

September 21, 2016

**NOTICE OF
BOARD OF DIRECTORS' MEETING**

DATE: TUESDAY, September 27, 2016

TIME: 9:30 A.M. – 12:00 P.M.

LOCATION: WATERSHED CONSERVATION CENTRE
BOARDROOM

AGENDA:	TIME
1. Approval of Agenda	9:30am
2. Declaration of Conflicts of Interest	
3. Confirmation of Payment as Required Through Statutory Obligations	
4. Minutes of the Previous Meeting: Tuesday August 23, 2016	
5. Business Arising from the Minutes	
6. Delegation	9:35am
(a) Town of Ingersoll (20 minutes) -Development & Regulated Areas in Ingersoll	
(b) City of Woodstock (40 minutes) -Property Matters Relating to Pittock Lands	
7. Closed Session – In Camera	10:35am
(a) Property Matter Relating to the Cottage Program (I.Wilcox)(Report attached) (Document #115653)(5 Minutes)	
(b) Legal Matter Relating to the Cottage Program (J.Howley/G.Inglis)(10 Minutes) (Report to be circulated at Meeting)	
8. Business for Approval	10:50am
(a) Hearing Member Appointment (I.Wilcox) (Report attached)(Document #115655) (10 Minutes)	

- (b) Assessment Growth Request (T.Annett)
(Report attached)(Document ENVP #3896)
(5 Minutes)
 - (c) Comfort House Demolition (B. Mackie)
(Report attached)(Document #115626)
(10 Minutes)
 - (d) NDMP Project Applications (C.Tasker)
(Report attached)(Document: Flood Control #833)
(5 Minutes)
 - (e) Water and Erosion Control Projects
(C.Tasker)(Reports attached)(10 Minutes)
 - i) Pittock Dam Control Buidling
(Document: Flood Control #830)
 - ii) Fanshawe Motor Control Panel Update
(Document: Flood Control #829)
 - iii) West London Dyke Rehabilitation Update
(Document: Flood Control #828)
9. Business for Information 11:30am
- (a) Administration and Enforcement - Section 28
(M.Snowsell/K.Winfield)(Report attached)
(Document: ENVP #3881)(5 minutes)
 - (b) Pioneer Village Update (Shanna Dunlop)
(Report attached) (5 minutes)
 - (c) Thames River Phosphorus Issue Overview
(C.Harrington)(Report attached)
(Document: Watershed Planning #751)
(15 minutes)
10. Communications 11:55am
- (a) Thank You Letter from Jane McKelvie
(Letter attached)
11. Other Business (Including Chair and
General Manager's Comments)
12. Adjournment 12:00pm

The meeting will be followed by a tour of the Fanshawe Cottages for member's who were not present at the June 2015 tour.



Ian Wilcox, General Manager

c.c. Chair and Members of the Board of Directors

I.Wilcox	T.Hollingsworth	J.Howley	C.Ramsey	S. Musclow
C.Saracino	A.Shivas	C.Tasker	B.Mackie	P. Switzer
G.Inglis	B.Glasman	M.Snowsell	K.Winfield	B. Verscheure
T.Annett	M.Viglianti	C.Harrington	R.Goldt	S. Dunlop

MINUTES
BOARD OF DIRECTORS' MEETING
TUESDAY, SEPTEMBER 27, 2016

M.Blackie, Chair of the Upper Thames River Conservation Authority called the Board of Directors' meeting to order at 9:30 a.m. in the Boardroom of the UTRCA Watershed Conservation Centre. The following members and staff were in attendance.

Members Present:	T.Birtch	S.Levin
	M.Blackie	N.Manning
	M.Blosh	H.McDermid
	M.Campbell	J.McKelvie
	R.Chowen	A.Murray
	A.Hopkins	M.Ryan
	T.Jackson	K.Van Kooten-Bossence
	M.Ryan	G.Way

Regrets: George Way
Note: Stratford Appointment remains vacant

Solicitor: G.Inglis

Staff:	T.Annett	M.Shifflet
	M.Funk	J.Skrypyk
	C.Harrington	M.Snowsell
	T.Hollingsworth	I.Wilcox
	J.Howley	B.Verscheure
	B.Glasman	K.Winfield
	R. Goldt	

1. Approval of Agenda

T.Jackson moved – T.Birtch seconded:-

“RESOLVED that the UTRCA Board
of Directors approve the agenda as posted.”

CARRIED.

2. Declaration of Conflicts of Interest

The Chair inquired whether the members had any conflicts of interest to declare relating to the agenda. There were none.

3. Confirmation of Payment as Required Through Statutory Obligations

The Chair inquired whether the Authority has met its statutory obligations in the payment of the Accounts Payable. The members were advised the Authority has met its statutory obligations.

4. Minutes of the Previous Meeting
August 23, 2016

A.Murray moved – M.Ryan seconded:-

“RESOLVED that the UTRCA Board of Directors approve the Board of Directors’ minutes dated August 23, 2016 as posted on the Members’ web-site.”

CARRIED.

5. Business Arising from the Minutes

There was no business arising from the minutes.

6. Delegation

(a) Town of Ingersoll-Development & Regulated Areas in Ingersoll

M.Blackie introduced Town of Ingersoll CAO Bill Tigert and Deputy Mayor Fred Freeman. The Town of Ingersoll wants to begin a discussion about making policy changes around developing the flood fringe area due to the constraints it puts on drawing new investments to the town core. The Town is currently working on special policies that will include opportunities in the flood fringe, flood proofing and egress for emergency vehicles. The second topic they wished to bring forward was the turnaround time for planning applications. They are supportive of the comments the UTRCA submitted to the CA Act review in regards to getting additional resources in flood management and flood review. They would like to work with the UTRCA to strengthen relationships. The Delegates answered questions from the Board. Staff will prepare a report for the October meeting in response to this delegation.

(b) City of Woodstock-Property Matters Relating to Pittock Lands

M. Blackie introduced Brian Connors, Director of Parks and Recreation for the City of Woodstock and Mayor Trevor Birtch. Brian Connors gave a history of the South shore property, discussed the current agreement with the UTRCA and outlined their plans for the land should they reach an agreement with the UTRCA. He also voiced the city’s concerns over safety and illegal dumping on the properties in question. He gave an overview of a document that outlines a new vision for the properties that came out of a number of public meetings. He outlined the offers the city put forth to lease/purchase the 4 parcels and their plans to improve the parcels.

Mayor Birtch discussed the costs that the City would take on if they purchased/leased the properties. He outlined some of the restoration projects the City is currently working on in partnership with the UTRCA. Mayor Birtch talked about the shared mandates of environmental protection and recreation between the City of Woodstock and the UTRCA. He talked about the Provincial Policies that governs the sale and leasing of Conservation Authority land and offered some interpretations of those Provincial Policies. Mayor Birtch emphasized the importance of preserving these natural spaces for future generations.

The Delegation answered questions from the Board. Discussion regarding the property aspects of this matter will be discussed in Closed Session as per UTRCA policy. Staff will prepare a report for the October meeting for the Board's consideration.

The October Board meeting will be held in Woodstock so the Members can tour the Pittock Conservation Area.

7. Closed Session – In Camera

There being property and legal matters to discuss,

T.Jackson moved – M.Ryan seconded:-

“RESOLVED that the Board of Directors adjourn to
Closed Session – In Camera.”

CARRIED

Progress Reported

The Board discussed property matters relating to the Woodstock delegation presentation.

- (a) A property matter relating to the Cottage program was discussed.
- (b) A legal matter relating to the Cottage program was discussed.

8. Business for Approval

- (a) Hearing Member Appointment
(Report attached)

The Chair called three times for nominations for one position on the Hearings Committee. M.Ryan nominated N.Manning to be a member of the Hearings Committee for the remainder of the 2016 term. N.Manning agreed to let her name stand for the position on the Hearings Committee for the remainder of the 2016 term.

- (b) Assessment Growth Request
(Report attached)

The Board voiced their reservations in having Planning staff members dedicated to and funded solely by the City of London. The pros and cons of various solutions to the capacity issue were brought forward and discussed. As mentioned by the Ingersoll delegation, the staffing capacity issues of the Planning department are shared by the rest of the Watershed. I.Wilcox asked whether they would like this put into the 2017 budget. The Board would like to see what the impact on the budget would be.

S. Levin moved – A. Hopkins seconded:-

“RESOLVED that the recommendation be amended to include the following :
Given service level concerns expressed by member municipalities, the Board directs the General Manager to include watershed wide planning and regulations capacity funding as part of the 2017 draft budget.”

