



**LONG POINT REGION CONSERVATION AUTHORITY
STAFF REPORT**

Date: September 6th, 2017

File: 3.6.2

**To: Chair and Members,
LPRCA Board of Directors**

From: General Manager, LPRCA

Re: National Disaster Mitigation Pgm - Flood Forecasting System (L. Minshall)

RECOMMENDATION

**THAT LPRCA makes application to the National Disaster Mitigation Program for funding to improve its flood forecasting and warning capabilities, and
THAT LPRCA plan during its 2018 budget discussions to contribute 50% of the total project cost, with 43% from General Levy – Capital and 7% in-kind staff time, as its share of the matched funds, and
THAT a letter be sent to member municipalities requesting endorsement for the project.**

STRATEGIC PLAN

Goal #1 - To develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion.

BACKGROUND

The federal National Disaster Mitigation Program, announced in April 2015, will pay 50% of the cost for updated flood mapping, flood mitigation planning and small scale mitigation works.

Staff is proposing to apply, through the Ontario Ministry of Municipal Affairs (MMA), for funding to update and improve its flood forecasting capability. The application is due to MMA on September 15th, 2017.

Only the Provinces and Territories can apply for funding under the program and must apply for 2018-19 funding by October 31st, 2017. The Ministry of Municipal Affairs (MMA) is taking the lead in Ontario, with technical input from the Ministry of Natural Resources and Forestry (MNRF). MMA requires conservation authorities to partner with municipalities to undertake projects since conservation authorities have the lead in mapping flood risk areas and flood forecasting and warning while municipalities have the lead in land-use planning and flood emergency response. MMA will gather, rank and submit applications on behalf of the conservation authorities.

Improvements to LPRCA's flood forecasting and warning system are eligible for NDMP funding in the Small-scale Mitigation Works – Non-structural category.

LPRCA is mandated by the Province to operate and maintain a flood forecasting and warning system for its watercourses and Lake Erie shoreline. Flood watches and warnings are issued by LPRCA to help reduce the risk to life and property from floods. These flood messages are issued to provide early notice to municipal flood coordinators, emergency responders and the

public. The LPRCA Flood Forecasting and Warning Program is described in detail in the staff report to the Board at its April 4th, 2017 meeting.

To evaluate the potential risk of flooding, LPRCA staff monitors weather and watershed conditions including precipitation, temperature and wind forecasts, soil wetness, snow depth and water content, rainfall, precipitation radar, water levels, streamflow and ice conditions. Thresholds for various existing and forecast conditions trigger watches and warning messages for flood damage centres in the watershed. The service is offered on a continuous (24/7) basis.

LPRCA's data monitoring and forecasting systems have aged and have not kept pace with technology and the state of practice in Ontario. There are a number of areas where the system can be improved and gaps filled through the use of current technology.

The improvements to the LPRCA flood forecasting and warning system will:

- a) Automate data collection from the stream flow and rainfall gauges (now done manually) by implementing WISKI/SODA software through the Western Ontario WISKI Hub operated by the Upper Thames River Conservation Authority (UTRCA). WISKI has become the standard in Ontario for data collection, management and analysis with MNRF and at least half of CAs using the software. The UTRCA-managed WISKI hub allows the smaller CAs to implement the system at lower licensing and maintenance cost. Lower Thames, Essex, Maitland, Sudbury and Lakehead CAs are already part of the hub and St. Clair, Saugeen and Grey-Sauble CAs are planning to join in 2018. There is also an Eastern Ontario Hub managed by Quinte Conservation. The larger CAs maintain their own WISKI systems.
- b) Improve the reliability of data collection from the LPRCA stream flow and rain gauges by upgrading weak communication links and replacing aging/failing data loggers and modems.
- c) Improve the reliability of flood forecasting and warning services by providing back-up power at the LPRCA office.
- d) Implement a rotating 24/7 duty officer system and upgrade communication tools (tablet, smart phones).
- e) Re-establish watch and warning thresholds for a range of weather and watershed conditions by investigating historical events and modeling results.
- f) Develop a range of simple to more sophisticated forecast tools, making use of LPRCA's existing hydrology model.
- g) Facilitate duty officer training and effectiveness by updating the Flood Forecasting and Warning Operations Manual.

The cost of these improvements is estimated to be:

	'2018	'2019
Software licenses required to implement WISKI and SODA software through the Western Ontario WISKI Hub	\$15,000	\$6,000
Hardware upgrades streamflow and rainfall gauges	\$15,000	
Backup power for the Flood Control Centre (LPRCA office)		\$20,000
Communications tools for rotating duty officers	\$ 4,000	
Investigation to re-establish watch and warning thresholds	\$16,000	
Develop a range of flood forecasting tools	\$15,000	\$24,000
Prepare Flood Forecasting and Warning Operations Manual		\$15,000
Total Cost	\$65,000	\$65,000
LPRCA's Cost	\$28,000	\$28,000

BUDGET IMPLICATION

The cost to undertake the listed improvements to the flood forecasting and warning capabilities is estimated to be \$140,000 over two years. The contribution of matching funds over two budget years would be as follows:

	<u>Total</u>	<u>2018</u>	<u>2019</u>
Total estimated project cost	\$130,000		
Public Safety Canada (NDMP program)	\$ 65,000	\$ 32,500	\$ 32,500
Matching funds:			
LPRCA General Capital Levy	\$ 56,000	\$ 28,000	\$ 28,000
LPRCA in-kind (15% of matching cash)	<u>\$ 9,000</u>	\$ 4,500	\$ 4,500
Total matching funds	\$ 65,000		

MMAH requires that the application be accompanied by a letter of support from the LPRCA Board and also from municipalities affected by the project. MMAH has said that a letter of support from a senior municipal staff member (signing officer) will meet their requirements.

The ongoing annual cost of maintaining the WISKI/SODA software and the services of the Western Ontario WISKI hub is \$6,000 per year.

Prepared by:



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Approved and submitted by:



Cliff Evanitski
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