to engage the community of practice, holding quarterly strategic planning sessions, working closely with municipal partners to build their understanding of what their wastewater plants need to run effectively and apply enhanced operating procedures at selected plants. Examples of effluent quality improvements are demonstrated by the graphs in Figures 1 and 2.

Figure 1 shows the final effluent concentration of ammonia from the Hespeler WWTP following a pilot project to demonstrate enhanced treatment techniques. The objective of the pilot was to demonstrate that the plant could achieve the voluntary targets for ammonia simply by changing the way it was operated. WWOP staff worked closely with the operational staff at the Hespeler WWTP to implement additional monitoring and training of the operator to make process changes based on observed data. The graph in Figure 1 demonstrates a dramatic improvement in effluent ammonia with the voluntary targets being achieved in 10 out of 11 months.

The City of Brantford has been working on optimization initiatives at their WWTP for several years and is a leader in our watershed. The graph in Figure 2 shows voluntary reductions in total phosphorus (TP) discharged to the Grand River from the City of Brantford. The improvements shown in Figure 2 were the result of a number of initiatives including bringing in strict sewer use by-laws and improving wastewater treatment procedures associated with phosphorus removal. The WWOP promotes Brantford's experience with phosphorus reduction as an example for other WWTPs in the watershed to follow.

Figure 1: Ammonia Concentration in the Hespeler WWTP Effluent improved dramatically following enhanced operating procedures

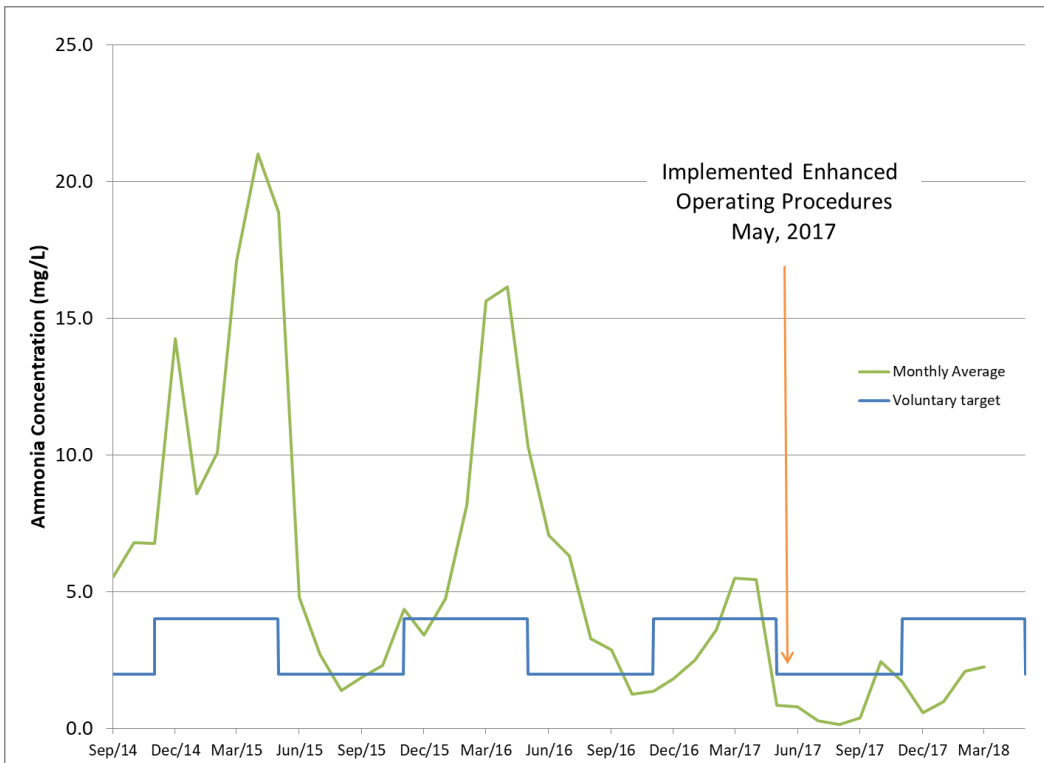
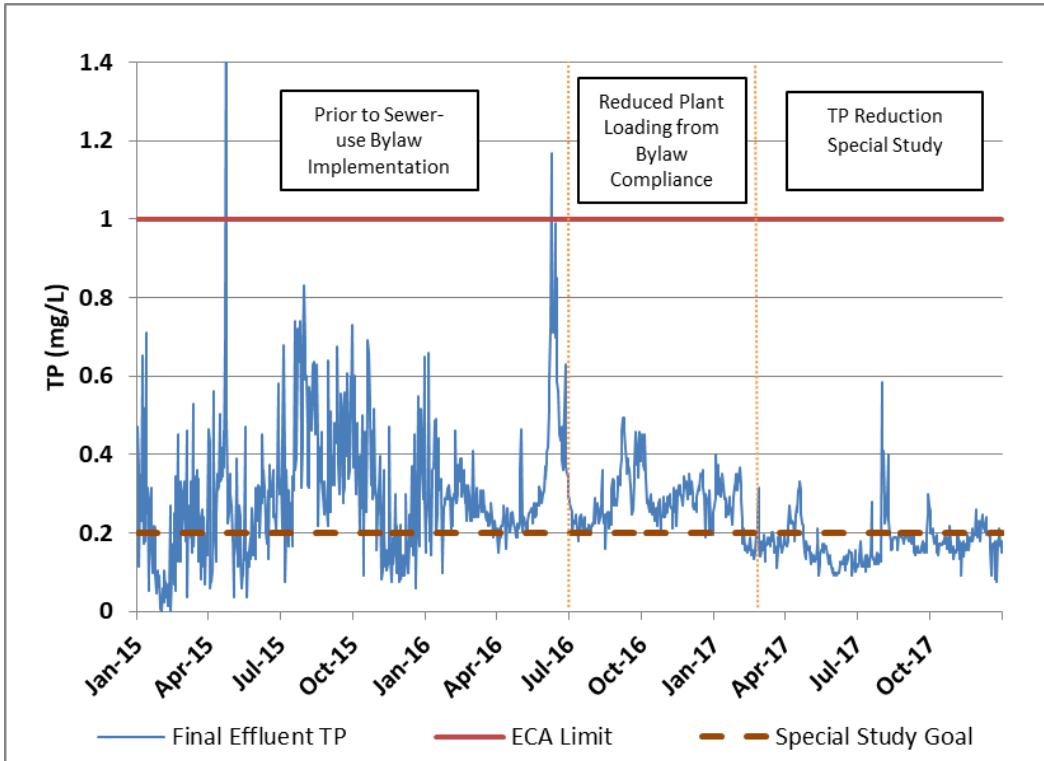




Figure 2: Phosphorus concentration in effluent from the Brantford WWTP demonstrating reduced variability, lower concentrations, and achieving the voluntary target after improving wastewater treatment processes in the plant.



**Financial implications:**

The WWOP is externally funded through grants from the MOECC and FCM. MOECC has committed \$304,000 to support the program from September 2017 until February 2022. FCM funding covers 80% of eligible program costs (primarily GRCA staff wages and consulting fees) up to a maximum of \$250,000 between January 2018 and December 2019.

**Other department considerations:**

None

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