CARRIED

S. Levin moved – T. Birtch seconded:-

“RESOLVED that the Board of Directors accept the recommendation as amended.”

CARRIED

- (c) Comfort House Demolition
(Report attached)

B.Mackie explained the situation as outlined in his report. He would like to re-negotiate with the City about the house’s inclusion on the City of London’s Heritage Building Inventory list and will get more details as to exactly what parts are considered historically significant.

T.Birtch moved – H.McDermid seconded:-

“RESOLVED that the Board of Directors accept the recommendations as presented in the report.”

CARRIED

- (d) NDMP Project Applications
(Report attached)

S. Levin moved – N.Manning seconded:-

“RESOLVED that the Board of Directors accept the recommendations as presented in the report.”

CARRIED

- (e) Water and Erosion Control Projects
(Reports attached)

- (i) Pittock Dam Control Building

S. Levin moved – B.Petrie seconded:-

“RESOLVED that the Board of Directors accept the recommendations as presented in the report.”

CARRIED

- (ii) Fanshawe Motor Control Panel Update

S. Levin moved – N.Manning seconded:-

“RESOLVED that the Board of Directors accept the report as presented.”

CARRIED

- (iii) West London Dyke Rehabilitation Update

S. Levin moved – N.Manning seconded:-

“RESOLVED that the Board of Directors accept the report as presented.”

CARRIED

9. Business for Information

- (a) Administration and Enforcement – Section 28
(Report attached)

The attached report was presented to the members for information. Discussion was had regarding the concerns around the lack of enforcement of the Drainage Act. Staff will put together a letter to send to the Municipalities voicing the concerns about the Drainage Act enforcement issue.

S.Levin moved – T.Jackson seconded:-

“RESOLVED that the Board of Directors accept the report as presented.”

CARRIED.

- (b) Pioneer Village Update
(Report attached)

Ian introduced Shanna Dunlop, the new Executive Director of the Fanshawe Pioneer Village. Ian explained to the new Board members the relationship between the UTRCA and the Pioneer Village. S.Dunlop outlined her report including a highlight of their current Strategic Plan.

- (c) Thames River Phosphorus Issue Overview
(Report attached)

C.Harrington outlined the report and added that the UTRCA is also heavily involved in the Provincial level working groups that are developing domestic actions plans around phosphorus

reduction. The UTRCA Environmental Targets are complementary to the Provincial target of reducing phosphorus in Lake Erie by 40%. The Fisheries Management Plan was brought up and C.Harrington explained that after the completion of the Water Management Plan, the Thames River Clear Water Revival group will remain intact to tackle other management plans, and the Fisheries Management Plan could possibly be a future project.

10. Communications

- (a) Thank you letter from Jane McKelvie
(Letter attached)

11. Other Business (Including Chair and General Manager's Comments)

I.Wilcox updated the Board regarding the status of getting a new Stratford representative. The position should be filled by November.

M.Blackie informed the Board of some of the highlights of the Conservation Ontario meeting and the discussions they had around the CA Act review. Updates on the Gilmore case were given.

12. Adjournment

There being no further business the meeting was adjourned at 12:15 pm on a motion by M.Ryan.



Ian Wilcox
General Manager
Att.

M.Blackie, Authority Chair

To: UTRCA Board of Directors

From: Ian Wilcox, General Manager

Date: September 15, 2016

Agenda #: 8(a)

Subject: Hearings Committee Member Replacement

Filename: ::ODM\GRPWISE\UT_MAIN\UT
RCA_PO.File_Centre_Library:115
655.1

Recommendation: That an election be held, following procedures as outlined in Section 5.1 of the UTRCA's Board of Directors' Policy Handbook, to fill the Hearings Committee vacancy created by the resignation of Past-Chair Jane McKelvie from the Board. The position's term would expire in February 2017 when all elected positions are re-contested as part of the UTRCA's Annual General Meeting.

Background

The UTRCA's Hearings Committee is a standing committee of the Board. Its role is described below (copied from the UTRCA's Board of Directors' Policy Handbook):

5.5 Hearings Committee

19. The Hearings Committee may also serve the function of an Executive Committee as per the requirement of *The Conservation Authorities Act*; however, the practice of the Board is to deal with all matters before the whole Board rather than an Executive Committee.

The Hearings Committee responsibilities include:

- a) Conduct Hearings in accordance with Section 28(3) for regulations passed pursuant to Section 28(1) of *The Conservation Authorities Act*;
- b) Conduct an annual performance review for the General Manager; and
- c) Conduct the hiring, evaluation and, if necessary, discipline of the General Manager. If, after following due process including Progressive Discipline, the termination of the General Manager is warranted, the Hearings Committee must first seek approval of the full Board.

The Hearings Committee consists of five members:

1. Chair
2. Vice Chair
3. Past Chair
4. Member at Large
5. Member at Large

With the resignation of Jane Mckelvie from the Committee and from the Board, the position of 'Past-Chair' is vacant and is available to be filled by any member of the Board. It is recommended that an election be conducted at the September meeting of the Board, as described under Section 5.1 of the Policy Handbook.

If any member is interested in this position they are encouraged to secure a nominator and to let the Chair know of their intent to run.

Please contact the General Manager at 519 451-2800 ext. 259 if you have questions regarding the position.

Recommended and Prepared by:

A handwritten signature in blue ink, appearing to read "Ian Wilcox". The signature is fluid and cursive, with a large initial "I" and a long, sweeping tail.

Ian Wilcox

To: UTRCA Board of Directors
From: Tracy Annett
Date: September 15, 2016 **Agenda #:** 8b)
Subject: City of London Assessment Growth Funding **Filename:** ::ODMA\GRPWISE\UT_MAIN.UTRCA_PO.ENV
P:3896.1

RECOMMENDATION

THAT the City of London Assessment Growth Funding request be supported by the UTRCA Board of Directors.

BACKGROUND

Funding from the City of London’s assessment growth refers to property taxes levied on new homes and businesses. These new homes and businesses are expected to receive the same municipal services that existing taxpayers receive. Assessment growth funds the additional volume of municipal services such as; road maintenance, snow plowing, garbage collection, street lighting, recreation, fire and police services, resulting from the new homes and businesses. The Environmental Planning & Regulations Unit has applied for increased staff capacity funding for Land Use Planning and Land Use Regulation in order to be ready for the increased work load and responsibility associated with responding in a timely manner to the increased volume of Planning Act circulations, Conservation Authority Act permit applications, Environmental Assessments, inquiries, etc. These increases can be directly attributed to the expected growth in development activity as the City continues to expand.

DISCUSSION

An application has been submitted to request additional funding for two staff positions; a Land Use Regulations Officer, and a Land Use Planner. The request is for one (1) full time Land Use Regulations Officer and (1) full time Land Use Planner in the Environmental Planning and Regulations unit, to respond to the increase in development applications in London. The City’s development initiatives are expected to result in an increase in application numbers and workload volume. The Authority’s total funding request is provided below.

Operating (<i>Growth Area x Unit of Measure Cost of Service</i>)	\$92,948 (Wages and Benefits)
Capital Cost of Incremental Assets	Workstation, computer & associated furniture: Cubicle & Chair - \$6,000 PC - \$1,500 (hardware & software) Phone & Cell Phone \$900 Training - \$1,500 Compliance training for regulations officer TOTAL (one time cost): \$9,900
Total Growth Request for Each Position	\$102,848
	TOTAL \$205,696

Currently, the UTRCA employs two full-time Land Use Regulations Officers, a part-time Regulations Technician and two full-time Land Use Planners for our 3432 km² watershed. In addition, technical staff with expertise in the areas of Ecology, Stormwater Management, Water Resources Engineering, Hydrogeology, and Geographic Information Systems are relied upon to assist in the technical peer review of submissions to support development proposals. One Land Use Regulations Officer and Land Use Planner are dedicated to City of London initiatives, while a Land Use Planner and Regulations Officer are dedicated to development reviews for the remainder of the watershed. The part-time Regulations Technician is the primary contact for Drainage Act applications, responding to mapping requests, and assisting with general inquiries. This staffing capacity has not increased since 2008. The UTRCA has relied on employment programs to assist with the workload (i.e., Human Resources Skills Development Canada, Co-op Work Terms, Summer Careers Opportunity etc.) However, with the forecasted increase in development activities additional staffing is required to maintain the level of service to support the City of London's growth.

Of note:

- The number of CA Act Section 28 permits has increased by approximately 10 percent annually over the past 5 years
- Requested turnaround times for both planning and building permit applications has reduced over this same period
- Planning and regulations activity in the growth areas of London (i.e. South West Area and North West London) will continue to increase, as will the expectation for quick response times for all applications and inquiries
- Providing input on a wide range of Municipal Class Environmental Assessment (EA) projects is requiring more staff input and review time (primarily for stormwater management and also transportation plans such as the Veterans Memorial Parkway extension). We note that there are currently 65 active EA project files on the August 2016 EA Status Summary posted on the City of London's web site, with the UTRCA having an interest in in at least 55 of those projects. Historically, the average number of EAs we are involved with has been 40.
- Increased reliance on UTRCA Planning & Regulations Staff by City of London Departments. Each UTRCA position acts as a liaison for over 30 City of London staff including;
 - Stormwater Management
 - Building Division
 - Transportation Planning & Design
 - Development Services /Planning (Current, Long Range, Urban Regeneration etc.,)
 - Urban Forestry
 - Realty Services
 - Sewer Operations
 - Wastewater & Drainage Engineering
 - Water Engineering
 - Water Operations
 - Geomatics
 - City Solicitor's Office
 - Environmental & Parks Planning
- Participation in meetings at various City Hall offices or at project site locations, time spent during meetings and associated travel time to and from the sites / meeting locations amount to approximately 300 hours per year. The requests for meetings have increased substantially over the past several years.

- The City has a new tree cutting by-law coming into effect. We may receive more calls and be asked to assist City staff with potential violations.
- There is a need to update our Environmental Planning Policy Manual so that it is consistent with provincial/applicable legislation as well as with the new London Plan. This is an important piece for our policy review framework for both Planning Act Applications and our Section 28 permit process.
- In order to meet the needs of the City's Plan Review processes consistent with the time frame prescribed under the Planning Act, additional staffing is necessary to avoid delays in the development review process. There is a high risk of the UTRCA becoming the bottleneck in the planning and regulations process.

This funding application is specific to meet the growing needs of the City of London. However, it should not be overlooked that these same capacity concerns also exist for the balance of our watershed. Prior to 2006, the number of permits processed by one Regulations Officer was approximately 60, at a time when our involvement with EAs was substantially reduced. The increase in Section 28 Permit applications and Planning Act circulations are demonstrated below:

ENVIRONMENTAL PLANNING & REGULATIONS ACTIVITIES			
Year	Section 28 Permit Applications	Environmental Assessments	Planning Act Circulations
2012	140	43	522
2013	150	48	630
2014	158	38	576
2015	208	57	658
2016 (anticipated)	215	65	680

SUMMARY

This funding request has been submitted to hire one (1) Full-Time Land Use Regulations Officer, and one (1) Full-Time Land Use Planner Position to maintain the level of service required for the City of London's Development Review Processes.

PREPARED AND RECOMMENDED BY:



Tracy Annett, MCIP, RPP, Manager
Environmental Planning and Regulations

To: UTRCA Board of Directors
From: Bill Mackie, Lands & Facilities Supervisor
Date: September 13, 2017
Subject: Abandon House - Fanshawe C.A.

Agenda #: 8 (c)
Filename: ::ODMAIGRPWISEUT_MAIN.UT
RCA_PO.HR:5336.1

Recommendation:

That the Board of Directors direct staff to enter into discussions with the City of London to assess and possibly remove the abandon house at Fanshawe C.A. located across from the WCC.

Report:

The house adjacent to the gravel lot where Authority vehicles are parked on the west side of the main entrance road across from the WCC (map attached) is currently abandoned and boarded up. The house was occupied by a rental tenant up until August 2007. After the tenant vacated, the structure was used to store equipment and the adjacent parking lot utilized to park Authority vehicles. The storage of equipment in the house ceased a couple of years ago as it became a safety issue for staff to occupy the structure due to animal presence. There have also been issues with vandals and the homeless attempting to break into the structure therefore deeming it a public liability issue if anyone was to be injured on the site.


The house has been identified on the City of London's Heritage Building Inventory list. The house is not designated, however. Inclusion on the list means that if a demolition permit application was submitted, it would be denied until an assessment was performed to determine if the structure has potential heritage or cultural significance.

Based on this information, staff feel it responsible to discuss with the City of London options regarding the future demolition of the structure and are asking for authorization to proceed with this inquiry.

Recommended by:

Alex Shivas
Manager, Lands & Facilities

Prepared by:



Bill Mackie
Lands & Facilities Supervisor

*Map Attached



Notes:

Created By: BM September 13, 2018



To: UTRCA Board of Directors
From: Chris Tasker, Manager
Water and Information Management
Date: September 21, 2016 **Agenda #:** 8 (d)
Subject: NDMP funding proposal update **Filename:** Flood Control #833

Recommendation

It is recommended that the Board support the submission of proposals for federal funding from the National Disaster Mitigation Program (NDMP).

Background

National Disaster Mitigation Program

The National Disaster Mitigation Program (NDMP) is a federal program established in April 2015 to reduce impacts of natural disasters on Canadians. The program focuses investments on significant recurring flood risk and advancing work to facilitate private residential insurance for overland flooding. Applications are made through a provincial process with MMAH taking the lead and MNR providing technical support. It is a 5 year program currently including \$200 million in federal funding.

The NDMP provides 4 funding Streams:

- Stream 1 - Risk Assessments
- Stream 2 - Flood Mapping
- Stream 3 - Mitigation Planning
- Stream 4 - Non-structural and small scale structural mitigation projects

More information is also available in the report distributed by email June 2 requesting board support for submitting applications to the second round of funding as well as the update report for the June meeting following the submission of those projects. All projects submitted to MMAH in June were accepted and forwarded to Public Safety Canada.

Proposals for the third round have been requested. This update is intended to provide information on the projects submitted in this third round and request board support of those projects.

Update

To be eligible under this call for proposals, projects must begin in the 2017-18 federal fiscal year (by March 31, 2018) and be completed by the end of the 2018-19 fiscal year (by March 31, 2019). Proposals were submitted September 16, 2016 for the following projects.

Stream	Project	Description	NDMP Funding request (Year)	Local Funding
2 (Flood Mapping)	Thames River Tributary Floodplain Mapping Updates	<ul style="list-style-type: none"> Update floodplain mapping within a modern GIS-based model environment. A continuation of work proposed in round 2 submissions This proposal focuses on Thames River Tributaries in high risk areas such as the Ingersoll, St Marys and London 	\$ 400,000 (2017-19)	\$ 400,000 (current/future UTRCA budgets)
4 (non-structural)	WISKI Hub 2	<ul style="list-style-type: none"> Second phase of SW Ontario Hub project, which will enhance reporting and publication of information, and provide user support for hub members on the shared environmental database for south western Ontario conservation authorities stores time series data, including water levels, water discharges, rating curves, rain, snow, air temperature etc for improving flood forecasting and warning systems and modelling 	\$ 87,500 (2017-19)	\$ 87,500 (current/future UTRCA budgets, HUB partners)
4 (non-structural)	Reducing the Impacts of Stormwater in the Upper Thames Watershed - Green Infrastructure Promotion	<ul style="list-style-type: none"> The project will develop and pilot presentation of scripts, display items and activities that illustrate the impact of impervious surfaces on the flow of water in urbanized areas and the role of storm water to flooding. Homeowner, community and municipal level examples of low impact development will be highlighted and support materials created to motivate and support implementation of these practices. Senior level high school, flood prone community members, will be targeted for implementation. 	\$ 36,660 NDMP (2017-18)	\$ 35,000 (UTRCA, MOECC) + in-kind Board of Education and municipal support
4 (structural)	West London Dyke Rehabilitation Ph 4	<ul style="list-style-type: none"> Phase 4 of a multi-phased project to rehabilitate West London Dykes and bring it up to current safety and risk mitigation standards Design in 2017/18, Construction in 2018/19 	\$1,500,000 (2017-19)	\$ 3,730,000 (City of London and WECl)
4 (structural)	St Marys Floodwall Repairs	<ul style="list-style-type: none"> Complete major maintenance on a floodwall constructed in 1990 to protect existing/historical downtown commercial and residential areas 	\$ 350,000 (2017-18)	\$ 395,000 (St Marys Floodwall Reserve, 2018 FC Levy) + in kind municipal staff and UTRCA project admin
4 (non-structural)	Flood Forecasting and Warning Hydrometric Network Modernization	<ul style="list-style-type: none"> Update or develop rating curves for water level gauges in the Thames Watershed for the benefit of the Flood Forecasting and Warning program, to improve accuracy in the calibration of hazard mapping models used to assess flood risk areas, to provide information 	\$82,000 (2017-19)	\$ 82,000 (current/future UTRCA budgets)

		<p>in post-event analyses and real time forecasting models.</p> <ul style="list-style-type: none"> • Modernize rain gauge network to improve accuracy and comply with OH&S codes (working at heights) to make safe calibration and cleaning possible. A total of 22 rain gauges must be re-evaluated for safe location and moved or modified. • Evaluation of stream gauge/rain gauge network for locations and possible deficiencies/improvements, and develop ongoing maintenance program 		
		Total NDMP(Federal) funding requested in round 3 (September 2016)	\$2,456,100	

The proposals will be reviewed by MMAH (with technical support provided by MNRF, MOEE and other ministries) to determine which proposals get submitted to Public Safety Canada on October 31, 2016. We anticipate that the request for proposals for the next round will be in September 2017.

Staff will continue to work through the province and federal review processes to refine projects and facilitate approval of funding.

Prepared by:



Chris Tasker, P.Eng,
 Manager, Water and Information Management

To: UTRCA Board of Directors
From: Chris Tasker, Manager, Water and Information Management
Date: September 13, 2016 **Agenda #:** 8(e)(i)
Subject: For Approval – Budget Increase and Tender Award, Pittock Dam Control Building Replacement **Filename:** P:\Users\goldtr\Documents\GroupWis e\830-1.doc103609

Recommendations:

It is recommended that:

- 1. The Budget for the Pittock Control Building Replacement be increased from \$210,000 + HST to \$290,000 recognizing the costs of the lowest bid for construction of \$265,579.93 +HST and Engineering tendering and contract administration approved costs of \$23,000 + HST, and**
- 2. The low bid of Birnam Excavation Ltd. be accepted at a cost of \$265,579.93 +HST, subject to submission of required contract documentation.**

Background:

Tenders were released August 22, 2016 by BM Ross Associates. Tenders were advertised in the Daily Commercial News in Ontario and plans deposited with the London District and Grand River Construction Associations. A site visitation by contractors was mandatory.

Three qualified tenders were received September 8, 2016. Bids were received from:

Birnam Excavating Ltd.	- \$265,579.93 + HST
Finnbilt General Contracting Ltd.	- \$297,483.00 + HST
Sierra Construction Group	- \$324,500.00 + HST

The lowest bid by Birnam Excavating is recommended by BM Ross.

Budget:

The budget for this project set in February 2016 for the WECI submission was \$210,000 for construction and engineering contract administration. With the lowest bid recommended by BM Ross and the engineering costs previously approved for BM Ross at \$23,000 + HST the total budget required is \$290,000 + HST which is \$80,000 over budget.

At the time of budget setting scoping of the preferred building type, general functions, and layout had been completed without detailed design. Approximately \$45,000 in higher costs in the lowest bid can be attributed to final design inputs, and \$25,000 for the most significant item, building replacement cost. An additional \$20,000 for Contingency allowances and \$15,000 for a provisionary electrical item are included (but may not be spent). The final engineering tender estimate was \$215,000 for construction only. An increase in budget is recommended to complete this important work. Additional funding of \$40,000 will come from the Capital reserves for Pittock Dam which are sufficient to cover the municipal share and \$40,000 may come from the MNRF upon application to balance WECI grants amongst 2016 projects of the Authority. UTRCA has in the past been permitted to re-allocate surpluses to other projects which exceeded budget estimates. Accordingly

staff will request re-allocation of funds. At this time sufficient funds for re-allocation should be available from the approved Fanshawe Dam MCC Replacement project.

Please contact Rick Goldt or Chris Tasker if there are any questions or concerns with these recommendations.

Submitted by:



Chris Tasker, Manager
Water and Information Management

Prepared by:



Rick Goldt, Supervisor
Water Control Structures

To: UTRCA Board of Directors
From: Chris Tasker, Manager, Water and Information Management
Date: Sep 13, 2016 **Agenda #:** 8(e)(ii)
Subject: For Information - **Filename:** P:\Users\goldtr\Documents\GroupWis
Fanshawe Dam Master Control Cabinet e\759-1.doc103609
Construction Tender and Contract Award

Report Purpose:

This report informs the Board on the tender process completed for the Fanshawe Dam Master Control Cabinet Replacement project. The lowest bid that was accepted by staff in accordance with purchasing policy.

Background;

Tenders were released August 18, 2016 by NA Engineering Ltd. Tenders were advertised in the Daily Commercial News in Ontario and plans deposited with the London District and Grand River Construction Associations. A site visit was mandatory.

Four qualified tenders were received September 7, 2016. Bids were received from:

J.M.R. Electric Ltd.	- \$159,800 + HST
Murray Power and Generation Inc.	- \$162,000 + HST
Roberts Onsite Inc.	- \$170,000 + HST
Sutherland-Shultz Ltd.	- \$186,853 + HST

As reported in April 2016, the engineer's tendering and contract administration costs for the project are \$27,500 + HST which includes a contingency allowance of \$10,000 for further design if required. The bids include a contingency of \$15,000. The total of engineering and construction costs is therefore estimated at \$187,300 + HST. The project is significantly below the budget set for the project of \$260,000 + HST. The budget WECI funding surplus of \$36,350 may be possible to re-allocate to other UTRCA projects upon application to MNRF. UTRCA has in the past been permitted to re-allocate surpluses to other projects which exceeded budget estimates.

The contract was therefore awarded to J.M.R. Electric Ltd at a cost of \$159,800 + HST, subject to submission of required contract documentation.

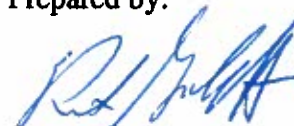
Please contact Rick Goldt or Chris Tasker if there are any questions.

Submitted by:



Chris Tasker, Manager
Water and Information Management

Prepared by:



Rick Goldt, Supervisor
Water Control Structures

To: UTRCA Board of Directors
From: Chris Tasker, Manager Water and Information Systems
Date: September 13, 2016 **Agenda #:** 8(e)(iii)
Subject: For Information – Tender and Consulting Adjustments, West London Dyke Phase 3 Construction **Filename:** P:\Users\goldtr\Documents\GroupWise\828-1.doc

Report Purpose:

This report provides further information on the tender results presented at the August 23, 2016 Board of Directors meeting for West London Dyke Phase 3 Construction and on the reduction in tender and engineering costs to address the budget of \$3,600,000. This report is provided for information purposes as the project was able to proceed with the current project budget and the tender was awarded to the low bidder.

Background:

At the August meeting staff presented the results of 2 tender bids received as follows:
Ro-Buck Contracting Ltd. - \$3,765,415.00+ HST
Bre-Ex Contracting Ltd. - \$4,787,198.28 + HST

As both tenders were over the project budget of \$3,600,00 (which also has to accommodate engineering costs), staff brought forward a number of options that could meet the objectives of implementing a viable project.

Update:

Following the board meeting UTRCA staff, City staff involved in the project, and the Consultant met to review options. Without additional City funding, with uncertainty as to how much additional WECI funding possibly could be applied to the project, and without results from National Disaster Mitigation Program (NDMP) application discussions focused on efforts to evaluate reductions or deferral of construction and engineering items. The low contractor was invited to participate in investigating ways to reduce project costs to the project budget. Due to the contractor's experience with Phase 1 work they were able to provide some valuable options to be considered.

Through the review of alternatives, the original length of project was maintained and the original construction contingency budget amount was also preserved. Rebalancing of earth excavation item quantities contributed to the majority of cost reductions. This change may increase pressure on the contingency but should not be significant enough to require an increase the overall budget. Specifically no environmental items were reduced. Landscaping items were also reduced. The consultant costs were also able to be reduced.

Through these efforts the low tender was reduced to \$3,291,302.70 + H.S.T. Changes in these items would not overcome the large difference in bids. As a result the project budget of \$3,600,000 + HST could be met and the construction contract was awarded to Ro-Buck Contracting Ltd. at cost of \$3,291,302.70 + HST. subject to submission of required contract documentation.

Should NDMP funding materialize it is expected that a increase in project length would be possible and that a majority of reduced or deferred items could be reinstated to the project. The Board will be updated as staff learns of the NDMP application outcome.

Please contact staff if you have any questions.

Recommended by:



Chris Tasker, Manager
Water and Information Systems

Prepared by:



Rick Goldt, Supervisor
Water Control Structures

To: Chair and Members of the UTRCA Board of Directors
From: Tracy Annett, Manager – Environmental Planning and Regulations
Date: September 14, 2016 **Agenda #:** 9 (a)
Subject: Administration and Enforcement – Sect. 28 Status Report – **Filename:** Document
Development, Interference of Wetlands and Alteration to **ENVP 3881**
Shorelines and Watercourses Regulation

This report is provided to the Board as a summary of staff activity related to the Conservation Authority's *Development, Interference of Wetlands and Alterations to Shorelines and Watercourses Regulation* (Ont. Reg. 157/06 made pursuant to Section 28 of the Conservation Authorities Act). The summary covers the period from August 10 to September 14, 2016

Application #19/16

City of Woodstock c/o Ecosystem Recovery Inc.

Southside Park – City of Woodstock

-proposed channel rehabilitation of Cedar Creek through Southside Park through the removal of existing pedestrian bridge, channel realignment, construction of pools and riffles, terracing of channel banks, bioengineering bank stabilization and landscape restoration works.

-plans prepared by Ecosystem Recovery Inc. and Woods Landscape Architecture and Arboriculture in accordance with recommendations from previously approved Municipal Class Environmental Assessment.

-staff approved and permit issued September 14, 2016.

Application #106/16

Municipality of Perth South

McNamara Drain – Perth South

-approval required for 1450 metres of bottom cleanout on Class C (warmwater with baitfish) drain

-also required to maintain one side bank of Roger Drain

-staff approved and permit issued August 11, 2016

Application #111/16

City of London

1545 Stackhouse Avenue – City of London

-proposed trail extension by City of London along section of Stoney Creek between Devos Drive and Stackhouse Avenue

-staff approved and permit issued August 29, 2016

Application #112/16

City of London

25 Beaufort Street – City of London

- proposed construction of trail connection as part of the Thames Valley Pathway system
- within Waldorf Park adjacent to the North Branch of the Thames River
- staff approved and permit issued August 29, 2016

Application #113/16

City of London

2125 Springridge Drive – City of London

- application for construction of multi-purpose pathway in Forest Hill Woods Subdivision
- staff approved and permit issued August 29, 2016

Application #117/16

Municipality of Middlesex Centre c/o Strik, Baldinelli, Moniz Ltd.

16 Mile Road (Lot 3, Concession 16) – Municipality of Middlesex Centre

- proposed road culvert replacement crossing the White-Fitzgerald Municipal Drain.
- plans prepared by Strik, Baldinelli, Moniz Limited.
- staff approved and permit issued September 14, 2016.

Application #132/16

County of Perth

Road 135, South of Line 44 – Township of Perth East

- proposed road culvert replacement crossing the Foley Municipal Drain.
- plans prepared by Dietrich Engineering Limited.
- staff approved and permit issued August 12, 2016.

Application #130/16

City of Stratford

O’Loane Avenue – City of Stratford

- proposed road culvert replacement crossing the McNamara Municipal Drain.
- plans prepared by City of Stratford.
- staff approved and permit issued August 15, 2016.

Application #139/16

Municipality of West Perth (Fullarton)

Wallace Drain – West Perth

- permission requested for maintenance on a Class F (intermittent) drain
- staff approved and permit issued August 11, 2016

Application #140/16

Municipality of South-West Oxford

McCauley Drain – S.W. Oxford

- proposal to undertake maintenance on Class F (intermittent) drain
- staff approved and permit issued August 11, 2016

Application #141/16

Municipality of Middlesex Centre

White-Fitzgerald Drain – Middlesex Centre

- approval requested for maintenance on Class F (intermittent) channel
- staff approved and permit issued August 11, 2016

Application #142/16

Municipality of Perth South

Wiseman Municipal Drain – Perth South

- proposed drain maintenance work on 320 metres of Class C warmwater/baitfish drain
- staff approved and permit issued September 2, 2016

Application #143/16

Township of Zorra

Huggins Municipal Drain – Zorra Township

- approval required for 1200 metres of spot clean-out of municipal drain
- Class C warmwater/baitfish channel
- staff approved and permit issued August 26, 2016

Application #145/16

County of Perth c/o B.M. Ross & Associates Limited

Road 130, North of Line 20 – Township of Perth South

- proposed road bridge replacement crossing the Douglas Municipal Drain.
- plans prepared by B.M. Ross & Associates Limited.
- staff approved and permit issued August 12, 2016.

Application #146/16

Town of St. Marys c/o B.M. Ross & Associates Limited

Water Street – Town of St. Marys

- proposed rehabilitation of the Water Street Bridge crossing Trout Creek.
- plans prepared by B.M. Ross & Associates Limited.
- staff approved and permit issued August 22, 2016.

Application #147/16

Town of St. Marys c/o B.M. Ross & Associates Limited

St. Marys Mill Race north of Queen Street – Town of St. Marys

- proposed replacement of the existing single stage mill race gates in favour of new two-stage gates within the St. Marys Mill Race in the North Thames River.
- plans prepared by B.M. Ross & Associates Limited.
- staff approved and permit issued August 22, 2016.

Application #149/16

City of London

Emery Street West – City of London

- approval required for construction of 800 metres of pathway within the Coves Environmentally Significant Area
- project recommended as part of Council-approved Coves Conservation Master Plan
- staff approved and permit issued August 29, 2016

Application #150/16

City of London

90 Mackay Avenue – City of London

- proposed upgrades to sections of existing pathways within “Euston Meadows” (part of Coves ESA)
- project consistent with approved Coves Conservation Master Plan
- staff approved and permit issued August 29, 2016

Application #151/16

Jamie & Leann Brown

40 Holcroft Street – Town of Ingersoll

- proposed construction of new single family residence, installation of driveway and installation of associated water and wastewater lines.
- plans prepared in accordance with location and mitigation measures previously discussed between landowner and UTRCA staff.
- staff approved and permit issued August 24, 2016.

Application #152/16

Krista Wilde

1329 Sprucedale Avenue – City of London

- proposed house construction within regulation limit but outside flood and erosion hazard lands
- site plans prepared by Callon Dietz surveyors and house plans prepared by Eng Plus
- staff approved and permit issued August 26, 2016

Application #153/16

UTRCA

West London Dyke – City of London

- Section 28 approval required in conjunction with implementation of Phase 3 of West London Dyke replacement project
- engineering drawings prepared by Stantec Consulting Limited and Risi Stone Retaining Wall Systems
- staff approved and permit issued August 24, 2016

Application #154/16

City of London

Meadowlily Road – City of London

- permit required in support of proposed road drainage improvements adjacent to Meadowlily Woods ESA
- poor road runoff conditions causing erosion impacting both private lands and sections of access routes into the ESA
- plans prepared by Robert A. Hughes (London) Limited and J. S. Malpass & Associates
- staff approved and permit issued August 26, 2016

Application #156/16

Stewardship Oxford

North of Thames River, East of Zorra Line – County of Oxford

- proposed wetland enhancement – Penwill Wetland – to create/restore a variety of wetland cells adjacent the South Thames River.
- plans prepared by Ducks Unlimited Canada and Stewardship Oxford.
- staff approved and permit issued September 12, 2016

Application #157/16

Stewardship Oxford

Thames River, Beachville Road and 45th Line – County of Oxford

- proposed wetland enhancement – Oxford County Thames River Oxbow Project (Phase 2) to create/restore a variety of wetland cells adjacent the South Thames River.
- plans prepared by Ducks Unlimited Canada and Stewardship Oxford.
- staff approved and permit issued September 12, 2016

Application #158/16
County of Perth c/o B.M. Ross & Associates Limited
Road 119, North of Line 40 – Township of Perth East

- proposed repairs and erosion protection works for existing culvert crossing the Court Municipal Drain.
- plans prepared by B.M. Ross & Associates Limited.
- staff approved and permit issued September 2, 2016.

Application #159/16
Charles and Erin Baxter
1163 Pondview Place – City of London

- proposed house reconstruction near Westminster Ponds-Pond Mills ESA
- site plans prepared by Holstead and Redmond as well as BOS Engineering and Environmental Services Inc.
- staff approved and permit issued September 6, 2016

Application #160/16
Isaac Watson
170 Springbank Drive – City of London

- UTRCA permit required for construction of house addition in Coves Special Policy Area
- plans prepared by Durasin Drafting and Design, with floodproofing components prepared by Strik Baldinelli Moniz (Engineers)
- staff approved and permit issued September 6, 2016

Application #161/16
Municipality of Perth South
Wiseman Drain – Perth South

- proposed 8 metre extension of corrugated steel culvert
- engineering by Spriet Associates
- staff approved and permit issued September 12, 2016

Application #163/16
Virgilio Reis
Part Lot 16, Concession 8 – Municipality of Middlesex Centre

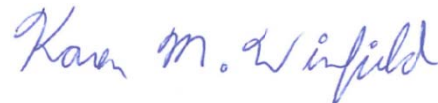
- proposed culvert installation crossing the Needham-Fish Drain and proposed renaturalization of riparian area with plantings of trees and shrubs.
- plans prepared by B. Glasman of the UTRCA.
- staff approved and permit issued September 8, 2016.

Reviewed by:



Tracy Annett, MCIP, RPP, Manager
Environmental Planning and Regulations

Prepared by:



Karen Winfield
Land Use Regulations Officer

Mark Snowsell

Mark Snowsell
Land Use Regulations Officer

Cari Ramsey

Cari Ramsey
Env. Regulations Technician

To: UTRCA Board of Directors
From: Shanna Dunlop, Executive Director, Fanshawe Pioneer Village
Date: September 13, 2016 **Agenda #:** 9(b)
Subject: Fanshawe Pioneer Village Report **Filename:**

The spring and summer seasons have been very successful at Fanshawe Pioneer Village. To date, we have provided 287 education programs to 9,836 individuals and delivered 11 special events to 4,832 visitors. General site visitation has been on target, despite exceptionally humid weather which can often result in reduced numbers. Site interpretive themes for 2016 have included a focus on agricultural activities and displays as well as new exhibits pertaining to the Great War told from local viewpoints. Our Trillium Community Gallery has featured 2 new special exhibits which have drawn positive community interest.

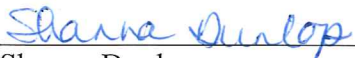
The rentals program at Fanshawe Pioneer Village continues to expand and contribute to earned revenues with 21 wedding ceremonies, 22 receptions and 4 corporate bookings from May through August. The rental program is expected to exceed target revenues this season.

To date \$190,171 has been raised for the heritage Storefronts rehabilitation project, which will add a tinsmith, historic Rotary office and a harness shop to the Village streetscape as well as provide a fully accessible boardwalk linking the Denfield General Store and Printshop buildings. The projected completion date for the project is August 2017.

This summer saw the completion of a three-year project to relocate Fanshawe Pioneer Village's artifact collections to our new curatorial facility. A total of 24,803 artifacts were relocated, conserved, catalogued and appropriately housed.

Following a community consultation process, the Board of the London & Middlesex Heritage Museum finalized and approved new strategic directions in January 2016. These will guide the development of a new three-year strategic plan for the organization. A key objective of the strategic directions is the pursuit of accessibility initiatives to serve all audiences. To this end the "Fanshawe Getaway" Route 400 to the Conservation Area and Pioneer Village was implemented as a 2016 pilot project with support from the London Transit Commission and Tourism London.

Prepared by:



Shanna Dunlop
Executive Director
Fanshawe Pioneer Village

To: UTRCA Board of Directors

From: Teresa Hollingsworth, Manager Community and Corporate Services
Brad Glasman, Manager Conservation Services
Chris Harrington, Manager Watershed Planning, Research and Monitoring

Date: September 20, 2016 **Agenda #:** 9(c)

Subject: UTRCA Phosphorus Reduction Efforts **Filename:**
Watershed Planning # 751

Background:

The Thames River is situated in a highly developed and highly productive part of southern Ontario. The water quality of the Thames River has undergone many changes over the past century as a result of human and land use activity in the watershed. Surface water quality has fluctuated, partly in response to changes in urban wastewater treatment, industrial waste management, agricultural practices, storm water management, and other land management practices. As the largest watershed in the Lake St. Clair basin, the Thames River has the potential to significantly impact conditions in Lake St. Clair and, by extension, in Lake Erie. Changes in the form of phosphorus entering Lake Erie, as well as altered nutrient cycling and food web dynamics, are believed to be key factors in the resurgence in recent years of algal blooms. This has resulted in the Thames River being identified as a priority watershed for the reduction of phosphorus loads to Lake Erie with a target of reducing phosphorus loads by 40% set by the federal government.

The issue of impaired water quality, including excess nutrients in the Thames River, is not new. Since the 1970's, studies have been conducted to understand sources and develop implementation programs. Some major studies include the Pollution from Land Use Activities Reference Group (PLUARG) studies in the 1970's, the Thames River Water Management Study (1970's), Stratford-Avon River Environmental Management Project (SAREMP) in the 1980's, Clean Up Rural Beaches (CURB) studies (mid 1980's to 1990's), City of London Subwatershed Studies (1990's), Kintore Creek watershed studies (1980 – 1990's), Thames Watershed and Region Watershed Characterization – Drinking Water Source Protection (2000's).

High phosphorous (P) loadings in freshwater is widespread in southwestern Ontario, not only in the Thames River. Phosphorus (P) is an essential plant growth nutrient and is therefore a key component in synthetic fertilizer, and in manure. It is also the primary nutrient that promotes excessive growth of aquatic plants and algae and can cause drastic degradation of freshwater habitats (Schindler 2012). Cyanobacteria, often called blue-green algae, produce toxic substances that can impair the health of animals and humans if ingested. Excessive algal blooms can result in eutrophication, which chokes the water body by depleting oxygen, resulting in periods of low level oxygen in the river, and

conditions harmful to sensitive aquatic organisms including fish. Localized conditions of excess algae and low oxygen have persisted in areas of the Thames River watershed, especially where the river is impounded or slow moving. Although some improvement has been made, there continues to be an elevated concentration of phosphorus in streams across the watershed.

Sources of phosphorus include agricultural point sources (e.g. greenhouse irrigation and nutrient solutions, milking centre wash waters, and livestock yards) and non-point sources (e.g. nutrient application, soil erosion, cropland runoff, or tile drainage). Non-agricultural point sources include combined sewer overflows, construction sedimentation, sewage treatment plants, industrial effluents, and septic systems and non-point sources include atmospheric deposition of airborne dust, construction sites and urban storm water runoff. The phosphorous found in organic materials, including manure, compost or sewage sludge, is largely in the form of organic compounds which are stable and unavailable for plant uptake. The process of mineralization gradually converts the stable P to labile and soluble forms, which become available for crop uptake. Most commercial fertilizers are manufactured with a dissolving agent that with adequate moisture, produce a plant available Phosphorous molecule in the soil solution. It is for this reason that Phosphorous availability from commercial fertilizers is often greater than Phosphorous availability from organic sources (Rehm et. al, 2002). When applied to agricultural land, both organic and commercial fertilizers have the potential to act as nonpoint sources through soil erosion, cropland runoff, or tile drainage. Managing runoff from storm events within a rural agricultural setting is the practice of “rural storm water management”. This practice has been a focus of stewardship efforts in the Upper Thames Watershed to reduce the amount of phosphorus reaching the river. In an effort to address urban non-point sources of Phosphorus, low impact development, a storm water management approach that treats, infiltrates, filters and retains runoff at the source is being promoted through demonstrations and education and outreach.

Introduction:

This report is set up with two sections below. The first highlight the research, monitoring and planning initiatives that are being undertaken to address water quality and phosphorus issues in the Thames River watershed. Efforts aimed to refine actions taken to improve water quality through monitoring and analysis and to foster collaboration with partners in are highlighted. Secondly the next section on stewardship highlights on the ground efforts currently being implemented to address the problems as many programs have been developed over the years to address the water quality issues highlighted above. In addition the stewardship section highlights opportunities to increase efforts given the amplified profile of the Thames River as a significant phosphorus source coupled with the 40% reduction in Phosphorus loading to Lake Erie set by senior levels of government. Ultimately this report aims to demonstrate both the efforts ongoing to plan and research how to best address the highlighted problems while simultaneously undertaking work on the ground to improve the situation.

Water Management Plan, Thames River Clear Water Revival Initiative (TRCWR) and UTRCA Environmental Targets:

In 2013 the Upper Thames River Conservation Authority Board of Directors endorsed a Terms of Reference for the collaborative development of an updated Water Management Plan (May 2013 UTRCA Board report attached for reference). Highlight here is progress related to one of the five goals associated with development of the updated Water Management Plan. Specifically the goal

identified to “Improve water quality of the Thames River watershed and downstream waterways by incorporating trends in sources, transport and accumulations of key parameters identified in the Great Lakes basin-wide initiatives and in important functions of the Thames River”.

As part of the Water Management Plan an assessment of best available water quality and water flow data for the Thames River was completed in 2015 to determine phosphorous and sediment source areas, loadings, and timing of delivery throughout the Thames watershed (Nurnberg and LaZerte 2015). The goal was to provide information, based on water quality data, to assist in understanding stream nutrient and sediment conditions and inform implementation strategies. The study was the first to summarize long-term monitoring data for the entire Thames River system. The large temporal (24 years of data within 1986-2012) and spatial (83 stations) sampling of water quality, combined with the extensive coverage by daily flows from 26 gauges, made it possible to describe and assess the variation of nutrients and sediments throughout the Thames River watershed. The time period of 1986 - 2012 was analysed to investigate relatively recent conditions and still have enough data available to conduct a detailed analysis. Previous studies found that total phosphorus concentrations were significantly higher in the 1970's and that there were significant improvements from the 1970's to 1980's concentrations.

The study found:

- i. The estimated annual export of total phosphorous and dissolved reactive phosphorus loads from the Thames River into Lake St. Clair is 342 metric tonnes per year and 187 metric tonnes per year, respectively.
- ii. There are no trends over time in river flows since 1986, but extreme seasonal differences occur with the largest flows in late winter and spring.
- iii. There are trends over time, and across the watershed, for nutrient and sediment flow-weighted average concentrations.
- iv. Total phosphorus concentrations have decreased significantly over time at sites across the Thames River watershed since 1986, including: Thames River below the Forks to the outlet, the South Thames River branch, and the North Thames River branch.
- v. No consistent patterns since 1986 were found for dissolved phosphorus, suspended sediment, or forms of nitrogen.
- vi. Seasonally, all parameters increased in the spring, coinciding with flows. Summer concentrations could be elevated (phosphorus because of internal load/release from sediments) or decreased (nitrogen due to biological uptake).
- vii. Other than total phosphorous, higher concentrations of most nutrients occur in the headwaters of the Thames and improve towards the downstream. These trends include significantly decreasing concentrations of dissolved phosphorus, and nitrogen from the headwater stations of the South Thames River and the North Thames River to the Forks in London.
- viii. Total phosphorus decreases in the lower reaches of the Thames River, while dissolved phosphorus remains relatively constant. Tributary assessment by Environment Canada showed between 1/3 and 1/2 of total phosphorus concentration for the Thames (downstream at Thamesville) is soluble phosphorus, with highest portion of soluble phosphorus in winter.
- ix. Suspended sediments significantly decrease in the North Thames River from the headwaters to the forks, but increases in the Thames River from the forks in London towards the mouth. There is no trend in the South Thames River for suspended sediment.

- x. Phosphorus loadings are contributed from across the Thames River watershed with: 60% of the load contributed upstream of the forks in London in the Upper Thames River watershed (North Thames branch and South Thames branch), 40% of the average annual total phosphorus load added to the river from the Forks in London to the outlet at Lake St. Clair.
- xi. Sediment loads are contributed from across the Thames River watershed, with: 35% of the load contributed upstream of the forks in London in the Upper Thames River watershed (North Thames branch and South Thames branch), 65% of the average annual sediment load contributed from the Forks in London to the outlet at Lake St. Clair.
- xii. Point sources of phosphorus refer to discharge from wastewater treatment plants (WWTP) across the watershed. Loadings from measured discharge from the 30 WWTPs show a contribution of approximately 13% of the total phosphorus load in the Thames contributed in increments throughout the year.
- xiii. Non-point sources refer to all other sources of runoff (urban and rural) from areas across the watershed, made up of fertilizer, waste, detergents, etc. Non-point sources (rural and urban areas) dominate total phosphorus loads, contributing approximately 85% of the load. Non-point sources are more flow related, and therefore contribute to higher loadings in runoff in winter/spring and extreme rain events.

The findings of the assessment report is being used as a key resource in the development of recommendations related to water quality improvements in the Thames River watershed. Draft recommendations are being developed in four key areas, one specifically focused on phosphorus load reductions. To date TRCWR partners have collaborated to provide draft recommendations based on their respective programs and area of expertise. These recommendations will form a significant section of the Water Management Plan to guide management actions and implementation. The Water Quality Assessment report also led to follow up work being undertaken to assess monitoring efforts in the Lower Thames Valley watershed. This assessment has initiated the improvement of water quality monitoring in the LTVCA with initial funding to do more monitoring and established support for extending the period of monitoring at the only continuous monitoring station on the Thames River (Thamesville).

In conjunction with development of the Water Management Plan ongoing efforts to assess the implementation options that will be most effective and efficient in achieving the goals of the plan are underway. Assessing implementation options will involve understanding the characteristics, attitudes and behaviors of the landowners that will be involved. This research serves to guide the refinement of existing programs and development of new programs. A survey in the spring of 2013 targeted rural landowners in the Upper Thames and Grand River Watersheds providing data that has been the focus of statistical analysis and research papers. The Thames River Clear Water Revival collaborative endorsed and provided funding to expand this analysis and present the findings to partners and ultimately through the submission and publication of manuscripts to peer reviewed environmental journals. Two manuscripts have been completed to date, one is still being reviewed and refined with a target of publishing by year end, the other was published earlier this year in the journal of Agriculture and Environmental Letters <https://dl.sciencesocieties.org/publications/acl/abstracts/1/1/160005> .

Development of a comprehensive water quality data management system has also been ongoing since early 2015 using industry standard WISKI (Water Information System Kisters) software systems. This system supports the ability to collect, analyze and report on surface and ground water quality

and quantity and has been endorsed and supported by the TRCWR collaborative. Understanding nutrient enrichment in the Thames River watershed relies on accurately modelling critical relationships, which is dependent on the quality and completeness of water quality and quantity data records. Significant work to implement the software, develop database structures and import over 60 years of data was undertaken in 2015-16. Work continues to develop this environmental data management system in 2016 with financial support from the Ministry of Environment and Climate Change. Initiation of a larger working collaborative (WISKI Hub) has begun to support and share in the development of the system and provide economies of scale in the long run for partner Conservation Authorities. UTRCA is leading the development of a new WISKI Hub with emphasis on Conservation Authorities in the Lake Erie basin. This model is based on other Hubs that have been piloted amongst Conservation Authorities in other parts of the province.

The recent development of UTRCA Environmental Targets included a target aimed to address water quality issues in the Upper Thames Watershed specifically. The water quality target builds on nearly two decades of work and data highlighted in the UTRCA Watershed Report Cards along with decades of stewardship efforts. The targets were researched and developed by UTRCA technical staff to push for greater improvements in water quality than has traditionally occurred as highlighted by the Watershed Report Cards in five year cycles. These targets aim to make it possible to expand and evolve stewardship programs that improve water quality in each of the 28 Upper Thames subwatersheds. Work plans will be developed to bring improvements to the local environment at a subwatershed scale that will in turn support efforts to reduce phosphorus load to Lake Erie.

Stewardship:

Priority Subwatershed Project through GLASI funding

Last fall, the UTRCA submitted a successful proposal to the Ontario Soil and Crop Improvement Association to implement a small watershed scale project designed to determine the effectiveness of agricultural BMP's on reducing phosphorous in rural water quality. The location of the project is the upper Medway watershed. Farmers are provided with financial incentives to try different BMP activities all intended to keep phosphorous from entering the creek. An intense water quality monitoring component was started in the spring and will run until December 2017. The project is one of 5 projects funded in the western Lake Erie watershed.

Outreach and Education Project through GLASI funding

Early in 2016 the UTRCA completed a series of web-based case studies to illustrate the successful implementation of the types of BMPs that are eligible for the Farm Health Incentive Program (FHIP). Successful implementation accounts for both reduction in nutrient loading to Lake Erie and no loss of income. The case studies will assist Certified Crop Advisors and others in influencing farmers to implement the BMPS, and identify and promote champions who can provide local expertise.

The case studies focus on the following BMPs; cover crops, buffer strips, field windbreaks, erosion control structures and fragile land retirement. Each case study provides thorough project descriptions, photos, videos and landowner testimonials and they are available on the UTRCA website. All of the information is available as print-ready factsheets.

Great Lakes Water Quality and Ecosystem Health in the Thames watershed.

The UTRCA has partnered with OMFRA on large scale research and demonstration projects over the past few years (Watershed Environmental Evaluation Project). In recognition of the value of this work, OMAFRA has provided funds through the Canada-Ontario Agreement (COA) for the UTRCA to continue to build on the success of these past efforts. The main intent of the funding is to enable UTRCA to promote BMP's by engaging the broader agricultural community within our watershed and beyond. A specific component involved creating a team of local experts who produced a template to track the health of our soils over time. The funding has recently been extended to enable further research and demonstration projects to be implemented over the next 2 years.

Low Impact Development

Low impact development (LID) is a stormwater management method that detains, infiltrates, and filters stormwater runoff, typically in urban areas. By working in partnership with developers, municipalities, residents, and businesses, the UTRCA has been involved in the implementation of eight LID projects throughout the watershed, with nine more projects in various stages of development. UTRCA LID projects have included bioswales, rain gardens (bioretention), and a biofilter. By filtering water before it is discharged to the storm sewer, LID effectively reduces the concentration of different pollutants, including phosphorus, in stormwater runoff.

Clean Water Program

The CWP is a rural water quality initiative offering technical and financial assistance to landowners and community groups who carry out projects to improve and protect water quality. The CWP was initiated in 2001 as a partnership with the Counties of Middlesex, Oxford and Perth, the Cities of London and Stratford and the Town of St. Marys and continues today with over 3500 projects completed. Project types include wetland restoration, tree planting, soil erosion control, unused well decommissioning, wellhead upgrades, milkhouse washwater disposal, livestock fencing and septic system upgrades among others.

Project types may vary year-to-year as this is a local program administered locally to meet partner needs. About half of the funding for CWP cost-sharing is provided by our local municipalities with private funders and other levels of government providing the remainder.

UTRCA Forestry Programs

Each year the UTRCA Private Land Forestry Program plants approximately 50,000 trees for rural landowners/farmers. The bulk of these trees are planted in field windbreaks, as buffers along watercourses and on sloping land prone to erosion. All of these plantings help to reduced soil erosion. Keeping soil on the land and out of our watercourses helps to reduce phosphorus loading. These types of planting are eligible for cost share funding of up to 70% through the Clean Water Program, Forests Ontario 50 Million Tree Program and Ontario Power Generation (OPG) Funding.

Rural Drainage Project: Best Management Practices (BMP) Performance Monitoring

The objective of this project is to determine the effectiveness of BMP's in removing phosphorous and sediment from municipal drainage systems. The UTRCA has partnered with the University of Guelph on this MOEE funded project. The project has 2 components. A 100m section of Medway Creek has been naturalized with features such as riffles and pools. The idea being that a healthy watercourse has the ability to bio-assimilate nutrients such as phosphorous as the water moves

through the system. The second component has the U of G testing a new biofilter media for its ability to also remove phosphorous from the watercourse. As part of the monitoring program, water samples are collected routinely along with other indicators of stream health such as dissolved oxygen, temperature and benthic life. The University of Waterloo is set to run a tracer experiment this fall as an additional monitoring technique.

Erie P Market

This effort is part of a USDA Conservation Innovation Grant (CIG) being led by the Great Lakes Commission (GLC) to facilitate the development of a Water Quality Trading (WQT) program for this portion of the Lake Erie basin. This project is being referred to as the "Erie P Market".

The project is very much in its infancy. To-date, a tabular summary of existing trading program applications for Western Lake Erie Basin (WLEB) Water Quality Trading framework consideration has been drafted along with possible trading program characteristics. Programs from Ohio, Pennsylvania, Michigan and Ontario have been included. A draft cross-cut analysis of each program has also been completed.

For interest, the major potential trading partners within existing trading programs include sewage treatment plants, urban stormwater management and large feedlots. Also, regulations vary considerably within the WLEB which creates potentially huge challenges from area-to-area.


Nicole Zacharda is the Project Manager on behalf of the Great lakes Commission. There has been one webinar this summer to outline the project and a face-to-face meeting is planned for September 14th.


Other Programs within the UTRCA Watershed offered by the Ontario Soil & Crop Improvement Association

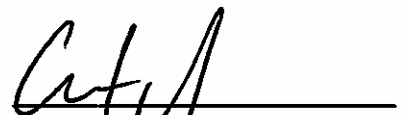
Great lakes Agricultural Stewardship Program (GLASI) - Farmland Health Incentive Program (FHIP) offers cost-sharing to farmers in the Lake Erie and Lake St. Clair watersheds who have completed Farmland Health Check-Ups and identified beneficial BMPs as a result.

Species at Risk Farm Incentive Program (SARFIP) - offers cost-sharing for farmers interested in habitat creation and protection best management practices that support species at risk. Several of the approved projects may include those that also reduce phosphorous loss to watercourses including soil erosion control, wetland restoration, tree planting and livestock fencing.

Prepared by:


Teresa Hollingsworth
Manager, Community and
Corporate Services.


Brad Glasman
Manager, Conservation
Services


Chris Harrington
Manager, Watershed Planning,
Research and Monitoring

MEMO

To: UTRCA Board of Directors
From: Chris Harrington, Coordinator, Planning and Research
Date: May 10, 2013 **Agenda #:**
Subject: Approval of Terms of Reference for **Filename:** WatershedPlanning#120
Development of a Thames River Water
Management Plan.

Recommendation:

That the Upper Thames River Conservation Authority Board of Directors endorse the Terms of Reference created by the project steering committee for development of an updated Thames River Water Management Plan.

In July 2008, City of London staff presented an initiative to the UTRCA called the Thames River Clear Water Revival that supported the concept of project planning and coordination on a watershed basis to improve the overall water quality of the Thames River. Although many groups, including the Conservation Authorities, have been involved in monitoring and reporting on the state of the Thames River watershed resources for many years, a comprehensive water management plan had not been developed for some time. In August 2008 the UTRCA Board of Directors endorsed the project concept in principle and directed staff to work with the City of London to further develop the project concept and engage other partners.

UTRCA staff viewed the initiative as an opportunity to update the 1975 Thames River Basin Water Management Study. In December 2011, UTRCA was awarded \$402,562.00 from the Ontario Ministry of the Environment Showcasing Water Innovation (SWI) fund to support development of an updated Water Management Plan for the Thames River Watershed. A steering committee of project partners from the Thames River Clear Water Revival was formed and included both the UTRCA and LTVCA, the City of London, Ontario Ministry of the Environment - Southwestern Region, Ontario Ministry of Natural Resources, Ontario Ministry of Agriculture and Food, Environment Canada – Great Lakes Area of Concern, and First Nations.

The Terms of Reference for a Thames River Water Management Plan is one of the first products to be developed. It identifies five big picture goals that will be further refined by the water quantity, water quality, communications and First Nations working / technical groups:

- 1. Identify and address water quantity management issues by incorporating climate change information, demands on and inputs into the river, and interaction between surface and ground water into hydraulic models and into structural / non-structural mitigation strategies.*

2. *Improve water quality of the Thames River watershed and downstream waterways by incorporating trends in sources, transport and accumulations of key parameters identified in the Great Lakes basin-wide initiatives and in important functions of the Thames River.*
3. *Strengthen community connections with the Thames River watershed and its relationship to the Great Lakes by developing a communication plan to increase awareness and value of the Thames River, and promote the Water Management Plan.*
4. *Understand Traditional Ecological Knowledge (TEK) and determine how it can inform water resource management decisions by seeking ways to assemble and implement TEK into studies and recommendations that ensure First Nation ownership, land use, and cultural heritage rights are respected.*
5. *Strengthen collaborations among watershed managers, First Nations, municipalities, Conservation Authorities, Provincial ministries and Federal departments by providing a forum for steering and technical working committees to consider new initiatives and address the goals of the terms of reference in a coordinated fashion.*

Staff is recommending that the Board of Directors authorize the Terms of Reference for the Thames River Water Management Plan. Authorization signifies an understanding of the scope and deliverables; agreement with the measures of success; and a commitment that staff continue to work with the various watershed managers, First Nations, municipalities, Conservation Authorities, Provincial ministries and Federal departments to develop a Water Management Plan.

Prepared and Recommended by:

*Tara Tchir
Project Manager*

*Chris Harrington
Coordinator, Planning and Research*

August 2016

To the Board + Staff

many thanks to all of you for the lovely gifts presented to me at my last Board meeting.

The jewellery is gorgeous & the gift certificates will be well used. As for the scotch glass - it's been baptized!

Your kind words were greatly appreciated and, as I said, I will certainly miss each and every one of you. I will also miss being a part of the incredible work being done by this organization.

I hope I have the opportunity to get back and visit, but if anyone is in Atlanta - look me up!

Thank you again
Jare